National VVF Project Nigeria
obstetric fistula surgery training

training of 22 doctors and 27 nurses

5 training workshop sessions of 14 days of 4-6 doctors and 4-8 nurses
under mdg funding

report

kees waaldijk MD PhD
chief consultant surgeon
National VVF Project Nigeria
obstetric fistula surgery training

training of 22 doctors and 27 nurses

5 training workshop sessions of 14 days of 4-6 doctors and 4-8 nurses each

under mdg funding

Babbar Ruga National Fistula Teaching Hospital
Katsina

Laure Fistula Center
Murtala Muhammad Specialist Hospital
Kano

kees waaldijk MD PhD
chief consultant surgeon

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during the 5 training workshops executed so far over 66 training days

a total of 384 step-by-step operations have been performed
however, only 12 fistulas suitable for trainees

52 clinical and 48 classroom lectures were delivered

22 doctors and 27 nurses followed our introductory course to the complex trauma of the obstetric fistula

by the end of the training all the patients in the hospital had been attended to and not a single one was left on the waiting list

stress upon the chief trainer surgeon 800 hours minimum private teaching, organization, documentation reporting
table of contents

executive summary 5
introduction 6
training module 7
first training session katsina as pilot 10
second training session kano 19
third training session katsina 28
fourth training session kano 38
fifth and last training session katsina 45
guidelines obstetric fistula surgery training 54
obstetric fistula training and trainees 58
training curriculum 59
training module 61
obstetric fistula training center 62
obstetric fistula repair center 63
obstetric fistula rehabilitation center 64
nation-wide obstetric fistula service 65
obstetric fistula tourism 66
training doctors from industrialized world 68
surgical training of non-doctors 69
fistulas for beginners 70
training curriculum for doctors 78
comments competency-based training manual 85
multiple choice questionnaire 90
questionnaire I 92
questionnaire II 104
acknowledgment 106
obstetric fistula surgery training  
session 1 + 2 + 3 + 4 + 5

executive summary

considering the short-term 14-day training programme annex workshop this can only be considered as an intensive exposure to the complex trauma of the obstetric fistula and an introduction to the noble art of its (surgical) management.

each session consisted of 14 consecutive days of recap of the previous day, ward-round, surgery with clinical lectures, questions and answers and classroom lectures, selection of patients and postoperative wardround.

at the beginning of the course all the trainees were handed out a cd-rom with 5 books about the obstetric fistula, the global competency-based training manual, a logbook and a questionnaire for active participation, self-study and self-evaluation.

since there are 2 operating tables available 2 trainee doctors and 2 trainee nurses were assigned to each table and to one of the 2 operating surgeons.

the whole training was executed according to the guidelines of global competency-based training manual.

all the trainees were supposed to keep meticulous documentation of what they saw, did and learned in their logbook.

on special request by all the trainees spinal anesthesia became part of the training course and all the participants were able to practice.

the good news is that they were all highly interested, very cooperative and really doing their best to pick up.

by the end of the course all the participants had a far better understanding of the complex trauma of the obstetric fistula and its causes and of the urine and stool continence mechanism in the female.

the most important lesson they learned was: immediate bladder catheterization the moment the leaking of urine becomes manifest.

and all of them understood very well that they have to come forward for proper surgical training before they are able to start their own obstetric fistula surgery.

the whole training exercise was documented meticulously, e.g. prospective computerized operation reports with prediction as to healing and continence.

a total of 22 doctors and 27 nurses attended these sessions, a total of 384 operations were performed and a total of 52 clinical and 48 classroom lectures were delivered with emphasis on the obstetric trauma in its broadest sense.

total time spent by the chief consultant 800 hours private teaching/organization.
as based on our 35,000 repairs with evidence-based success of 97-98% at closure
and the training of 350 doctors and 340 nurses since started in 1984,

we were approached by mdg to train 20 doctors and 20 nurses in the basics of the
obstetric fistula and its (surgical) management during a training programme of 14
days

we set out a strategy for this novel type of training to make the most of it and we
came up with an intensive training course of some 120-140 hours of theoretical
lectures and practical surgical sessions whereby the quality to our patients and to
our training will be guaranteed; see annexes

it should be considered an intensive exposure as an introduction to the complicated
complex trauma of the obstetric fistula and its (surgical) management

for this we will follow the internationally approved/accepted global competency-
based training manual as state-of-the-art guidelines

throughout the training course the accent will be on the quality and not on the
quantity; for this we plan 3 operations per operating bed for 12 days; that will be 72
operations during the 2 weeks of training; or a total of 360 operations during the 5
sessions of 2 weeks

continuous monitoring will be provided by mdg, fmoh and ktmoh

a comprehensive evaluation report will be produced at the end of each 2-week
training session and for the whole training programme
obstetric fistula surgery training
training module etc etc

day-to-day outline of the programme

day 1
opening ceremony, introduction of participants, explaining the training to all participants and questionnaire for self-evaluation, tour of the center, introductional lecture about the obstetric fistula in its broadest form

day 2-13
8.00 to 9.00 wardround
9.00 to 14.00 surgery, examination etc
14.00 to 1500 lunch etc
15.00 to 17.00 theoretical lectures, questions & answers about procedures etc
17.00 to 18.00 wardround

day 14
wardround, ?surgery?, explaining the initial questionnaire for self-evaluation, handing out the certificates, evaluation of the programme by trainers, trainees and sponsors, closing ceremony

content of training
history taking, examination, preoperative care
pre-anesthesia care, spinal anesthesia
step-by-step surgery with explanation of the whole complex trauma of the obstetric fistula customized to the individual patient
postoperative care
health counselling right from the beginning when the patient presents herself

training process
2 operating beds with each a trainer + 2 consultant trainees
chief consultant surgeon as supervising the whole process of training: practically and theoretically

self-study by the participants:
study material for the trainees on their own; before starting each trainee will be given a cd-rom with the following:
(surgical) management of bladder fistula in 775 women in Northern Nigeria; phd thesis; 1989
step-by-step surgery of vesicovaginal fistulas; 1994
obstetric fistula surgery; art & science; 2004
25 years of obstetric fistula surgery; report XXV for the years 1984-2008
national vvf project report XXVII for the year 2010

presurgical examination
to confirm fistula, pudendal nerve function + peroneal nerve function, general health, hydration, blood pressure
**spinal anesthesia**
3 ml heavy bupivacaine 0.5% at L4/L5
monitoring

**examination under anesthesia just before surgery is started**
all the obstetric intravaginal lesions to be demonstrated, then based on this the fistula is classified, surgical plan of action outlined and performed/demonstrated and prognosis given as to healing and as to continence in 5% range

**questions & answers**
after each surgical procedure

**classroom lectures:**
pelvis and pelvis floor anatomy
urine continence mechanism in the female
stool continence mechanism in the female
the complex trauma of obstetrics in relation to pelvis and pelvis floor
immediate management by catheter and early closure
classification of urine fistulas as related to the obstetric trauma
classification of stool fistulas as related to the obstetric trauma
principles of surgery according to classification with prognosis as to closure and continence
urine incontinence as related to defects in the pubocervical fascia with consequences for continence surgery
genuine urine incontinence as related to defects
prevention of postrepair incontinence with reconstructive steps during the repair
conservative management of postrepair incontinence
reconstructive surgical management of postrepair incontinence
preoperative preparation
the importance of high oral fluid intake pre- and postoperative
spinal anesthesia

**data collection and data management**
since data are very important in monitoring and the management and the project as a whole, special emphasis will be placed on how to collect which data and how to manage the data

**training modules**
during the whole training period the isofs-figo-rcog manual will be used as objective standard of international state-of-the-art training in a prospective way also to test the manual in a critical way

**training time**
since the training will be 10 hours a day for a full 14 days this will amount to 120-140 hours of individual training which is comparable to 4 week-training of 35 hours per week compressed within 14 days

at the very end the same questionnaire will be explained for self-evaluation by all participants
from now onwards
operation report added to
other particulars and
handed over to the patient
since that is

where they belong

and for other doctors to read
at subsequent pregnancies

and to take appropriate action
at subsequent deliveries
obstetric fistula surgery training

Babbar Ruga National Fistula Teaching Hospital
Katsina

first session as pilot

training of 4 consultants and 4 nurses

from monday 30.05 thru sunday 12.06

logbook

sunday 29.05
14.00 to 17.00 discussion with trainers about how to process

monday 30.05
7.00 preparation of facilities
14.00 arrival of tranees, again discussion with trainers, extensive discussions with staff of FMOH
20.00 selection of patients for the training workshop
20.00 further discussions with FMOH staff

day 1
tuesday 31.05
6.30 preparation of the hospital
10.00 small opening ceremony, introduction of participants, explaining the training to all participants, tour of the center, mobilizing the funds
12.00 surgery with step-by-step teaching
   1 state-of-the-art lecture and demonstration of reconstructive surgery in surgery sphincter ani rupture with preoperative theoretic explanation, explanation and demonstration of spinal anesthesia, step-by-step reconstruction of internal sphincter (anorectum), end-to-end reconstruction of sphincter ani and repair of perineal body with (in)direct re-union of transversus perinei and posterior re-union of bulbocavernosus muscles in para VI (5 alive)
   2 state-of-the-art lecture and demonstration of fixation of cervix onto L superior pubic bone ramus/arcus tendineus fascia/obturator internus muscle against levator ani muscle as mini-invasive uterus-sparing procedure for total 3° cervix prolapse in para II (all alive)
15.00 four lectures
   a sphincter ani rupture; a complex trauma
   b total 3° cervix prolapse
   c the obstetric fistula in its broadest sense
   d questions & answers about procedures and lectures
17.30 wardround of postoperative patients
19.00 end of the working day
day 2
wednesday 01.06.11
8.00 recap of the previous day by dr nasir garba from fmc azare
8.30 wardround
9.00 surgery: with step-by-step teaching
  3 state-of-the-art lecture and demonstration of sphincter ani rupture
again demonstration by chief surgeon/trainer of how to handle the
systematic step-by-step reconstructive surgery of the sphincter ani
rupture with theoretic teaching of the stool continence mechanism in
the female according to the functional anatomy with the emphasis on
the internal smooth-muscle sphincter in para VIII (7 alive)
4 repair pof type IIa fistula as anteriolateral trauma at R as second
obstetric fistula in para VI (0 alive)
5 type IIa uvvf-repair by trainee doctor under direct supervision/assistance
of chief surgeon in para I (0 alive)
6 bilateral ureter catheterization + uvvf-repair + bilateral fascia fixation
as type IIa in para I (0 alive)
7 catheterization R ureter and early closure of type IIa in para XIV (9
alive)
  8+9 combined uvvf + cs-vcvf-repair in para II (1 alive)
  10 complicated type IIa fistula repair + bilateral fascia fixation in para
IX (0 alive) with severe postpoliomyelitis syndrome R leg
15.00 handing out the isofs-figo-rcog training manual and questionnaire for
self-evaluation to all participants
no lecture in order to allow the participants to fill out the questionnaire
discussion of the programme + forming teams for better postoperative
care by dr said ahmad; it was agreed upon that each team would stay
in the postoperative ward up till 20.30 for supervising the immediate
postoperative care
17.30 postoperative wardround
17.30 logbook discussion with trainee doctor about her own repair
18.00 selection of patients for next day
19.00 end of the day

day 3
thursday 02.06
6.30 preparations for the day
8.00 recap of the previous day by dr idris ahmed from fmc keffi
8.30 extensive postoperative wardround
10.00 surgery with step-by-step teaching
  11 state-of-the-art lecture and demonstration of uterus-sparing fixation
of cervix in 3° total cervix prolapse in para VII (5 alive)
12 continent urethra(lization) reconstruction in type IIb mutilated
yankan gishiri fistula in 69-yr-old P0 bco congenital condition
13 type IIa uvvf-repair by trainee doctor under direct supervision/assistance
by chief surgeon in para II (all alive)
14 type IIa uvvf-repair by trainee doctor under direct supervision/assistance
by chief surgeon in para XI (9 alive)
15 extensive type IIb uvvf-repair as first stage in para IX (4 alive)
16.00 two lectures
17.30 postoperative wardround
logbook discussions with tranee doctors about their own procedure
19.00 end of the day
day 4
friday 03.06
6.30 screening of patients
8.00 recap of previous day by dr sadiya nasir from uduth
8.30 wardround
9.00 surgery with step-by-step teaching

16 state-of-the-art lecture and demonstration by chief surgeon of surgery for total post IIAb repair total incontinence: urethralization by bilateral (re)fixation of pubocervical fascia fixation onto paraurethra_euo atf in para I (0 alive)
17 demonstration of fistula in advanced cervix carcinoma as another cause of fistula
18 type IIa uvvf-repair by trainee under direct supervision/assistance by chief surgeon in para I (alive)
19 state-of-the-art lecture and demonstration by chief surgeon of circumferential fistula type IIAb: circumferential repair with bilateral ureter catheterization, end-to-end vesicourethrostomy and bilateral refixation of pubocervical fascia onto paraurethra_euo atf in para I (0 alive)

20 type I vcvf-repair of new 2nd obstetric fistula 14 years after successful cs-vcvf-repair in babbar ruga in 1997 in para V (0 alive)
21 + 22 type I vcvf-repair as first stage + type Ib rvf-repair with blunt disruption of rectum stricture in pat with multiple 3 fistulas in para VI (3 alive)
23 type I vcvf-repair in para V (0 alive)
24 complicated type IIa uvvf-repairby trainer operated already 2x in niger in para VIII (6 alive)
13.00 break
16.30 four lectures
e fistulas for beginners
f pelvis anatomy + pelvis floor anatomy: arcus tendineus fasciae, pubocervical fascia, levator ani muscle etc etc
g obstetric trauma in relation to pelvis inlet and pelvis floor structures
h exceptional obstetric vulva trauma/sphincter ani rupture/atonic bladder + its surgical management

17.45 postoperative wardround
19.00 end of the day

day 5
saturday 04.06
6.30 selection of patients + preparations for the day
8.00 recap of previous day by mrs rosemary obiorah
8.30 wardround
9.00 surgery with step-by-step teaching

25 state-of-the-art lecture and demonstration by chief surgeon of reconstruction of mutilated sphincter ani rupture IIb already operated 3x with severe introitus stenosis in para II (all alive)
26 transurethral stone removal as first stage for third fistula as preparation for continent urethra reconstruction as 2nd stage in para XI (6 alive)
27 highly complicated ps-like mutilated type IIb fistula repair as last resort final in para I (0 alive) operated 2x by incompetent surgeons
28 catheterization R ureter and repair of type IIa fistula in para I (0 alive)
29 repair and transverse fascia repair in mutilated type IIa fistula in para III (0 alive) operated 2x
30 vvf-repair of type I fistula in para III (0 alive) operated 1x
31 early closure of type I fistula in para VII (4 alive)

16.00 2 lectures
i classification of vvf with results in 1,716 patients
j pubocervical fascia defect obstetric and incontinence

17.00 wardround

17.00 selection of patients for next day
19.00 closure of the day

day 6
saturday 05.06
7.00 preparations for the day
8.00 recap by mrs binta adamu garba
9.00 surgery with step-by-step teaching
32 state-of-the-art lecture and step-by-step demonstration of reconstructive surgery for sphincter ani rupture already operated 2x
33 repair of type I fistula by trainee doctor under direct supervision/assistance by chief surgeon in para VIII (5 alive)
34 repair and fascia repair/bilateral fixation of residual type IIAb lungu fistula in para I (0 alive)
35 urethralization by bilateral fascia fixation in total post IIAb intrinsic stress incontinence grade III in para I (0 alive)
36 assessment of type I cs-vvf in para VIII (4 alive) with severe obesity and fistula high up in vagina; first to slim down
37 bilateral fascia fixation in total post IIa intrinsic stress incontinence in para I (0 alive)
38 repair + bilateral fascia fixation in large type IIa fistula in para VI (2 alive)
39 uvvf-repair + transverse fascia repair of type IIa fistula in para VII (0 alive) leaking 17 yr since delivery I and operated 1x elsewhere

16.30 no lectures since it is sunday
16.30 wardround
16.30 closure by participants
18.00 selection of patients for next day
18.00 closure of the day

day 7
sunday 06.06
7.00 preparations for the day
8.00 recap by dr idris ahmed (sphincter ani reconstruction) and by mrs okoye s lami
9.00 surgery with step-by-step surgery
40 state-of-the-art lecture and step-by-step demonstration of cervix fixation in total 3° cervix prolapse in para IX (8 alive)
41 type IIAb repair by trainee doctor under direct supervision/assistance of chief surgeon/trainer in para VI (4 alive)
42 early closure and transverse fascia repair of type IIa fistula by trainee doctor
43 assessment by methylene blue iv/and dye test in 13-yr-old girl suspected of ectopic ureter
44 tah-cs-vvf-repair as second stage after successful uvvf-repair as first stage in para VI (3 alive)
45 catheterization L ureter and cs-vcff-repair in type I fistula not healed by catheter in para X (2 alive)
46 early closure of type I tah-cs fistula in para II (all alive)
47 bilateral fascia fixation in total post IIa intrinsic stress incontinence in para I (0 alive)

16.00 lectures

K prevention of postrepair stress incontinence

17.00 postoperative wardround

logbook discussion with 2 trainees doctor about their own repair

17.30 selection of patients

18.30 end of the day

day 8
tuesday 07.06

7.00 preparations for the day

8.00 recap by dr sunday e adaji

830 wardround

900 surgery with step-by-step teaching

48 state-of-the-art fixation of cervix in total 3° cervix prolapse in para VI (3 alive)

49 repair of residual type IIa fistula after early complicated closure in para VIII (4 alive)

50 repair of type I tah-cs fistula in para VII (0 alive)

51 state-of-the-art lecture and step-by-step demonstration of bilateral ureter catheterization and circumferential bladder fixation into euo as first step in reconstructive surgery of mutilated extensive type IIb fistula operated 1x in para I (0 alive)

52 uvvf-repair with fascia repair of type IIa fistula in para XIII (8 alive)

53 bilateral ureter catheterization and closure of type I cs-vcff fistula in para X (6 alive)

54 type I cs-vcff fistula repair as second stage after successful closure of uvvf as first stage in para IV (3 alive)

55 residual type IIa fistula closure in second obstetric fistula in para II (1 alive) operated 1x

1600 lectures

I immediate management of the obstetric fistula by catheter and/or early closure

17.00 wardround and selection of patients

18.30 end of working day

day 9
wednesday 08.06

700 preparations for the day

800 recap by mrs lami sa osori

830 wardround

900 surgery with step-by-step teaching

56 demonstration of catheter for immediate management in 5-day-old fistula in para X (3 alive) with second obstetric fistula

57 state-of-the-art urethra reconstruction as second step after nicely healed fixation of bladder into euo as first step in type IIb yankan gishiri fistula in para 0

58 excision of scar tissue and repair of type IIa fistula with objective stress incontinence by trainee under direct supervision in para IV (0 alive)
transverse fascia repair and bilateral fixation as **last resort** in total post IIAb intrinsic stress incontinence in para III (0 alive) with **third consecutive** obstetric fistula/leakage

**ps-like** rvf repair of large type Ic rectovaginal fistula as **minimum surgery** after successful closure of extensive type IIAb urine fistula in para II (0 alive)

**61** closure of type IIAa fistula after bladder stone removal in para IX (4 alive)

**62** complicated repair of mutilated extensive type IIAa fistula in para III (1 alive) operated 2x by inexperienced surgeons

**63** early closure of type IIAa fistula as **second** obstetric fistula in PXI (2 alive)

**64** last resort final uvvf-“repair” with euo-rhaphy after already last resort final repair in mutilated extensive type IIAb fistula in PI (0 alive)

**65** demonstration of what can go wrong in inexperienced hands

**66** demonstration of closure with bilateral fascia fixation in post IIAb intrinsic incontinence with minute fistula in para I (0 alive)

**67** early closure of type IIAa fistula by trainee doctor under personal supervision/assistance by chief surgeon in para X (4 alive)

**68** last resort final shortening euo-plasty with bilateral fascia fixation in total post extensive IIBb repair intrinsic stress incontinence in para I (0 alive)

**69** continent urethra/avw reconstruction in total post extensive IIAb urine intrinsic stress incontinence in para I (0 alive)

**70** vaginal removal of impacted bladder stone with small fistula after multiple repairs in para I (0 alive)

**71** urethralization and bilateral fascia fixation in total post extensive IIBb urine intrinsic stress incontinence in para VIII (7 alive)

**72** bilateral fascia fixation in total post IIAb urine intrinsic stress incontinence in para VI (3 alive)

**73** dilatation + foley ch 18 in acute urine retention due to uv-stricture after multiple repairs and deliveries in para III (0 alive)

**74** catheter treatment for total postpartum post IIAb incontinence grade III in para IX (2 alive) as **second** obstetric leakage

**75** catheter treatment for total postpartum incontinence grade III and stool/flatus incontinence and saddle anesthesia due to sacral plexus trauma in para I (0 alive)

16.00

lectures dr hallriu

m vvf in Nigeria

n preoperative preparation

17.30 postoperative wardround

logbook discussion with 2 trainee doctors about their own repair
18.00  selection of patients
19.00  end of the day

day 11
friday 10.06
7.00  preparations for the day
8.00  recap by dr idris ahmed
8.30  wardround
9.00  surgery with step-by-step teaching
   76 demonstration of minimum surgery for rvf type Ic as preferred by
      patient in totally mismanaged vvf- and rvf patient with colostomy and
      suprapubic catheter for 5 yr in para III (1 alive)
   77 state-of-the-art fixation of cervix in total 3º cervix prolapse in para V
      (4 alive)
   78 last resort final bilateral pcf/avw fixation in post extensive
      “inoperable” type IIIB intrinsic_stress incontinence grade III in para I (0
      alive)
   79 last resort final bilateral pcf fixation in total post IIAb urine intrinsic_-
      stress incontinence after multiple repairs in para I (0 alive)
   80 bilateral fascia fixation in total post extensive IIIBb urine intrinsic_-
      stress incontinence after multiple repairs in para I (0 alive)
   81 uvvf-repair + euo-rhaphy in inoperable IIIBb fistula after somebody
      cut her up for ba hanya after successful repair in para I (0 alive)
   82 urethralization by bilateral fascia fixation in post extensive IIAb
      urine intrinsic_stress incontinence in para I (0 alive)
13.00  break
16.00  lecture by dr said ahmad
     o postoperative care
17.30  wardround
17.00  dr chris osa from FMOH arrives
17.30  selection of patients
19.00  end of the day

day 12
saturday 11.06
7.00  preparations for the day
8.00  recap by ms binta garba
8.30  wardround
9.00  surgery with step-by-step teaching
   83 state-of-the-art demonstration of advancement/circumferential
      fixation of bladder into euo in extensive type IIIB fistula as first stage
      in ba hanya in para I (0 alive)
   84 bilateral fixation of pc fascia onto para-euo atf as last resort final
      procedure in post IIAb total intrinsic_stress incontinence after vvf/rvf-
      repair in para II (0 alive)
   85 uvvf-repair + euo-rhaphy in type IIAb fistula in para VI (1 alive) after
      operation elsewhere
   86 vvf-repair of type I fistula caused by caustics for reasons unknown in
      para XI (4 alive)
13.00  evaluation of the training programme by trainees and trainers
     small closing ceremony
     handing out certificates to participants
     farewell wishes
15.30  participants left hospital
17.00 wardround
18.00 selection of patients
19.00 end of working day

day 13
sunday 12.06

participants travelled home and routine returned

900 87 ps-like 4/5 circumferential uvvf-repair as minimum surgery of new second obstetric extensive type IIb fistula in para VII (1 alive) who had a successful repair post delivery III (0 alive)

88 complicated ps-like uvvf-repair as last resort final of extensive type IIa fistula in para I (0 alive) operated 3x elsewhere and leaking for 25 yr with extensive anteriobilateral trauma and long-standing non-drinking

14.00 chief surgeon travelled to Kano for surgery and for organizing the second session starting Monday 27th of June 2011

17.15 arrival at hotel and end of working day

kees waaldijk MD PhD

21st of June 2011

chief consultant surgeon
### Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Facility</th>
<th>Location</th>
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<tbody>
<tr>
<td>Dr Idris Ahmad</td>
<td>Chief Medical Officer</td>
<td>FMC Keffi</td>
<td>Keffi</td>
</tr>
<tr>
<td>Mrs Rosemary Obiorah</td>
<td>ACNO</td>
<td>FMC Keffi</td>
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<td>Dr Sadiya Nasir</td>
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<td>FMC Udu</td>
<td>Sokoto</td>
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<tr>
<td>Mrs Lami S A Osori</td>
<td>ACNO</td>
<td>FMC Udu</td>
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<tr>
<td>Dr Nasir Garba Abdullahi</td>
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<td>Azare</td>
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<tr>
<td>Ms Binta Adamu Garba</td>
<td>Sno</td>
<td>FMC Azare</td>
<td>Azare</td>
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<tr>
<td>Dr Sunday Eneme Adaji</td>
<td>Consultant Obs&amp;Gyn</td>
<td>AbUTH</td>
<td>Zaria</td>
</tr>
<tr>
<td>Mrs Lami S Okoye</td>
<td>ACNO</td>
<td>AbUTH</td>
<td>Zaria</td>
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### Trainers

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Dr Said Ahmad</td>
<td>Consultant Obs&amp;Gyn</td>
<td>Jahun VVF Center</td>
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<tr>
<td>Dr Idris A Halliru</td>
<td>Moh</td>
<td>Babbar Ruga Hospital</td>
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### Facilitators Pre-, Intra- and Post-Operative Care

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<th>Name</th>
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<tbody>
<tr>
<td>Dr Abdulmajid Mudasiru</td>
<td>CMD</td>
<td>Babbar Ruga Hospital</td>
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<tr>
<td>Alh Abdullahi Haruna</td>
<td>CNO</td>
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<td>Alh Kabir K Lawal</td>
<td>CNO</td>
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<td>Alh Gambo Lawal</td>
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<tr>
<td>Hajiya Adetutu Ajagun</td>
<td>CNO</td>
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<tr>
<td>Hajiya Amina Mamman</td>
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### Chief Trainer

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<th>Name</th>
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<tbody>
<tr>
<td>Dr Kees Waaldijk</td>
<td>Chief Consultant Surgeon</td>
<td>Babbar Ruga Hospital</td>
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obstetric fistula surgery training

second session

Laure Fistula Center
Murtala Muhammad Specialist Hospital
Kano

training of 4 consultants and 5 nurses
from monday 27.06 thru sunday 10.07.11

logbook

day 0
sunday 26.06
katsina
7.00 catheter treatment 6x + surgery 3 operations + administration
14.00 traveling of chief surgeon by road to kano
17.15 arrival at hotel
17.30 supposed arrival of participants but only 2 turned up

day 1
monday 27.06
7.00 preparation of facilities
9.00 introduction of participants, explaining the training to all participants, explaining the logistics/financial implications by representative of FMOH
10.00 surgery
89+90 complicated bilateral ureter catheterization + uvvf-repair + bilateral pcf fixation of type IIAa fistula and rvf-repair of type Ia fistula in one patient para III (0 alive)
91 continent euo rhaphy/urethra/pcf/avw reconstruction as last resort in para I (0 alive) following urethra/rvf-repair after yankan gishiri fistulas and then uvvf-repair of obstetric type IIBa fistula
92 uvvf-repair of type IIAa fistula in para I (0 alive)
13.00 selection of patients for the training workshop
14.30 postoperative wardround
15.00 end of the working day

day 2
tuesday 28.06
7.00 preparations for the day
8.00 wardround
surgery with step-by-step teaching

93 state-of-the-art lecture and demonstration of reconstructive surgery in mutilated sphincter ani rupture IIb with preoperative theoretic teaching of the stool continence mechanism, explanation and demonstration of spinal anesthesia, step-by-step reconstruction of internal sphincter (anorectum), end-to-end sphincter ani reconstruction and repair of perineal body with (in)direct re-union of transversus perinei and bulbocavernosus muscles in para I (1 alive) already operated 2x, now 58 days post partum

94 repair of minute tah-cs type I fistula by early closure minimum surgery in para XII (8 alive)

95 repair of extensive type IIb fistula as result of infection (boil) at 3 yr of age, leaking for 33 years, as first stage minimum surgery in para VI (1 alive)

96 continent urethra/fascia/avw reconstruction of type IIb operated 2x in para I (0 alive) with severe scarring, poor-quality tissue and total cervix fixation pulling on repair

97 complicated 4/5 circumferential uvvf-repair of type IIAb fistula in para I (0 alive)

98 uvvf-repair of type I fistula as early closure in para IX (3 alive) due to anterior trauma

99 repair of type I fistula in para IV (1 alive)

lecture

a. stool continence mechanism, pathophysiology and development of sphincter ani rupture as cut-thru trauma and systematic reconstruction of the functional anatomy in this complex trauma

100 state-of-the-art lecture and demonstration of cervix/pcf fixation onto levator ani muscle fascia thru superior pubic bone periost/att/atl/internal obturator and levator ani muscles in para IV (3 alive) with total 3° cervix prolapse for 9 yr which started spontaneously after delivery I at 16 yr of age

101 end-to-end reconstruction of small anterior sphincter ani defect + perineal body reinforcement as last resort in severely obese para IX (all alive) complaining about tusa pv

102 early closure minimum surgery with transverse pcf repair/bilateral fixation of type IIAa or IIb fistula in para I (0 alive)

103 early closure of retracted type IIAa fistula within 4x1 cm pcf defect by trainee doctor under direct supervision of chief surgeon in para II (1 alive)

104 uvvf-repair of type IIAa fistula as early closure in para I (0 alive) due to anterior trauma

105 complicated repair of mutilated type IIb fistula in para VI (4 alive) operated once elsewhere

106 urethra reconstruction of mutilated type IIb fistula in para I (0 alive) already 3x operated elsewhere
107 catheter treatment of necrotic type IIa fistula of 10-day duration in para I (0 alive)

lecture
b physiopathology and development of total 3° uv prolapse in relation to pelvis (span too wide), sacrouterine ligaments and pubocervical fascia with mini-invasive uterus-sparing fixation

15.00 selection of patients
16.00 wardround of postoperative patients
16.30 end of the working day

day 4
thursday 30.06
7.00 preparations for the day
8.00 wardround
8.30 surgery with step-by-step teaching
108 state-of-the-art lecture and demonstration of uterus-saving fixation of cervix/pcf in 3° total cervix prolapse with total intrinsic-stress incontinence grade III in para III (1 alive)
109 urethralization by longitudinal fascia repair/bilateral para-euo fixation of total post IIb postdelivery urine intrinsic-stress incontinence as last resort in para VI (1 alive) with 3rd obstetric leakage/fistula who still delivered at home after 2 days of labor
110 + 111 urethralization + pcf fixation as last resort in mutilated total post IAb intrinsic–stress incontinence grade III and rfv-“repair” in mutilated type Ia rfv in para I suffering for 7 yr and operated 4x elsewhere
112 dilatation, repair and pcf refixation of minute type Ab fistula with severe uv-stricture as second obstetric fistula in para II (0 alive) after successful circumferential repair after delivery
113 repair of residual type IIAb fistula in para XI (7 alive) after complicated repair after 1x operation elsewhere
114 bladder neck elevation by pcf fixation in total post IIAb urine intrinsic-stress incontinence in para II (0 alive) being completely ok for 1.5 yr until period of lower abdominal pain/fever (?miscarriage?)
115 repair of residual lungu fistula R after proximal pouch of extensive in operable IIAb fistula since everything fixed in para VI (3 alive) with rfv healed
116 repair of recurrent type IIAb fistula after urethralization for post IIAb total urine intrinsic_stress incontinence in para I (0 alive) bladder neck elevation in total post extensive IIAb; rfv healed

15.30 postoperative wardround
16.00 end of the working day

day 5
friday 01.07
7.00 preparations for the day
8.00 wardround
8.30 surgery with step-by-step teaching
117 + 118 state-of-the-art lecture and demonstration early closure of type IIa fistula with special emphisis on the urine continence mechanism in the female and step-by-step reconstruction of anorectum, sphincter ani with adaptation of perineal body with special emphasis on the stool continence mechanism in the female in para I (alive) with inflammation/contamination ++ after immediate suturing pp
repair of type IIa fistula as **early closure** immediate management in para I (0 alive with ar neg and flatus incontinence)

120 uvvf-repair of type IIa in para II (1 alive) already operated 1x else where

11.30 chief surgeon travelled back to katsina
15.00 arrival in babbar ruga hospital
18.00 end of the working day

day 6
**saturday 02.07**
katsina
7.00 selection of patients + preparations for the day
121 catheter treatment of large necrotic type IIa fistula with necrotic type Ia rvf in para II (1 alive) leaking for 6 days
122 catheter treatment of small type IIa fistula within 4x1 cm transverse avw trauma/pcf defect in para III (1 alive) with anterior sphincter ani trauma; leaking for 2 mth
123 catheter treatment of extensive type IIb fistula, necrotic proximal pvw and total breakdown of episiotomy L with visible stool incontinence of 12-day duration
124 catheter treatment of small scarred type IIa fistula of 21-day duration following yankan gishiri by wanzami bco not sleeping with husband in 13-yr-old para 0
125 first bladder drill for 2-4 weeks for urge incontinence ++ in 13-yr-old para 0 (already divorced by husband) who started to leak 7 yr ago following period of high fever; if not responding then for further examination/decision
126 primary suturing **minimum surgery** of severely mutilated type IIa fistula following vaginal hysterectomy bco total 3° cervix prolapse in para VIII (4 alive)
127 assessment of **extensive** type IIb fistula due to total circumferential trauma in para I (0 alive); inoperable now since everything fixed at 71-day duration; probably “operable” after 6-8 mth since good bladder capacity; (sub)total avw loss
128 complicated repair of type I tah-cs-vcv fistula as second obstetric fistula in para III (1 alive); due to severe obesity
129 distal urethra_euo reconstruction as last resort in post IIb total urine intrinsic stress incontinence in para I (0 alive); both urine/stool fistulas healed
130 closure of sigmoidostomy (elsewhere) after successful type Ib recto vaginal fistula repair in para I (0 alive) also with extensive inoperable type IIb urine fistula

8.00 wardround
8.30 surgery
17.00 wardround
17.15 selection of partients for next day + administration
19.00 end of working day
kano no operations since all the staff of kano state is due for personal screening of their employment particulars

day 7
**sunday 03.07**
katsina
7.00 preparations for the day
8.00 wardround
surgery with step-by-step teaching

131 state-of-the-art bilateral ureter catheterization and repair with transverse fascia repair of large yankan gishiri type IIAb fistula bco total 3° cervix prolapse; nb she was planned for cervix fixation but decided to go for yankan gishiri by wanzami

132 continent state-of-the-art urethralization of total post IIBb urine intrinsic-stress incontinence in para I (0 alive) leaking for 14 years; 5x operated also for rvf; with repair of dehiscent perineal body for better configuration of both urine/stool continence mechanisms

12.30 wardround
13.30 traveling of chief surgeon by road to kano
17.00 arrival in hotel

kano no operations since clinic day
12.00 wardround
12.30 screening of new patients including history, examination, height etc and instructions about personal hygiene and drinking
examination of patients coming for follow-up at different stages following their repair
17.00 end of the working day

day 8
monday 04.07
700 preparations for the day
800 wardround
8.30 surgery with step-by-step teaching

133 state-of-the-art continent urethralization/fascia/avw reconstruction for third consecutive obstetric leakage now post IIBb delivery total urine intrinsic-stress incontinence in para III (1 alive) as last resort; had successful uuvf/rvf-repair for extensive obstetric trauma during delivery I

134 step-by-step teaching of 4/5 circumferential vesicourethrostomy with transverse fascia repair/bilateral refixation onto paraurethra_euo att of type IIAb fistula in para I (0 alive) not healed by catheter treatment

135 state-of-the-art circumferential dissection and circumferential bladder fixation into “euo” as first stage in reconstruction of extensive type IIBb fistula whereby bladder neck slipped upwards and got fixed to cephalad brim of symphysis in para I (0 alive) as part of immediate management; if necessary for continent urethra/fascia reconstruction as second stage

136 repair of type IIAb fistula as first stage in para I (0 alive) operated 1x elsewhere

137 catheter treatment of total postpartum urine intrinsic-stress incontinence grade III in para I (0 alive) leaking for 17 days

138 catheter treatment of total postpartum urine intrinsic-stress incontinence grade III in para I (alive) leaking for 8 days

13.30 selection of patients
14.00 lectures
 a the complex trauma of the obstetric fistula
 b pelvis anatomy and pelvis floor anatomy
 c the pressure gradient of obstructed labor in relation to pelvis floor structures

15.00 postoperative wardround
15.30 end of the working day
Day 9
Tuesday 05.07

7.00  Preparations for the day
8.00  Wardround
8.30  Surgery with step-by-step teaching

139 State-of-the-art lecture + step-by-step demonstration of urethralization by longitudinal fascia repair of 6x2 cm median defect with bilateral retraction + bilateral fixation to para-euo atf of genuine postpartum total urine intrinsic-stress incontinence grade III in para I (alive) leaking urine for 1 yr; with urethra length of 0.4 cm

140 Minimum surgery for severely mutilated type IIa fistula in para I (0 alive) from ondo state after abdominal repair and vaginal repair elsewhere; leaking for 14 yr

141 Complicated repair of mutilated sth-cs type I fistula in para VIII (4 alive) operated 2x; leaking urine for 15 yr; for rvf-repair as 2nd stage

142 Assessment under anesthesia of inoperable extensive 1 cm 0 type IIab fistula operated 10 yr ago as last resort final with only one try possible; rvf healed

143 Repair of type I fistula in para I (0 alive)

13.00 Selection of patients
14.00 Lectures
   d Obstetric pubocervical fascia defects
   e Sphincter ani rupture; a complex trauma
   f Fistulas for beginners
15.00 Wardround
15.30 End of the working day

Day 10
Wednesday 06.07

7.00  Preparations for the day
8.00  Wardround
8.30  Surgery with step-by-step teaching

144 Demonstration of what goes wrong if the trauma is not understood well and what to do step-by-step to correct it in residual sphincter ani rupture type IIb in para II (all alive) repaired 1x; the meticulous repair of the internal sphincter cannot be overstressed

145 State-of-the-art continent urethra/fascia/avw reconstruction second stage after nicely healed circumferential bladder fixation as first stage minimum surgery of extensive type IIb fistula in para I (0 alive)

146 + 147 Catheterization R ureter and repair of large type IIa fistula with re-inforcement of sphincter ani + perineal body in para V (2 alive) operated 2x for sphincter ani rupture

148 Uvlf-repair as early closure of type IIa fistula in para I (0 alive); leaking 28 days

149 Closure of recurrent type IIb fistula in para IX (all alive) following successful closure and then urethralization; went for another surgery with this fistula as result

150 Urethralization by fasciorrhaphy and bilateral fixation of pc fascia in post extensive IIab total urine intrinsic-stress incontinence in para I (0 alive) leaking urine for 11 yr

14.00 Selection of patients
   No lectures since participants left us to collect their salary for June
14.45 Postoperative wardround
15.15 End of the working day
day 11
thursday 07.07

7.00 preparations for the day
8.00 wardround
8.30 surgery with step-by-step teaching

151 lecture and demonstration of the **complicated** repair of **minute** type IIAa fistula with **objective** total urine intrinsic stress incontinence where the dye was needed to identify the fistula after dissection/excision of scar tissue in para VI (1 alive) leaking for 5 yr

152 continent urethra/fascia/avw reconstruction as **last resort** in **second** now **extensive** type IIIB fistula in para II (0 alive) after successful closure + urethra reconstruction after delivery I

153 + 154 assessment of **inoperable mutilated** type IIIB fistula and **inoperable** type Ia fistula in para I (0 alive) leaking urine/passing stools pv for 20 yr and operated 1x in university teaching hospital; **severe stone-hard fibrosis/scarring**

155 vvf-repair as **early closure** of type I fistula in para II (0 alive) leaking for 39 days

156 gradual dilatation of severe introitus stenosis and catheter treatment of overflow incontinence due to atonic bladder in para I (0 alive)

14.00 lectures

157 uvf-repair with bilateral pcf (re)fixation of **second obstetric** type IIIB fistula after successful urethra/avw reconstruction 15 years ago in para II (0 alive)

158 repair of **third obstetric** intracervical type I in para VII (3 alive) after catheter treatment post delivery IV and cs-vcvuvf-repair post delivery VI; **nb** patient reported to hospital for booked elective cs, she spent 2 days in the hospital and then delivered vaginally without any action taken

159 urethra reconstruction of **extensive** type IIIB as **last resort final** in para I (0 alive) operated 3x; the problem: right from the beginning she presented with severe scarring/fibrosis with vagina depth of only 4 cm

11.00 lectures

11.45 postoperative wardround

12.00 end of the working day so that everybody can prepare for the mosque

day 12
friday 08.07

7.00 preparations for the day
8.00 wardround
8.30 surgery with step-by-step teaching

157 uvf-repair with bilateral pcf (re)fixation of **second obstetric** type IIIB fistula after successful urethra/avw reconstruction 15 years ago in para II (0 alive)

158 repair of **third obstetric** intracervical type I in para VII (3 alive) after catheter treatment post delivery IV and cs-vcvuvf-repair post delivery VI; **nb** patient reported to hospital for booked elective cs, she spent 2 days in the hospital and then delivered vaginally without any action taken

159 urethra reconstruction of **extensive** type IIIB as **last resort final** in para I (0 alive) operated 3x; the problem: right from the beginning she presented with severe scarring/fibrosis with vagina depth of only 4 cm

11.00 lectures

11.45 postoperative wardround

12.00 end of the working day so that everybody can prepare for the mosque

day 13
saturday 09.07

7.00 preparations for the day
8.00 wardround
surgery with step-by-step teaching
160 demonstration of longitudinal repair of 4x1.5 cm pc fascia defect with bilateral refixation onto paraurethra-euo atf + excision of mutilated awv in post IIAb total urine intrinsic-stress incontinence grade III in para I (0 alive)
161 final assessment under spinal anesthesia of inoperable type IIbb fistula after successful rvf-repair in para I (0 alive) due to severe scarring/ everything fixed
162 disobliteration of neourethra with uvvf-repair of second obstetric type IIbb fistula in para IV (0 alive)) who delivered at home after a 3-stage repair of extensive fistula post delivery III
163 repair of type Ila rvf as first stage in para I( (0 alive) with also extensive type IIbb fistula operated 1x elsewhere and leaking/passing stools pv for 16 yr
164 uvvf-repair of second obstetric type IIAb fistula in para III (0 alive) who delivered at home (“miscarriage” of sb male) after successful repair post delivery I

12.00 evaluation of the training programme by trainees and trainers
small closing ceremony
handing out certificates to participants
farewell wishes
13.00 postoperative wardround
13.30 chief surgeon travelled by road to katsina
15.00 administrative work
19.00 end of the working day

day 14
sunday 10.07
7.00 preparartions for the day
8.00 wardround
8.30 surgery
16.00 preparations for the 3rd training session in katsina starting with the arrival of the trainees today
18.30 end of working day

kees waaldijk MD PhD
chief consultant surgeon
10th of July 2011
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<th>Role</th>
<th>Name</th>
<th>Title/Position</th>
<th>Institution</th>
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<tr>
<td>Participants</td>
<td>Dr Charles Onyra</td>
<td>PMO Gen Hosp</td>
<td>Gwarzo</td>
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<td>Alh Yusuf Abdullahi Dannafada</td>
<td>PO Nurse</td>
<td>Gen Hosp</td>
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<td>Facilitators pre-, intra- and post-operative care</td>
<td>Alh Abdullahi Haruna</td>
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<td>Chief Trainer</td>
<td>Dr Kees Waaldijk</td>
<td>Chief Consultant Surgeon</td>
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obstetric fistula surgery training

third session

Babbar Ruga National Fistula Teaching Hospital
Katsina

training of 4 consultants and 8 nurses

from monday 11.07 thru sunday 24.07.11

logbook

day 0
sunday 10.07

7.00 preparations for the day + catheter treatment for fistula as immediate management

7.30 165 catheter treatment of necrotic type IIa fistula of 21-day duration in para VI (2 alive)

166 catheter treatment of 3x1 cm necrotic type IIb fistula of 14-day duration in para I (0 alive) with total circumferential trauma and also type Ia rectovaginal fistula with total episiotomy L breakdown

8.00 wardround

8.30 surgery

167 state-of-the-art circumferential fixation of bladder into euo with bilateral pcf refixation as minimum surgery first stage in extensive type IIb fistula of 39-day duration in para I (0 alive) with total circumferential trauma; if necessary for continent urethra as second stage

168 primary suturing as last resort final of mutilated extensive 4 cm 0 type IIb fistula in para IV (0 alive) leaking for 30 yr which started post delivery I and operated at least 10x by 7 different surgeons

169 complicated uvvf/tah-cs-vvf repair of strange multiple mutilated type IIa fistulas with urge incontinence in para II (0 alive) operated 1x and also type Ic stool fistula fixed onto midline sacrum

170 circumferential repair with fixation of pc fascia/bladder peritoneum as first stage minimum of extensive type IIb fistula in para I (0 alive) not healed by immediate catheter treatment 1348 at 15-day duration

16.00 selection of patients for next day

171 catheter treatment of necrotic type IIa fistula with atonic bladder in 43-yr-old para XI (7 alive) at 17-day duration following sb male by cs

18.00 postoperative wardround

18.30 end of the working day

supposed arrival of participants but none turned up
day 1
monday 11.07
7.00 preparation of facilities
8.00 wardround
so far, only 1 trainee doctors and 3 trainee nurses turned up
8.30 **172 step-by-step** demonstration of circumferential dissection, advance-ment, circumferential **end-to-end** vesicourethrostomy and bilateral pcf refixation as **continent procedure** in large type IIAb fistula in para II (0 alive)
**173 second stage minimum surgery** distal urethra reconstruction after successful **first-stage** circumferential repair of extensive type IIb fistula in para I (0 alive) with extensive total circumferential trauma and ex tensive vulva leasions/labia loss; **nicely** healed after sitzbaths with a detergent and catheter as part of **active immediate management**; and everything done within 4 mth post partum
**174 uvvf-repair of type IIa fistula in para II (0 alive) whereby bladder/urethra closed to cervix; ureters not identified since patient not drinking**
**175 excision of scar/mutilation tissue + uvvf-repair of total post IIAb urine intrinsic_stress incontinence grade III in para I (0 alive) after 2x repair**
15.30 postoperative wardround
16.00 selection of patients
one more doctor turned up
17.00 administration
18.00 end of the working day
day 2
tuesday 12.07
7.00 preparations for the day
8.00 wardround
8.30 surgery with step-by-step teaching
**176 repositioning/draining of real ureter fistula L into bladder and primary suturing of mutilated extensive type IIb fistula with small bladder capacity as first stage in para VI (2 alive) operated 1x; second stage has to be discussed with patient**
**177 catheter treatment of long-standing atonic bladder with in para IX (4 alive) after cs of live female; dye test: no leakage and no clear urine in vagina but overflow incontinence**
**178 transfistula stone removal with avw approximation as final by all means for 3rd stone after 3 operations of second obstetric type IIb fistula now with new fistula in para II (0 alive) and 2 operations of first fistula**
**179 urethra-euo rhaphy + bilateral para-euo fixation of total post extensive IIb fistula after successful urethra/avw reconstruction and sphincter ani reconstruction in para I (0 alive)**
**180 closure of minute impalement type I fistula with 2° cervix prolapse in 67-yr-old para XII (8 alive) who fell onto a piece of wood**
15.30 selection of patients
16.30 wardround of postoperative patients
17.00 administration
19.00 end of the working day
day 3
wednesday 13.07
7.00 preparations for the day
8.00 wardround
8.30 surgery: with step-by-step teaching
181+182 bilateral ureter catheterization/complicated repair of extensive type IIAb/IIBb fistula with whole bladder/ureter prolapse and state-of-the-art reconstruction of anorectum, sphincter ani and perineal body of type IIb sphincter ani rupture in same one session as clinical lecture in para V (4 alive)
183 uvvf-repair of small midline type IIa fistula as early closure by trainee doctor under personal supervision by chief surgeon in para I (0 alive); leaking for 59 days which would have healed probably by immediate catheter treatment
184 step-by-step demonstration of urethralization by longitudinal repair rhaphy of 6x2 cm median fascia defect as cause of genuine postpartum total intrinsic-stress incontinence grade III in para I (alive) with wide pubic arch, cystocele and cervix in anatomic position
185 ureters, 4/5 circumferential vesicourethroprostomy + bilateral pcf refixation of extensive type IIAb fistula at 26-day duration in para I (0 alive); awv left open since everything fixed/inflamed
186 circumferential urethrovvesicostomy with pcf refixation of type IIAb fistula in para VI (3 alive)
187 bilateral pc fascia fixation as last resort for total post IIAb urine intrinsic_stress incontinence ion para II (0 alive) after second obstetric fistula repair
16.00 classroom lectures
a the complex trauma of the obstetric fistula in its broadest sense
b pelvis and pelvis floor anatomy
c the obstetric trauma in relation to pelvis floor structures
17.00 wardround of postoperative patients
logbook discussion with tranee doctors about his own procedure
17.30 selection of patients
18.00 administration
19.00 end of the working day

day 4
thursday 14.07
7.00 preparations for the day
8.00 recap of the previous day by
8.30 wardround
9.00 surgery with step-by-step teaching
188 clinical lecture and state-of-the-art reconstruction of the internal sphincter (anorectum), external sphincter and perineal body of sphincter ani rupture with 2.5 cm anorectum trauma in para I (0 alive) operated 1x elsewhere
189 clinical lecture about immediate management by catheter and/or early closure with demonstration of early uvvf-repair of type IIa fistula at 41 days not healed by catheter treatment at 5-day duration in para X (3 alive); same patient as demonstrated 4 weeks ago about immediate catheterization
190 urethralization and para-euo fascia fixation in congenital genuine intrinsic-stress incontinence grade III in 15-yr-old para 0; no stool/flatus incontinence and no s/o spina bifida; poor-quality pc fascia tissue and wide open urethra-euo
uvvf-“repair” of mutilated “inoperable” type IIAb fistula in para I (0 alive) and type Ib stool fistula after at least 5 operations with confusing findings and confusing history; in university hospital colostomy thru cs-scar, then implantation of one ureter into sigmoid with still rectovaginal fistula and then closure of colostomy with still rvf

15.30 classroom lectures
d the complex trauma of sphincter ani rupture as type IIb stool fistula and its step-by-step reconstruction

16.00 postoperative wardround
16.30 selection of patients
17.00 administration
18.00 end of the working day

**day 5**
**friday 15.07**
7.00 preparations for the day
8.00 wardround
8.30 surgery with step-by-step teaching
192 clinical lecture and uvvf-repair as early closure with fascia repair of small type IIa fistula with b characteristics within large obstetric circumferential trauma in para I (0 alive); leaking 45 days
193 disbliteration of neourethra + uvvf-repair as last resort in second obstetric type IIb fistula in para II (0 alive) after in total 6 operations
194 uvvf-repair + transverse fascia repair/fixation as early closure of type IIa in para VIII (3 alive)
195 circumferential dissection and circumferential repair with fascia refixation as early closure of type IIAb fistula in para I (0 alive) at 31 days pp
12.30 break and preparations for the mosque
15.00 lectures postponed since no projector available
15.30 postoperative wardround
16.00 selection of patients
17.00 administration
18.00 end of the working day

**day 6**
**saturday 16.07**
Katsina
7.00 preparations for the day
8.00 recap of days 4 and 5
8.30 wardround
9.00 surgery with step-by-step teaching
196 excision of all mutilation/scar tissue, euo-rhaphy and bilateral pc fascia fixation in mutilated total post IIAb intrinsic-stress incontinence grade III after dye test to exclude minute fistula in para I (0 alive) operated 3x elsewhere and leaking 5 yr
197 debridement + complicated early closure of strange type IIa fistula within circular vagina trauma with 1 cm 0 necrotic proximal pvw/cervix trauma in para I (0 alive) at 42 days
198 uvvf-repair as early closure of type IIa fistula with no sign of healing by catheter treatment by trainee doctor under personal supervision of chief surgeon in para VI (2 alive) at 34 days
**199 clinical lecture** and **step-by-step** demonstration of **urethralization** by longitudinal repair of 8x2.5 cm median pcf defect with **wide open** urethra_euo in postpartum **genuine intrinsic stress incontinence grade II in 18-yr-old para III (1 alive)**

**200** repair of type I cs fistula in para II (0 alive) in whom operation had to be ended yesterday since op table broke down, now repaired

**201** urethralization by fasciorrhaphy, euo-rhaphy and bilateral pcf fixation for **fifth obstetric leakage** in total post **extensive IIBb intrinsic stress incontinence in PXII (2 alive)**

**202** cystostomy thru fistula and removal of impacted 8x6x5 cm bladder stone in **third obstetric** type **IIAa** fistula in para XI (0 alive)

15.30 classroom lectures

e genuine urine intrinsic-stress incontinence and its (surgical) management with evidence-based results in 910 consecutive patients during the 25-yr period 1984-2009

f prevention of postrepair incontinence in type **IIAa** fistulas with evidence-based results in 845 consecutive patients over a 4-yr period 2004-2009

16.30 postoperative wardround

17.15 selection of patients for next day + administration

18.30 end of the working day

**day 7**

**sunday 17.07**

7.00 preparations for the day

8.00 recap of day 6

8.30 wardround

9.00 filling out questionnaire for self-evaluation

9.30 surgery with step-by-step teaching

**203** supporting urethra by reinforcement of fibrofatty tissue (attached to rotation flap) over it and bilateral para-euo fixation as **last resort 10th operation** for post **extensive IIBb** urine intrinsic_stress incontinence for 3 obstetric fistulas in para III (0 alive) who was successfully operated for her first fistula on **22.02.1992** after 1x operation elsewhere

**204** assessment of **ba hanya** under spinal as **final procedure** following extensive obstetric trauma and successful 2x vvf- and 3x rvf-repair in para I (0 alive); not leaking at all but stool/flatus incontinence since anterior anus pulled inside over 2 cm

**205 + 206** dilatation of uv-stricture + bilateral “pcf”/avw fixation of over-flow incontinence after multiple repairs for **extensive** type **IIBb** fistula and sphinter ani//dehiscent perineal body repair for flatus incontinence in para I (0 alive) after 8 operations including colostomy elsewhere and closure of colostomy still married/living with the problem for 22 yr

**207** complicated repair of probably **second obstetric type IIAb fistula R lungu in para IV (0 alive) operated 12 yr ago for fistula post delivery** I

**208** repair and bilateral pcf fixation of residual minute lungu fistula with total intrinsic-stress incontinence in para II (0 alive) operated 4x for 3 different fistulas

**209** repair of **new** small type **Ia** rectovaginal fistula following “miscarriage” in para XI (4 alive) following successful vvf/rvf-repair 4 yr ago

15.00 wardround

15.30 selection of patients

16.00 administration

18.30 end of the working day
day 8
monday 18.07
700 preparations for the day
8.00 recap of day 7
8.30 wardround
9.00 surgery with step-by-step teaching
210 transverse fascia repair/bilateral fixation with in the process closure of extensive 0.3 cm second obstetric type IIb fistula with 2° cervix prolapse in para IV (1 alive) after successful repair post delivery I
211 complicated repair + fixation + avw correction of residual scarred minute type IIb fistula in para VIII (3 alive) after 2 repairs; right from the beginning everything fixed/poor tissue quality
212 + 213 difficult ps-like repair of type Ia rectovaginal fistula fixed onto i spine R and assessment of extensive inoperable type IIb fistula due to extensive circumferential obstetric trauma in para I (0 alive) opera ted 1x abdominally (?ureterosigmoidostomy? watery stools per anum)
214 continent urethra/avw reconstruction as second stage after nicely healed circumferential bladder fixation as first stage of extensive type IIb fistula as second obstetric fistula in para II (0 alive); what took her 5 yr to wait for the second stage
215 suprapubic cystostomy and stone removal; stone formation due to non-drinking in post IIAb repair stress incontinence
216 urethralization, euo-rhaphy and bilateral fixation for post IIb urine intrinsic-stress incontinence grade III in para II (0 alive) who developed 2 consecutive obstetric fistulas
217 urethralization, euo-rhaphy and bilateral fixation for post IIa post delivery total urine intrinsic-stress incontinence in para IV (0 alive)

16.15 no lectures since operation programme finished late
16.15 postoperative wardround
17.00 selection of patients
218 catheter insertion as immediate management of necrotic 2 cm 0 type IIa fistula within 4 cm 0 avw trauma in 26-yr-old para I (0 alive) at 6-day duration
18.30 end of the working day

day 9
tuesday 19.07
7.00 preparations for the day
8.00 recap of day 8
8.30 wardround
9.00 surgery with step-by-step teaching
219 final assessment + bilateral fixation of paraneourehra tissue onto para-euo symphysis as last resort final for total post extensive IIbAb incontinence in para I (0 alive) who had her first repair 30.12.86; both vvf/rvf-repairs nicely healed but neoourethra not functioning
220 euo-rhaphy, pcf fixation at R and bilateral para-euo fixation as last resort final for post IIb total urine incontinence as 10th procedure in para V (0 alive) who had successful vvf/rvf-repairs for 4 consecutive obstetric fistulas starting 7.8.87
221 urethra rhaphy, para-euo fixation and repair of dehiscent perineal body as last resort for total post IIbA urine intrinsic-stress incontinence in para III (2 alive) who had 2 consecutive obstetric fistulas
222 final assessment of inoperable IIBb fistula after 4 repairs in para III (0 alive) since everything fixed
223 bilateral pcf fixation to paraurethra aff for new obstetric leakage as total post-delivery post extensive IIAa urine intrinsic_stress incontinence in para V (0 alive) with extensive obstetric vvf/rvf post delivery
224 bilateral pcf fixation for total post extensive IIBa urine intrinsic_stress incontinence as 10th operation and second obstetric leakage in para III (0 alive)
225 repair of uuvf, pcf fixation + euo-rhaphy for post yankan gishiri IIBa stress incontinence grade II in para 0
226 repair of second obstetric type IIa fistula following “miscarriage” 10 yr after successful repair of first obstetric fistula in para II (0 alive)

15.30 classroom lectures

16.30 g history/achievement of vvf in Nigeria by dr idris halliru

16.30 h fistulas for beginners, characteristics and setting standards

16.30 clinical lecture + practical demonstration of immediate management by catheter (and/or early closure) in 3 patients

16.30 227 catheter gtreatment for total urine intrinsic-stress incontinence as healing phase of atonic bladder in para VI (4 alive) at 35 days

16.30 228 catheter treatment for 4 cm 0 necrotic type IIa fistula in para XV (5 alive) at 5 days; however, slim prospect of healing

17.00 wardround

17.30 selection of patients

18.15 administration

19.00 end of the working day

day 10

Wednesday 20.07

7.00 preparations for the day

8.00 recap of day 9

8.30 wardround

9.00 surgery with step-by-step teaching

229 clinical lecture and demonstration of cervix/pcf fixation as uterus-saving mini-invasive procedure for massive total 3° cervix prolapse in 15-yr-old para V (3 alive)

230 complicated continent urethra reconstruction of lacerated type IIBa fistula following road traffic accident after successful repair of 2 consecutive obstetric fistulas in para III (0 alive)

231 assessment of both inoperable type IIAb fistula and type Ia recto vaginal fistula in para I (0 alive) with extensive obstetric trauma living with her condition for 28 yr

232 pcf/avw/cervix fixation at L with repair of deficient perineal body for total post second obstetric IIAb/la urine intrinsic_stress incontinence in para IV (0 alive) with empty pelvis due to extensive obstetric trauma

233 uuvf-repair of small retracted type IIAa as early closure at 58 days in para XI (6 alive); nb fistula would have healed by immediate catheter classroom lectures

15.30 i total 3° cervix prolapse, its pathophysiology and its surgical treatment by mini-invasive technique saving the uterus

15.30 j classification of vvf according to qualitative and quantitative tissue loss of the continence mechanism with consequences for operation principles and results as to closure and as to continence

15.30 k classification pf rvf according to involvement of continence mechanism with consequences for operation principles
16.30  postoperative wardround
17.00  selection of patients
234  catheter treatment continued in 4 cm 0 necrotic type IIAb fistula at 16 days in para I (0 alive) who delivered sb male by cs; catheter left in since draining very well though prospect of healing slight
17.45  administration
18.30  end of the working day

day 11
thursday 21.07
7.00  preparations for the day
8.00  recap of day 10
8.30  wardround
9.00  surgery with step-by-step teaching
235  clinical lecture and demonstration of cervix (with adherent pcf) fixation of 3° total cervix prolapse with decubitus ulcer/without stress incontinence in para X (2 alive) who developed this condition 30 yr ago post delivery III; mini-invasive technique
236 + 237  excision of all mutilation/scar tissue, repair and pcf fixation in iatrogenic type IIAA fistula with reinforcement pf sphincter ani + perineal body repair of type IIb fistula in one patient para II (0 alive) with severe surgical mutilation
238  final assessment of inoperable post IIAb incontinence since everything fixed in para I (0 alive) leaking for 28 yr
239  paraurethra pcf/aww fixation, urethra rhaphy and para-euo fixation of total post IIBB intrinsic_stress incontinence as last resort with only 50% success chance in para I (0 alive) after multiple vvf/rvf-repairs due to extensive obstetric trauma
15.30  classroom lectures
I pre-, intra- and post-operative care by dr said ahmad with in-depth q&a
17.00  postoperative wardround
no selection of patients since all have been attended to
17.30  administration
18.30  end of the working day

day 12
friday 22.07
7.00  preparations for the day
8.00  recap of day 11
8.30  wardround
9.00  surgery with step-by-step teaching
240  additional fixation of cervix at R as second stage according to master plan since 2° cervix prolapse at R following successful fixation at L as first stage for total cervix prolapse in 16-yr-old para I (alive) as uterus-saving mini-invasive procedure
241  additional fixation of R cervix as second stage after successful fixation at L as first stage of total cervix prolapse in para VI (4 alive) who had 3 live children with total prolapse for 12 yr

nb all the patients in the hospital were attended to and there are no more patients left on the waiting list
11.30  handing out certificates to all participants
votes of thanks from both trainers and trainees
official closure of the training workshop
postoperative wardround
end of the working day so that everybody can prepare for the mosque
travelling of the surgical team by road from babbar ruga to kofan gayan
hospital in zaria since they have over 10 patients on the waiting list and
we have to continue with our work
safe arrival of the team in the hotel

saturday 23.07
preparations for the day
surgery
242 circumferential dissection, advancement, circumferential end-to-end ve sicourethrostomy + bilateral pcf refixation as early closure of
large type IIAb fistula in para I (0 alive) at 52 days
243 complicated repair of ragged iatrogenic longitudinal type IIa
fistula in para X (4 alive) who deliverd sb female vaginally and then had
lapa rotomy/hysterectomy same day for reasons not given
244 repair of minute < 0.1 (1.5 after dissection) cm type I sth-cs-vctx
fistula in para XI (7 alive) who was leaking little with spontaneous
miction
245 transverse pc fascia repair/bilateral refixation with in the process
closure of small type IIa fistula with b characteristics in para VII (2
alive); who cares about obstetric care
postoperative wardround
end of the working day

sunday 24.07
wardround
surgery
246 uvvf-repair + transverse pcf fixation as early closure of type IIa
fistula in para I (0 alive) leaking for 60 days
247 catheter treatment of 4 cm 0 necrotic type II in para I (0 alive) lea
king 10 days
248 catheter treatment of type IIa fistula in para II (1 alive) leaking for
40 days (still chance of healing) who cannot stand/walk without support
not a single patient left on the waiting list
postoperative wardround
traveling of chief surgeon to kano as normal rhythm
arrival in hotel and end of the working day

kees waaldijk MD PhD
chief consultant surgeon

22th of July 2011
participants
dr bawa dogara bure
mrs alang b larau
dr ahmed saheed bolaji
alh aliyu husaini maibara
hajia aisha namadi
dr sani dandela
hajia murja salihu sagir
hajia anas abdulkadir
dr hayatu tanimu
alh bello gambo
mrs osuagwu eunice chinyere
hajiya aishatu ahmed
cno

trainers
dr said ahmad
consultant obs&gyn
vff center
jahun
dr idris a halliru
moh
katsina

facilitators pre-, intra- and post-operative care
dr abdulmajid mudasiru
alh abdullahi haruna
alh kabir k lawal
alh gambo lawal
hajiya adetutu ajagun
hajiya amina mamman

chief trainer
dr kees waaldijk
chief consultant surgeon
babbar ruga hospital
logbook

day 1
monday 12.09
07.00 preparation of facilities
08.00 introduction of participants and outlining the course
09.00 surgery
  249 clinical lecture and catheter treatment of overflow/intrinsic/stress incontinence grade III in para III (all alive) leaking for 12 days
  250 catheter treatment of total overflow/intrinsic/stress incontinence grade III in para I (0 alive) leaking for 15 days
  251 catheter treatment for total intrinsic/stress incontinence grade III in para I (0 alive) leaking for 8 days
  follow-up consultation in 9 patients
10.00 introduction of participants, explaining the training to all participants, explaining the logistics/financial implications by representative of FMOH
10.30 surgery with step-by-step teaching
  252 urethralization + bladder closure for post IIa intrinsic/stress incontinence grade III in para I (0 alive): fistula had healed by immediate catheter treatment for 4 wk
  253 urethralization for genuine postpartum intrinsic/stress incontinence grade II-III in para V (3 alive) not responding to bladder drill
  254 uvvf-repair + transverse fascia repair as early closure for medium-size type IIa fistula in para V (3 alive) leaking 42 days
  255 uvvf-repair + transverse fascia repair as early closure for small type IIa fistula in para XIV (9 alive) leaking 30 days
14.00 selection of patients for the training workshop
15.00 wardround of postoperative patients
15.30 end of the working day
17-18.00 administration and documentation

day 2
tuesday 13.09
07.00 preparations for the day
08.00 wardround
08.30 surgery with step-by-step teaching
256 + 257 clinical lecture and 4/5 circumferential repair with bilateral fascia refixation of large type IIBb fistula and double layer repair of mutilated type Ila rvf in para I (0 alive); unsuccessful rvf-repair 1x
258 highly complicated repair of residual small type IIa fistula at L in para IX (5 alive); median fistula healed by catheter, still pcf defect
259 repair of multiple 3 minute lungu-lungu type IIAb fistulas in para II (0 alive) leaking for 25 yr and operated once elsewhere
260 transverse repair of medium-size type IIAb fistula in para XII (5 alive) leaking for 12 yr
261 transverse repair of small type IIa fistula in para I (0 alive)
14.00 selection of patients and preparing for pessary insertion in incurable long-standing postrepair intrinsic incontinence
15.30 wardround of postoperative patients
16.15 end of the working day

day 3
wednesday 14.09
07.00 preparations for the day
08.00 a start was made with urethra pessary insertion for incurable long-standing postrepair total urine intrinsic incontinence
08.30 wardround
09.00 surgery: with step-by-step teaching
263 clinical lecture and demonstration of bilateral pc<fascia fixation onto paraurethra_euo atf in long-standing total post IIAb urine intrinsic stress incontinence grade III in para V (1 alive) leaking urine for 17 yr
264 catheterization L ureter and complicated urethra/avw reconstruction of mutilated type IIBb fistula in para III (1 alive) leaking urine for 15 yr, still living with husband and operated 3x elsewhere; water-tight closure could not be achieved due to severe fibrosis
265 urethra/avw reconstruction in mutilated type IIb fistula following yankan gishiri by doctor bco ba hanya and then operated 4x
266 transverse repair of small type IIa fistula in para IV (1 alive) with moderate vagina stenosis; operated 1x
267 bilateral pc fascia fixation onto paraurethra_euo arcuis tendineus fasciae for total post IIAb postdelivery urine intrinsic-stress incontinence grade III in para II (0 alive)
268 transverse early closure of type IIa fistula in para IX (5 alive) leaking 71 days
15.00 selection of patients
16.00 wardround of postoperative patients
16.30 end of the working day

day 4
thursday 15.09
07.00 preparations for the day
08.00 wardround
08.30 surgery with step-by-step teaching
269 catheter treatment of small type I fistula and total intrinsic incontinence grade III due to totally inflamed anterior vagina wall with traumatized euo in para I (0 alive) leaking for 25 days
+ clinical lecture about immediate management by catheter
270 state-of-the-art urethralization by longitudinal repair of median 5x2 cm pc fascia defect for postpartum genuine intrinsic_stress incontinence grade III in para I (0 alive) not responding to bladder drill; with that specific distal urethra_euro trauma + clinical lecture about (genuine) intrinsic_stress incontinence

271 transverse repair + pcf refixation of mutilated severely scarred type IIAb fistula with total circumferential trauma in para I (0 alive) operated 1x

272 complicated repair of extensive type IIAb fistula in para V (0 alive) who had been operated successfully for two previous obstetric fistulas

273 transverse repair of type IIAb fistula in para I (0 alive who had been operated 1x elsewhere

274 repair of type IIAb fistula as early closure in para I (0 alive) leaking 44 days

275 bilateral ureter catheterization + transverse repair of large type IIAb fistula as early closure in para I (0 alive) leaking 37 days

15.30 postoperative wardround

16.00 end of the working day

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day 5

friday 16.09

07.00 preparations for the day

08.00 wardround

08.30 surgery with step-by-step teaching

276 transverse repair of mutilated lungu-lungu type IIAb tah-cs fistulas at fixed vault in para II (0 alive) leaking 11 yr and operated 4x elsewhere

277 highly complicated repair of intracervical type I cs-fistula with fixed cervix as early closure in para III (1 alive) leaking 38 days

11.00 postoperative wardround

11.30 chief surgeon travelled to zaria since kano state on strike and no operations on saturday and sunday

14.00 arrival in hotel; end of working day

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day 6

saturday 17.09

zaria

08.00 selection of patients + preparations for the day

08.30 surgery

278 catheter treatment for overflow incontinence due to atonic bladder in para I (alive) leaking urine for 3 days

279 transverse closure of type I sth-cs vesicocervicouterovaginal fistula in para X (8 alive) with total anterior uterus wall loss so that posterior uterus becomes posterior bladder

280 excision of mutation-scar tissue + urethralization + euro-rhaphy for total post IIBa repair total intrinsic_stress incontinence grade III in para VII (2 alive)

281 lungu repair for total post IIAb intrinsic-stress incontinence grade III with atomic bladder component in para I (0 alive)

282 step-by-step anorectum closure + sphincter ani reconstruction + perineal body repair for sphincter ani rupture in para X (9 alive)

+ clinical lecture about sphincter ani rupture, mechanism of action
**283 step-by-step** anorectum closure + sphincter ani/perineal body reconstruction as **early repair** in para I (alive) operated 1x with stool flatus incontinence for 12 days

- **15.00** wardround
- **15.30** travel by car to katsina
- **18.30** arrival in hospital
- **19.00** selection of patients for next day + administration

Kano: no operations since all the staff of kano state is due for personal screening of their employment particulars

**Day 7**
**Sunday 18.09**
Katsina
- **07.00** preparations for the day only to find out strike
- **08.00** administration + documentation
- **13.30** traveling of chief surgeon by road to kano
- **17.00** arrival in hotel end of “working” day

Kano: no operations since clinic day
- **12.00** wardround

**Day 8**
**Monday 19.09**
- **0700** preparations for the day
- **0800** wardround
- **08.30** surgery with step-by-step teaching

**284 + 285** transverse closure and pc fascia fixation of type IIa fistula within larger avw cervix defect and ps-like pvw/cervix adapatation of type Ia stool fistula in para VIII (5 alive) operated 1x; poor-quality tissue and everything fixed

**286** clinical lecture and step-by-step demonstration of circumferential end-to-end vesicourethrostomy in large type IIAb/Bb fistula in para X (0 alive) who got her fistula at delivery I leaking for 30 yr and never been operated; healing 90% and continence 85%

+ clinical lecture about circumferential fistulas and their repair

**288** uuvf-repair of type IIAb fistula as **early closure** in para VIII (3 alive) leaking 36 days **134 step-by-step** teaching of 4/5 circumferential vesicourethrostomy with transverse fascia repair/bilateral refixation onto paraurethra_euo atf of type IIAb fistula in para I (0 alive) not healed by catheter treatment

**288** transverse **early** repair of type IIAb fistula with pc fascia repair in para 8 (3 alive) leaking 36 days

**289** assessment of ureter fistula L following cs in para X (8 alive); since ureter cannot be catheterized patient referred to our urologist in zaria for abdominal implantation

**290** assessment of **inoperable** type IIAb fistula in paral (0 alive) with operable type Ib rvf; operation postponed since heavy stool contamination

**291** bladder drill for total utine intrinsic stress incontinence as physiologic healing stage of postpartum atomic bladder in parall (all alive) leaking urine for 38 days

+ clinical lecture about postpartum atomic bladder and its treatment

- **14.30** selection of patients
15.00 postoperative wardround
15.30 end of the working day

day 9
tuesday 20.09
07.00 preparations for the day
08.00 wardround
08.30 surgery with step-by-step teaching
  292 urethralization by longitudinal repair of median fascia defect of total post IIb 5x delivery intrinsic incontinence in para VI (3 alive) leaking for 20 yr; nb after repair 2x delivery in hospital (sb infants) and 3x delivery at home (live infants); pat living with husband and keeps very good personal hygiene
  293 under tension ps-like uvvf-“repair” of mutilated type IIAb fistula in para III (0 alive)
  294 transverse repair with bilateral fascia fixation of minute residual type IIAb/Bb fistula in para II (0 alive) operated 1x
  295 transverse repair of type IIa fistula in para II (1 alive) operated 1x
  296 transverse repair of type I tah-cs fistula as early closure in para III (2 alive) leaking 52 days
14.30 selection of patients
15.00 wardround
15.30 end of the working day

day 10
wednesday 21.09
07.00 preparations for the day
08.00 wardround
08.30 surgery with step-by-step teaching
  one of the operation lights (already not optimal) broke down so we could only operate on one table
  297 wide opening of closed distal rectum loop in type Ic rvf with end-standing opening of proximal loop into vagina in parav VII (4 alive) operated 8x for vvf/rvf; vvf healed with slight incontinence which does not bother patient
  298 bilateral pc fascia fixation obnto paraurethra-euo atf for post IIAb total intrinsic stress incontinence grade III in para X (7 alive)
14.00 selection of patients
14.45 no lectures since participants left us to collect their salary for june
15.15 postoperative wardround
15.30 end of the working day

day 11
thursday 22.09
7.00 preparations for the day
8.00 wardround
8.30 surgery with step-by-step teaching
  299 bilateral pc fascia fixation onto paraurethra_euo atf for post IIAb total intrinsic stress incontinence in para I (0 alive)
  300 assessment of “inoperable” extensive type IIb fistula in para I (0 alive); extensive obstetric trauma whereby all tissues fixed
  301 assessment of inoperable type IIb fistula in para I (0 alive) with severe vagina stenosis/shortening by stone-hard fibrosis/scarring
15.00 postoperative wardround
15.30 end of the working day
day 12
friday 23.09
07.00 preparations for the day
08.00 wardround
08.30 surgery with step-by-step teaching

302 bilateral pc fascia fixation as last resort final for post IIAb total intrinsic stress incontinence III in para VII (0 alive) as third obstetric leakage viz post delivery II, III and VII and operated 5x

303 bilateral pc fascia fixation for post IIAb total intrinsic stress incontinence grade III in para I (0 alive) operated 2x

11.00 evaluation of the training programme by trainees and trainers
small closing ceremony
handing out of the certificates by dr momah, director department of family health, federal ministry of health, abuja
farewell wishes

11.45 postoperative wardround

12.00 end of the working day so that everybody can prepare for the mosque

sincerely yours,

kees waaldijk MD PhD
25th of september 2011
chief consultant surgeon
**participants**

<table>
<thead>
<tr>
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<td>dr halima bello</td>
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**trainers**

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<tbody>
<tr>
<td>dr idris suleiman abubakar</td>
<td>consultant obs&amp;gyn</td>
<td>akth</td>
<td>kano</td>
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<tr>
<td>dr amir iman yola</td>
<td>pmo</td>
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**facilitators pre-, intra- and post-operative care**

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<td>hajiya maio ahmed</td>
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<td>hajiya zainab mohammed</td>
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<td>hajiya usaina suleiman</td>
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</tbody>
</table>

**chief trainer**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Hospital</th>
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</tr>
</thead>
<tbody>
<tr>
<td>dr kees waaldijk</td>
<td>chief consultant surgeon</td>
<td>babbar</td>
<td>kano</td>
</tr>
</tbody>
</table>
obstetric fistula surgery training

Babbar Ruga National Fistula Teaching Hospital
Katsina

fifth and last session

training of 4 consultants/doctors and 6 nurses

from monday 17.10 thru friday 28.10

logbook

day 0
sunday 16.10
07.00 to 18.00 6 operations + preparation of facilities

day 1
monday 17.10
07.00 preparation of hospital
08.00 arrival of first tranees
10.00 small welcome "ceremony" with introduction of participants, outlining of training objectives and tour of the center
12.00 surgery with step-by-step teaching
304 + 305 bilateral ureter catheterization with transverse repair of type IIAb fistula and state-of-the-art anorectum closure, sphincter ani reconstruction and perineal body repair of type Iib fistula in para IV (1 alive) + clinical lecture about principles of obstetric fistula repair
+ clinical lecture about stool continence mechanism and mechanism of action and reconstructive principles of sphincter ani rupture repair
306 suturing bladder onto symphysis over lungu-lungu type IIAb fistulas in para I (0 alive) leaking 5 yr and operated 1x
307 closure + bilateral pc fascia refixation of minute residual type fistula as good result of primary suturing of mutilated IIAb fistula in para I (0 alive) operated 3x
308 transverse closure of minute type I cs-fistula in para I (0 alive) leaking 1 yr
309 transverse closure of type I fistula against R anterior cervix in para VII (6 alive)
17.00 postoperative wardround
17.30 selection of patients for the training workshop + documentation
18.30 end of working day

day 2
tuesday 18.10
07.00 preparation of the hospital
08.00 handing out cd with books, global competency-based training manual and questionnaire for self-evaluation to all participants
08.30 wardround
09.00 surgery with step-by-step teaching

310 transverse pc fascia repair/bilateral refixation with transverse closure of small lungu type IIAb fistula in para I (0 alive) leaking 2 yr and operated 1x
+ clinical lecture about + demonstration of urine continence mechanism and importance of pubocervical fascia + pelvis floor anatomy
311 urethralization by longitudinal fascia repair/bilateral fixation for total post IIAb delivery urine intrinsic_stress incontinence grade III in para VII (5 alive)
312 catheterization of L ureter + early 4/5 circumferential closure + bilateral pcf refixation of type IIAb fistula as 3rd obstetric fistula in para VII (2 alive) leaking 74 days
313 catheterization R ureter + early transverse repair of type IIAb fistula with bladder base prolapse in para I (0 alive) leaking 68 days
314 early closure of small type I cs-fistula in para I (0 alive) leaking for 75 days
315 early closure of small type IIAb fistula slightly at R in para II (1 alive) leaking 46 days
316 early closure type I cs-fistula in para X (7 alive)
317 complicated longitudinal closure of intracervical type I cs fistula in para X (4 alive)

17.30 wardround of postoperative patients
18.00 selection of patients, administration and documentation
19.00 end of the working day

day 3
wednesday 19.10
07.00 preparations for the day
08.00 recap of the previous day
08.30 wardround
09.00 surgery: with step-by-step teaching

318 + 319 circumferential repair with longitudinal fascia repair of type IIAb fistula and anorectum/sphincter ani/perineal body reconstruction of type IIb fistula in para I (0 alive) with severe iatrogenic trauma by 2 operations elsewhere
320 complicated 4/5 circumferential repair with bilateral pcf refixation of type IIAb fistula fixed to cephalad symphysis in para VI (2 alive)
321 bilateral fixation of pcf onto paraurethra_euo atf for post IIAb total incontinence grade III in para 0; yankan gishiri for ba hanya
322 catheter treatment for postpartum total urine intrinsic incontinence grade III in para I (0 alive) leaking 18 days
323 catheter treatment for long-standing postpartum atonic bladder in para I (alive) to be followed by bladder drill and then re-evaluation
324 repair of type I cs fistula as second stage after successful closure of type IIAb fistula as first stage in para VIII (4 alive)
325 early circumferential repair + pcf fixation of type IIAb fistula in para I (0 alive) leaking 67 days
326 repair of residual type I tah-cs fistula in para II (all alive) with cervix remnants fixed midline

15.00 two classroom lecture
a sphincter ani rupture; a complex trauma
b fistulas for beginners
day 4

thursday 20.10

07.00 preparations for the day
08.00 recap of the previous day
08.30 wardround
09.00 surgery with step-by-step teaching

327 + 328 state-of-the-art urethralization by longitudinal fascia repair + transverse fixation for total genuine (IIAb) intrinsic_stress incontinence and transverse closure of type Ia stool fistula in para I (0 alive) + clinical lecture about mechanism of incontinence and importance of pubocervical fascia in stabilizing/securing urethra_euo in its anatomic position

329 step-by-step demonstration of excision of scar tissue and para urethra_euo fixation of fascia for post II Ba total intrinsic incontinence in para III (all alive); yankan gishiri for 3° cervix prolapse

330 transverse fascia repair/bilateral refixation + uvvf-repair of second obstetric type IIAb fistula in para VII (1 alive) who had successful circumferential repair post delivery I fifteen years ago

331 bilateral ureter catheterization + circumferential repair first stage for "inoperable" type II Bb fistula in para VIII (3 alive) with poor tissue quality and everything fixed due to continuous stool contamination from end-standing sigmoidostomy into vagina of type Ic stool fistula

332 catheter treatment for long-standing atonic bladder following cs in para I (0 alive)

333 bilateral ureter catheterization and transverse repair of type II Aa fistula as early closure in para I (0 alive) leaking 70 days

334 urethralization by longitudinal fascia repair/transverse fixation for post II Ab total intrinsic_stress incontinence grade III in para XI (6 alive)

335 longitudinal repair of large type II Aa fistula in para VI (1 alive) no lectures since surgery ended 17.15 hr

17.30 postoperative wardround
18.00 selection of patients, administration and documentation
19.00 end of the day

---

day 5

friday 21.10

07.00 preparations for the day
08.00 recap of previous day
08.30 wardround
09.00 surgery with step-by-step teaching

336 transverse fascia repair with transverse closure of midline 1.5 cm 0 type II Aa fistula with normalization of euo by doctor trainee under direct supervision by chief consultant in para I (0 alive)

337 transverse repair of intracervical type I fistula in para III (2 alive); delivery II by cs, now obstetric trauma superimposed upon cs trauma

338 transverse bladder onto posterior cervix remnants closure of type I sth-cs fistula in para XII (6 alive)

339 transverse closure + bilateral pcf fixation for minute second obstetric lungu type II Ab fistula in para III (0 alive); excision of scar tissue ++
13.00  break
16.30  two classroom lectures
c the complex trauma of the obstetric fistula
d pelvis anatomy + pelvis floor anatomy: arcus tendineus fasciae, pubo
cervical fascia, levator ani muscle etc etc
17.45  postoperative wardround
18.00  selection of patients, administration and documentation
19.00  end of the day

day 6
saturday 22.10
07.00  selection of patients + preparations for the day
08.00  recap of previous day
two classroom lectures
e genuine intrinsic-stress incontinence and its conservative/surgical ma
agement
f the obstetric trauma in relation to pelvis inlet and structures
08.30  wardround
09.00  surgery with step-by-step teaching
340 state-of-the-art lecture and step-by-step demonstration by chief
surgeon of circumferential fistula type IIAb in para XII (10 alive) with
total circumferential trauma + 2° cervix prolapse
341 reconstructive surgery of obstetric trauma in severely mutilated
type IIAb fistula in para III (0 alive) operated 2x and planned for urinary
diversion
342 transverse fascia repair + fistula closure of third obstetric type
IIAa fistula within large 5x1 cm transverse pcf defect in para IX (6
alive); previous two fistulas healed by immediate catheter insertion
343 repositioning of euo into anatomic position for post mutilated
type IIba total intrinsic stress incontinence in para X (7 alive) operated 3x;
the problem mutilation + pull by fixed cervix; as last resort
344 complicated repair of minute type I fistula fixed to i spine R in para
IX (5 alive) following colpocleisis elsewhere
345 assessment of ureter fistula type III after cs in para II (0 alive) after
successful cs-vcef-repair
346 ureter catheterization R + transverse repair of large type I cs-fistula
in para III (2 alive)
16.30  wardround
17.00  selection of partients, administration and documentation
19.00  closure of the day

day 7
sunday 23.10
07.00  preparations for the day
08.00  wardround; trainees preferred to have a rest day
09.00  surgery
347 ureter catheterization L and real reconstructive surgery of 2nd
obstetric type IIAb fistula in para VIII (1 alive) who delivered 6x after
successful fistula repair post delivery II
348 step-by-step identifying and then systematic reconstruction of
the defects in genuine intrinsic incontinence in para X (4 alive)
349 assessment of total post IIa intrinsic incontinence and type Ic rvf
in para II (0 alive); operation postponed bco heavy stool contamination,
no electricity + Sunday
350 assessment of ureter fistula L after sth-cs in para XIII (8 alive) with
total intrinsic incontinence; successful type IIa repair 4 mth ago
351 instruction of patient + mother about repeat self-dilatation by torch light covered by condom bco congenital vagina malformation; wanzами yankan gishiri (scarification) without resulting in leaking urine

16.30 wardround
17.00 selection of patients, administration and documentation
18.00 closure of the day

day 8
monday 24.10
07.00 preparations for the day
08.00 recap of saturday
08.15 classroom lectures
  e conservative and surgical treatment of postpartum intrinsic stress incontinence grade III
09.00 wardround
09.30 surgery with step-by-step surgery
  352 + 353 reconstructive fascia repair with transverse closure of minute type IIa fistula with total intrinsic incontinence and anorectum repair + sphincter ani reconstruction + perineal body repair of type IIb stool fistula in para III (1 alive) operated 1x for sphincter ani rupture
  354 state-of-the-art urethralization as reconstruction by longitudinal fascia repair/refixation for total post IIb intrinsic stress incontinence grade III in para I (0 alive); both rfv/vvf healed
  355 "repair" of residual severely scarred small fistula with objective in trinsic stress incontinence in para XIV (6 alive)
  356 complicated transverse repair of residual small fistula in para IX (0 alive) with postpoliomyelitis syndrome R operated 2x
  357 urethra reconstruction for total post IIab intrinsic stress incontinence grade III whereby euo posteriorly drawn inside in para VI (1 alive)

14.00 chief consultant travelled to kano for some other business and for the training of senior registrars from aminu kano teaching hospital
17.00 postoperative wardround
17.30 selection of patients
18.30 end of the day

day 9
tuesday 25.10
07.00 preparations for the day
08.00 recap of previous day
08.30 wardround
09.00 surgery with step-by-step teaching
  358 paraurethra_euo fascia fixation for post IIb delivery total intrinsic stress incontinence III in para II (0 alive) as second obstetric leakage after successful vvf/rvf-repair post delivery I
  359 repair of intracervical type I cs-fistula in para X (2 a.live) with cervix fixed/retracted
  360 assessment of ureter fistula by dye test in para VIII (7 alive); since ureter could not be catheterized referred to urologist for abdominal reimplantation
  In kano by chief consultant teaching senior registrars in obs&gyn
  361 clinical lecture + transverse fascia repair/refixation with transverse closure of type IIaa fistula within large transverse pcf defect in para I (0 alive)


362 step-by-step bilateral ureter catheterization + transverse closure of 2.5 cm 0 type I/IIAa cs-fistula with large transverse pcf defect at 3 cm from euo in para VIII (4 alive)

363 repair of mutilated type IIa fistula in PII (0 alive) with cervix fixed/retracted; operated 2x

13.30 chief consultant travelled back to katsina to continue the training

16.00 classroom lectures by dr halliru idris

f pre-, intra- and postoperative care

g vvf in nigeria

17.00 wardround

17.30 selection of patients

18.30 end of working day

day 10

wednesday 26.10

07.00 preparations for the day

08.00 recap of previous day

08.15 classroom lectures

h classicification of vvf as based on qualitative and qualtiitative tissue loss of continence mechanism with consequences for operation technique and prognosis as to healing and as to continence

i classification of rvf as based and involvement of continence mechanism with consequences for operation technique

09.00 wardround

09.30 surgery with step-by-step teaching

364 gradual dilatation of pin-hole non-scarred euo stenosis with dysuria + overflow incontinence as early management in para I (alive) leaking 55 days; further catheter treatment as for atonic bladder

365 state-of-the-art longitudinal fascia repair for extensive postpartum cystocele in para X (6 alive); patient delivered 6x vaginally after cervix fixation for 3° cervix prolapse 19.10.03; cervix still more or less in anatomic position which is evidence-based proof that our technique for 3° cervix prolapse is functioning

366 transverse fascia repair/refixation with fistula closure for type IIAb fistula in para I (0 alive) with cervix fixed onto i spine R

367 transverse repair of small type IIa fistula in para VI (0 alive) as second obstetric fistula; why did it not heal at first attempt?

368 vaginal cystostomy, stone removal and ps-like avw closure for stone-induced urge incontinence in para X (4 alive) who had successful vvf-repair in babbar ruga 27 years ago post delivery I

369 ps-like closure of “inoperable” type IIAb fistula after bladder stone removal in para I (0 alive); after successful closure by multiple repairs she developed bladder stone which perforated into vagina

17.00 postoperative wardround

17.30 selection of patients, administration and documentation

18.30 end of the day

day 11

thursday 27.10

07.00 preparations for the day

08.00 recap of previous day

08.30 classroom lectures by dr kabiru abubakar

j spinal anesthesia

09.00 wardround
surgery with step-by-step teaching

370 + 371 ps-like repair of “inoperable” type IIAb fistula with state-of-the-art anorectum + sphincter ani + perineal body reconstruction in para I (0 alive) who had postpartum fournier gangrene of L vulva resulting in posterior labia loss L

372 clinical lecture + repeat step-by-step demonstration of internal sphincter + external sphincter + perineal body reconstructive surgery in para II (all alive) operated 4x

373 stone removal by vaginal cystostomy thru fistula and then repair with bilateral fascia fixation for second obstetric type IIBb fistula with 2 bladder stones in para V (0 alive) who had successful repair in babbar ruga 15 years ago post delivery

374 transverse repair of small type IIa fistula as early closure in para III (2 alive) leaking 63 days

375 circumferential repair by end-to-end vesicourethrostomy with bilateral fascia refixation for type IIAb fistula in para I (0 alive) after catheter treatment failed

376 urethra reconstruction for total post IIAb intrinsic_stress incontinence whereby euo posteriorly drawn inside in para I (0 alive)

16.30 postoperative wardround

17.00 selection of patients, administration and documentation

19.00 end of the day

day 12
friday 28.10

07.00 preparations for the day

08.00 recap of previous day

08.15 classroom lectures

k immediate management and mass campaign by catheter

l prevention of post IIa repair incontinence

m extensive obstetric trauma

09.00 wardround

09.30 surgery with step-by-step teaching

377 + 378 clinical lecture + step-by-step state-of-the-art circumferential repair by end-to-end vesicourethrostomy with bilateral fascia refixation and then clinical lecture + step-by-step state-of-the-art anorectum + sphincter ani + perineal body reconstruction in para III (0 alive) as early closure at 43 days; immediate perineum suturing pp

379 transverse repair with bilateral fascia refixation of type IIAb fistula in para I (alive)

13.00 break

16.00 closing ceremony of the whole training programme as organized by fmoh with the attendance of the senior special advisor to the president on mdg with the first lady of katsina state as guest of honour; also present the wife of the deputy governor of katsina state, the commissioner for health, the permanent secretary of health and the permanent secretary of mdg katsina; and the national vvf-coordinator with the desk officer on vvf from fmoh

18.30 tour of the center with commissioning of the new wards, ambulances, generators etc as built/donated by mdg katsina

19.00 end of the day
day 13
saturday 29.10
07.00 preparations for the day
08.00 training continued since we have 3 trainees from ilorin, kwara state, where a new center will be established and 1 international trainee from germany; as well to operate the patients not yet attended to
08.30 wardround
09.00 surgery with step-by-step teaching
  380 clinical lecture and state-of-the-art longitudinal reconstruction of pc fascia in large cystocele in para VII (5 alive); all due to obstetric trauma
  381 longitudinal ps-like avw closure of “inoperable” ragged type IIa tah-cs fistula in para XI (8 alive); both ureters identified but cannot be catheterized
  382 on special request from patient fixation of 3° cervix prolapse after 8 operations in para I (0 alive) after sth-cs; the stress incontinence does not bother her since she is still living with husband on same compound
  383 transverse fibrotic fascia repair + highly complicated closure of mutilated third obstetric type IIa fistula in para XI (0 alive) after removal of impacted 8x6x5 bladder stone as first stage
16.00 postoperative wardround
16.30 selection of patients, administration and documentation
19.00 end of working day

day 14
sunday 30.10
08.30 wardround
09.00 surgery
  384 repair of residual fistula with total post IIb intrinsic stress incontinence as last resort for second/third obstetric leaking in para III (0 alive) following multiple repars
11.00 chief surgeon + team travelled 450 km to sokoto for another workshop
17.15 arrival at hotel and end of working day

sincerely yours,

kees waaldijk MD PhD
7th of november 2011
chief consultant surgeon trainer
### Participants
- Dr Abubakar Habibu
- Alh Hassan Z Tagali
- Mrs Yemisi E Ojo
- Dr Zubairu Saad
- Dr Owodunni A Adebola
- Dr Okusanya Babasola
- Mrs Ewana O Sarkin Noma
- Hajiya Saadiya Muhammad
- Alh Balarabe Ayuba Samaila
- Hajiya Muslimat Tayin Ibrahim

### Trainers
- Dr Kabiru Abubakar
- Dr Idris A Halliru

### Facilitators Pre-, Intra- and Post-operative Care
- Dr Abdulmajid Mudasiru
- Alh Abdullahi Haruna
- Alh Kabir K Lawal
- Alh Gambo Lawal
- Hajiya Adetutu Ajagun
- Hajiya Amina Mamman

### Chief Trainer
- Dr Kees Waaldijk MD PhD
obstetric fistula surgery training

prepared and adapted for
training manual meeting 10th thru 12th august 2011
dar es salaam
tanzania

guidelines

kees waaldijk, MD PhD

chief consultant fistula surgeon
obstetric fistula surgery training

based on evidence

as practiced in

the national vvf project nigeria

35,000 vvf_rvf-repairs and related operations

establishment of 13 vvf-repair centers

execution of 41 workshops

training materials

training of

362 general doctors and consultants

345 pre-, peri- and postoperative and anesthesia nurses

71 other persons

kees waaldijk, MD PhD

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1st edition: november 2003

2nd edition: april 2005 prepared for unfpa meeting in niamey

3rd edition  august 2011
<table>
<thead>
<tr>
<th>Table of Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>obstetric fistula: need for training</td>
<td>3</td>
</tr>
<tr>
<td>obstetric fistula training and trainees</td>
<td>4</td>
</tr>
<tr>
<td>obstetric fistula training curriculum</td>
<td>5</td>
</tr>
<tr>
<td>obstetric fistula training module</td>
<td>7</td>
</tr>
<tr>
<td>obstetric fistula training center</td>
<td>8</td>
</tr>
<tr>
<td>obstetric fistula repair center</td>
<td>9</td>
</tr>
<tr>
<td>obstetric fistula rehabilitation center</td>
<td>10</td>
</tr>
<tr>
<td>nation-wide obstetric fistula service</td>
<td>11</td>
</tr>
<tr>
<td>obstetric fistula tourism</td>
<td>12</td>
</tr>
<tr>
<td>obstetric fistula training for industrialized world</td>
<td>14</td>
</tr>
<tr>
<td>training of non-doctors: discrimination and hypocrisy</td>
<td>15</td>
</tr>
<tr>
<td>fistulas for beginners</td>
<td>16</td>
</tr>
<tr>
<td>training curriculum for doctors</td>
<td>24</td>
</tr>
<tr>
<td>comments isofs-figo-rcog training manual</td>
<td>32</td>
</tr>
</tbody>
</table>
The obstetric fistula is a major health problem on the rise for which a definite solution still has to be found; some 1,500,000 patients are desperately waiting for operation. Prevention is a utopia for at least another century since a network of 150,000 functioning obstetric units are needed evenly distributed over the inhabited parts of Africa where day and night an emergency caesarean section can be performed upon arrival of the patient, with an even more concentrated network to detect the first sign of obstructed labor; that is the lesson learned from history in the industrialized world; what about delay in diagnosis of obstructed labor, in decision taking and in transport? Prevention of the woman from becoming an outcast is very well feasible, even under primitive conditions, by the immediate management by catheter and/or early closure. Once the fistula patient has become an outcast, rehabilitation is only by successful closure of the fistula which means secondary/tertiary health care.

The best we can aim for at the moment is to spread the expertise how to manage the obstetric fistula confidently within the scarce resources of developing Africa; and once available to keep this expertise where it is needed for as long as needed. For sustainability reasons, the management of the obstetric fistula has to be simple, safe, effective, feasible, affordable and payable. However, there are only 2 training centers in the world where systematically doctors, nurses and other health personnel are trained in the management of the obstetric fistula.

Since manpower, expertise, facilities, equipment, training materials and finances are scarce, it will take some time before an impact can be expected.

Some ideas on how to proceed are presented in separate chapters:

- obstetric fistula training and trainees
- training curriculum
- training module
- obstetric fistula training center
- obstetric fistula repair centers
- obstetric fistula rehabilitation
- nation-wide obstetric fistula service
- obstetric fistula tourism
- training of industrialized world
- training of non-doctors

Besides this the obstetric fistula has to be integrated within the government health system as a major public health problem with a national program; also (inter)national donor agencies have to be involved.
obstetric fistula training and trainees

introduction
In order to cope with the increasing number of obstetric fistula patients in the developing world it is important to train sufficient doctors, nurses and other personnel. The doctor trainees need at least 10 repairs under strict supervision, from placing the patient on the operating table until the very end of the operation. Future trainers need personal exposure to the complicated and difficult fistulas in order to train other doctors in the noble art of fistula surgery. They have to become completely familiar with all kinds of fistulas and all kinds of operations. For nurses and other health personnel it is sufficient to have an intensive exposure to the obstetric fistula combined with practical and theoretical lessons.

different training courses
a. training course for doctors without experience in fistula surgery
b. training course for consultants without experience in fistula surgery
c. follow-up advanced training courses in obstetric fistula surgery
d. training course for future doctor trainers with sufficient experience
e. training course for operation theater nurses
f. training course for pre- and postoperative nurses
g. training course for anesthesia nurses
h. training course for future nurse trainers with sufficient experience
i. refresher courses for nurses
j. training course for supporting staff and other (health) personnel
k. training course for doctors and staff from the industrialized world

requirements of doctors
A trainee must have a surgical experience of at least 3 years in order to learn the basics of obstetric fistula surgery. (S)he does not need to be a consultant but (s)he must be interested in the work and not in the money of the training course.

requirements of future trainers
To become a future trainer, in principle the trainee should be a consultant and have already a personal experience of at least 400-500 repairs and he must be prepared to become a full-time fistula surgeon.

requirements of nurses/midwives or anybody else
A trainee must be working with obstetric fistula patients and be willing to continue to do this. So any trainee should be screened well by his (he) employer and by the sponsoring agency.

duration of training
For doctors without or with low experience in fistula surgery a period of 1.5-2 months will be sufficient if there are enough patients for them to operate upon; after 50-100 personal repairs, they can be trained again for 1 month. For nurses and other (health) personnel a period of 1 month will be sufficient if there enough patients available. For future trainers the best would be an initial period of 1 month, then again 2-4 weeks after some 6 month and if necessary again 2-4 weeks after 6 months.
training curriculum for doctors and nurses

the problem is that fistula surgery looks so simple, so everybody involved in gynecology is a fistula surgeon, and turns out to be so difficult another problem is that surgery cannot be learned from a textbook or a theoretical lecture or a workshop but only by performing the surgery oneself under supervision of an expert fistula surgeon in a sufficient number of patients however, before starting with the (surgical) management the trainee must learn and understand first the mechanism of obstructed labor, the complex trauma of the obstetric fistula, the complex anatomy of the pelvis and intrapelvic organs and their different tissues, muscles, ligaments etc and the theoretical solutions once the doctor-trainee masters all the theoretical aspects, his practical training can start and step-by-step he has to be taught the (surgical) management of the obstetric fistula though the nurse-trainee does not perform the surgery, (s)he must be familiar with all the surgical techniques and all the other theoretical and practical aspects

complex trauma of the obstetric fistula
the enormous variety of the obstetric fistula and other intravaginal, intrapelvic, extravaginal and systemic lesions due to obstructed labor

anatomy of the pelvis
the pelvic bones, the intrapelvic organs and their relation

urine/stool continence mechanism in the female
anatomy + physiology of continence

history taking
parity, duration of leakage, previous repairs etc

examination of obstetric fistula patients
inspection, vaginal examination and examination of other lesions

classification of the obstetric fistula
based on the quantitative and qualitative amount of tissue loss of the continence-closing mechanism with consequences for the operation technique and prognosis

immediate management of the obstetric fistula
by catheter and/or early closure

preoperative preparation
laboratory, high oral fluid intake, hygiene

spinal anesthesia
technique, monitoring and complications

surgical techniques
basic techniques for the different fistula types and their adjustment for that specific fistula + other techniques for stress incontinence, bladder stone, vagina atresia etc

handling of surgical instruments
this is difficult inside the vagina and needs expert coaching
intraoperative complications
ureters, hemorrhage, stool contamination etc

postoperative care
catheter management, high oral fluid intake etc

immediate postoperative complications
anuria, blocked catheter, secondary hemorrhage

continence mechanism in the female
theoretical aspects with practical (conservative and surgical) consequences

management of long-term sequelae
urethra stricture, bladder stone, vagina atresia, secondary amenorrhea

postrepair total urine intrinsic stress incontinence
bladder drill, urethralization_fasciocolposuspension

how to set up a VVF-repair center
in an existing hospital

how to set up a VVF-training center
in an existing VVF-repair center

counseling
personal hygiene, when to start sexual intercourse, subsequent pregnancies and deliveries

depending upon their theoretical knowledge, their surgical skills and their surgical experience, it is clear that the training of each doctor is highly individual

since it takes 4-6 years to become a consultant surgeon, it is also clear that it takes a long time before one masters the noble art of obstetric fistula surgery

during their training course the doctor-trainees can only be taught the basic principles of obstetric fistula surgery, then with ups and downs they have to gather their own expertise by hard work

training is a continuous life-long process which never stops
training module
evidence-based as practiced in the national vvf project nigeria

first
selection of an obstetric fistula management team consisting of a doctor, an operation theatre nurse, an anesthesia nurse and two pre- and postoperative nurses who are interested and willing to provide a service for the obstetric fistula patients

second
training of the complete team in an established obstetric fistula training center with a high turn-over of patients and a high number of repairs for the doctor 6-8 weeks initially for the nurses 4 weeks

third
organizing a 5-day workshop to operate a large number of patients in combination with lectures as co-facilitated by the consultant trainer + team for advocacy publicity that something can be done and to start the obstetric fistula service in that area

fourth
the team starts working on its own with the simple fistulas which they must be able to handle themselves confidently after their initial training

fifth
the consultant trainer + team come from time to time for on the job training and to handle the more complicated fistulas and to select more staff for training

sixth
after 50-100 personal repairs, the doctor should come for advanced training to the obstetric fistula training center for 4-6 weeks in order to boost his expertise

seventh
the doctor continues his own surgical program and the consultant trainer + team comes from time to time for further on the job training, to assess the service and to handle the difficult fistulas

eight
at any time the doctor comes further training of 2-4 weeks whenever he thinks he needs more training

ninth
after 250-300 repairs and if feasible and if there is a need, the doctor should come to the training center for further advanced training to become a future trainer

tenth
at any time, be (s)he a doctor or already a trainer, whenever there is a need, (s)he should appeal and come for further training to the established training center

workshops have low value for the initial training but high value for (more) experienced fistula surgeons on specific topics such as postrepair incontinence and definitely value in advocacy and helping large numbers of patients within a short time.
obstetric fistula training center

introduction
In order to cope with the increasing number of obstetric fistula patients in the developing world it is important to have functioning training centers where present and future generations of surgeons can be instructed in the (surgical) management of the obstetric fistula. The variety of qualitative and quantitative lesions of the obstetric fistula is such that they can only be taught the basics. Since it is handwork the trainees need at least 10 repairs under strict supervision; following their training they still can operate confidently only the simple fistulas. However, only 15-20% of the fistulas are fit for the trainees, the rest is too complicated or too difficult. For nurses and other health personnel it is sufficient to have an intensive exposure to the obstetric fistula combined with practical and theoretical lessons. Following a simple calculation model the following can be demonstrated.

requirements of the trainer
For a trainer to perform well he needs sufficient experience considering the variety and the difficulty grade of obstetric fistula surgery, i.e. a minimum of 400-500 repairs. Otherwise it would be the blind teaching the lame how to cross the road. In principle the trainer must be a consultant in order to have sufficient authority within the institution, within the set-up of the (government) health care and within the region from which the trainees are coming.

requirements of supporting staff
Since it is teamwork that counts, also his supporting staff should be of high quality in order to teach the trainees, be it a doctor or a nurse or anybody else, the pre-operative care, the anesthesia, the postoperative care and the patient counseling

requirements of the training center
For a training center to function well there must be sufficient operations, at least 300 fistula repairs a year, i.e. 6 operations per week. With less than 300 repairs it will be difficult to sustain a continuous daily intensive training/teaching programme. With 300 repairs a year there are only 45-60 operations available for the trainees, or only 1 repair a week. This would mean that the center can only handle 5-6 trainees a year, and that only 1 trainee can be taught at the same time. During a training period of 2 months, a trainee will be present at only 55-60 repairs out of which he can perform 9-10 simple repairs himself. However, some will be lucky and some not since the patients are not coming evenly distributed over the whole year; the same applies to the patients with a simple fistula which can be handled by a trainee. In principle, the center should be a government-owned or a government-recognized training center where government, mission and even private doctors and nurses can attend the postgraduate courses.

on the job training of residents or other doctors in teaching or other hospitals
This takes a long time and is only possible if the trainer has sufficient experience and the number of patients is enough as explained already. It would be better to assign the residents to a real obstetric fistula repair or training center for 2 months for an intensive exposure to the obstetric fistula.
obstetric fistula repair center

This should be a separate unit with a separate hostel, a separate ward and a separate operating theater with separate staff for pre-, intra- and postoperative care.

In the beginning it can be integrated within an existing hospital and then one fixed day a week has to be a full fistula operating day (no other operations, neither planned nor emergency); but if the number of operations are more than 150-200 a year a specific VVF center should be built.

As it is a fistula repair center it should concentrate on the surgery only, otherwise the professional surgeon and his professional medical staff are wasting their time: a surgeon and his medical staff are not social workers.

To prevent conflict of interest the hostal annex rehabilitation center should be situated outside the hospital premises, but in the neighborhood.

Once the surgical job has been finished other professional social staff have to take over the rehabilitation.

An effort has to be made to keep things simple with straightforward pre-, intra- and postoperative guidelines.

The one thing that cannot be compromised is a high-quality operating table; except for sharply curved THOREK scissors and sharp DESCHAMPS aneurysm needle no special instruments are needed.

Spinal anesthesia is safe, simple, effective and cheap since it does not need expensive equipment.

For laboratory investigations Hb and serum creatinine would be advisable; urine investigation is unreliable.

X-rays are not required; even if the X_IVP would show abnormalities this does not mean that the patient cannot be operated.

Physiotherapy is something for the rehabilitation center but only if fixed contractures have developed; immediate mobilization is the best to prevent them.

The treatment of obstetric fistulas should be free of charge but the patient should bear some of the costs.

In order to bring the service towards the patients it is better to have multiple small centers than one large center in a country especially since the action radius of an obstetric fistula repair center is 100-120 km. In planning a nation-wide service this should be taken into account.
Rehabilitation means: prepare/help the patient to take full control of his/her life ... and does not mean: make the patients depending upon the service depriving them of their own responsibilities, that is the wrong approach and has nothing to do with rehabilitation.

The best rehabilitation is a successful repair; then it will take place spontaneously.

Only the “incurables” (after multiple repairs which did not stop the continuous urine leaking, be it a residual fistula or total postrepair urine incontinence) need vocational training in order to earn their own living. Though for these unfortunate girls/women life has ended, someway somehow they have to continue.

This is not a job for the professional surgeon and his professional medical staff but for other social professionals. Unfortunately, the social professionals are not or not yet interested.

The best would be a hostel annex rehabilitation center in the neighbourhood of a fistula repair center where the social workers could do their job. This center has to be outside the hospital, otherwise there will be a negative impact upon the functioning of the fistula repair center.

What happens if there is no separation of hospital and rehabilitation services is the following. Since the women have to survive, males come at night and visit them in the center (for some males the smell of urine seems to be an aphrodisiac; as well the women are highly attractive!), some of them fight over one woman and males and females fight the staff if they are trying to prevent them from entering the compound and break the wall if the gate is closed; many times the police has to intervene. However, if the police is asked to prevent this from happening, they take the patients as girlfriends and it is even more difficult to reverse this. As well the old patients are instructing the new patients in all types of behavior which is not in line with the hospital instructions. They have their own ideas about the pre- and postoperative management and some of them even sell native medicine to the new patients with terrible consequences. They claim the best food and the best places in the hostel for which they befriend the male staff of the hospital or bribe the female staff. That is all fine in the struggle for survival and everybody is free in doing what (s)he has to do, but for smooth running of hospital services such as obstetric fistula surgery it is not ideal.

The hostel rehabilitation center has to be in the neighbourhood of the fistula repair center for quick communication and smooth cooperation.

To avoid conflict of interest the fistula repair center has to come under the Ministry of Health and the hostel annex rehabilitation center under the Ministry of Social Welfare; however, there must be good cooperation.

However, do not convert these rehabilitation centers into fistularia since anybody must take the full responsibilities of his/her own life
nation-wide obstetric fistula service

any country with a high prevalence of the obstetric fistula should make an effort to organize and execute a nation-wide feasible and sustainable obstetric fistula service, especially since it will take another century to prevent it from occurring

in order to bring the service towards the patients (and not the other way round) and taking into account the action radius of an obstetric fistula center of 100-120 km the following is suggested to create a nation-wide network of functioning centers
one big referral center for the whole country (where patients have to travel long distances, the awareness that something can be done is low and the referral system is not functioning) is not the ideal set-up

national masterplan with national program
developed and coordinated by the national ministry of health; with its own budget

regional masterplan with regional program
developed and executed by the regional ministry of health; with its own budget

national obstetric fistula training center(s)

at least one training center and if needed more training centers depending upon the size of the country and the distribution of the health services
if the country has been divided into large geopolitical regions, each region needs its own training center
each center has to be an independent obstetric fistula hospital (not a subunit of the gynecologic department) to ensure that the patients and the trainees get first priority without interference by others
however, each center should be liaised with the (university) teaching hospital

regional obstetric fistula repair centers

each region, be it state, province or département needs its own obstetric fistula repair center, preferably in the capital of the region
this repair center should be an independent obstetric fistula hospital where only VVF and RVF repairs and related operations are performed; so no interference by others for gynaecologic operations or emergency operations such as caesarean section

incentives for the personnel

since there is no money to be made in the management of the obstetric fistula somehow the highly qualified and educated personnel have to be compensated, financially and in career planning; otherwise they will leave

step-by-step implementation

things cannot be changed overnight but an effort has to be made so that within 2-5 years each country has its own functioning service in place and then sustain it

training curriculum for residents in obstetrics and gynecology

actually each and every gynecologist should have ample knowledge of the obstetric fistula and be able to perform the simple repairs as that is his job; however, during their training they have not been exposed sufficiently and now it is too late therefore it would be better for the present and future residents to have an intensive exposure to the obstetric fistula of 2 months in either a repair or a training center instead of exposure to urology and their official curriculum should be adjusted
obstetric fistula tourism
or as a hausa proverb says
the king in one country is a beggar in another

report american surgeons' visit to sokoto from 21/9- thru 29/9-97

for political reasons and because there was a lot of money to be shared locally amongst the organizers, the usual thing in africa, a team of american surgeons (gynecology/surgery/plastic surgery/anesthesia) from a University Teaching Hospital came to maryama abacha hospital to perform obstetric fistula surgery

though in their own surroundings they are experts, their experience in obstetric fistula surgery was zero simply because there are no obstetric fistulas in america

the chief consultant fistula surgeon offered to help and was willing to train them but they were so arrogant that they refused to talk to him since they knew it all

so they teamed up with some nigerian doctors who did not have the slightest clue as well; in total they were nine: dr e, dr b, dr h, dr k, dr k, dr b, dr g, dr v and dr b

to show off they started with the most complicated patients who had been operated already once or even more times

they worked in two teams from 9.00 am up to midnight since operation time got out of hand: from a minimum of 2 hours up to 7 hours!

on the very first day one patient died immediately afterwards, and her name was not entered in the operation register whilst all the documents disappeared (american litigation)

after 3 days the resident doctors who came to “admire” their surgical skills walked out on them though in a polite hausa way

after 6 days the remaining patients refused to be operated since they are highly intelligent and noticed that none of the operated patients were ok but started to leak already after 1-2 days; as well some of the staff advised them so

so the last two days only 1 desperate patient a day came forward to be operated

they were only interested in the surgery and did not even bother about postoperative care and follow-up and left the mess for the chief consultant and his team to be sorted out

the ‘result’ of their arrogance and obstetric fistula analphabetism is the following:

total number of patients operated: 32 patients

outcome:

- early breakdown_leaking: 30 patients
- not leaking (ureterosigmoidostomy): 1 patient
- postoperative mortality: 1 patient

it is left to the reader to draw his/her own conclusions about the value of obstetric fistula tourism
### List of Obstetric Fistula Patients Operated from 21/9- Thru 29/9-97

<table>
<thead>
<tr>
<th>Patients Name/Town</th>
<th>Op Date</th>
<th>Approach</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>h m mabera</td>
<td>21/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>h m gandi</td>
<td>21+27/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>z l sabon_birni</td>
<td>21/9-97</td>
<td>vaginal</td>
<td>leaking</td>
</tr>
<tr>
<td>?? ??</td>
<td>21/9-97</td>
<td>abdominovaginal</td>
<td>died</td>
</tr>
<tr>
<td>a a yabdo</td>
<td>22/9-97</td>
<td>vaginal</td>
<td>leaking</td>
</tr>
<tr>
<td>a m kwana</td>
<td>22/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>a m ginga</td>
<td>23/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>f m shuni</td>
<td>23/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>h m sokoto</td>
<td>23/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>f g katami</td>
<td>23/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>a l kura</td>
<td>23/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>i g bodinga</td>
<td>23/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>z u achida</td>
<td>23/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>r m gwadabawa</td>
<td>24/9-97</td>
<td>abdominal</td>
<td>leaking/infected</td>
</tr>
<tr>
<td>a s moriki</td>
<td>24/9-97</td>
<td>vaginoplasty</td>
<td>leaking</td>
</tr>
<tr>
<td>s m wurno</td>
<td>24/9-97</td>
<td>vaginal</td>
<td>leaking</td>
</tr>
<tr>
<td>s a gwadabawa</td>
<td>24/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>k m gada</td>
<td>24/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>r m samamum</td>
<td>24/9-97</td>
<td>abdominal</td>
<td>leaking/infected</td>
</tr>
<tr>
<td>n m gwadabawa</td>
<td>24/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>a y chimola</td>
<td>25/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>i i hamali</td>
<td>26/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>h b dankaiwa</td>
<td>26/9-97</td>
<td>vaginal</td>
<td>leaking</td>
</tr>
<tr>
<td>a u dange</td>
<td>26/9-97</td>
<td>vaginal</td>
<td>leaking</td>
</tr>
<tr>
<td>a m dange</td>
<td>27/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>h l dange</td>
<td>27/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>a i ilorin</td>
<td>27/9-97</td>
<td>ureterosigmoidostomy</td>
<td>ok</td>
</tr>
<tr>
<td>r i gwadabawa</td>
<td>27/9-97</td>
<td>vaginal</td>
<td>leaking</td>
</tr>
<tr>
<td>m h binji</td>
<td>27/9-97</td>
<td>abdominal</td>
<td>leaking</td>
</tr>
<tr>
<td>a a sokoto</td>
<td>28/9-97</td>
<td>vaginal</td>
<td>leaking</td>
</tr>
<tr>
<td>h b mabera</td>
<td>29/9-97</td>
<td>vaginal</td>
<td>leaking</td>
</tr>
</tbody>
</table>

After long deliberations the author decided to come out with this detailed report about obstetric fistula tourism since this has been repeated several times by others and it seems that some groups/organizations are planning to make the same mistake; some even think of involving the tourists in training.

However, neither the patients nor the tourists are helped by such an exercise.

It is laudable to help these poor patients but then make sure one is trained properly by expert fistula surgeons who are highly willing to do so!
there are many doctors, nurses and other persons in the industrialized world who are very much willing to help the obstetric fistula patients in the developing world; for this they are volunteering to spend their own money (expensive air travelling, accommodation, feeding, no income), their time and their expertise; however, no experience with the obstetric fistula

there are organizations in the industrialized world willing to sponsor initiatives that will contribute to the management of the obstetric fistula patients by sending teams to operate them thinking that an expert surgeon in europe, asia, australia or united states is also an expert fistula surgeon in africa; however, they are wrong

it would be ridiculous not to make use of good-willing individuals and good-willing organizations; so we have to educate the organizations and we have to train the volunteer surgeons and staff in the (surgical) management of the obstetric fistula under rather primitive conditions in an african hospital

criteria for doctors and staff
they must have been working in a developing country for some years and willing to spend regular time (once or twice a year some weeks) in the future in a developing country; otherwise it is a waste of valuable time by the expert fistula surgeon

in nigeria the following procedure is used

first
initial visit of 2-4 weeks
teaching the complex trauma of the obstetric fistula, inspection and examination of the obstetric fistula patients and their lesions, spinal anesthesia and some personal vaginal repairs depending upon how long they stay since most of them are already expert surgeons they do not need the intensive coaching of instrument handling at the end they all say they never knew and never realized how complicated the surgical management of and how extensive the obstetric fistula trauma is

second
after their visit they know which fistulas they can handle themselves and which not, and now they can start with their surgery in order to gather their own expertise

third
follow-up visit of 2 weeks
after some 50 repairs they come back to discuss their experience and to upgrade their skills, if they feel they need it

fourth
they continue their work also operating the more complicated fistulas, and at any time they can come back if there is a need for advanced-level fistula surgery

fifth
follow-up visit of 2 weeks
actually one highly experienced urologist wants to come back for the fourth time
surgical training of non-doctors or even non-medical persons

discrimination and hypocrisy

there is a debate over the training of clinical assistants or even non-medical persons

first, do not start a practice in Africa which one never would accept in Europe or the USA; are Africans not human beings who deserve the best?

then, obstetric fistula surgery is the most difficult and complicated surgery I ever encountered in my life; so it needs the right education to become a doctor, the right surgical training to become a specialist and then the right postgraduate training to become a fistula surgeon.

this reflects in the statement by some organizations that a programme is successful if 85% closure rate can be achieved.

however, what kind of philosophy and surgery is that; we should aim at 100%.

learning a trick is not sufficient; one needs full understanding of the complicated anatomy and physiology of the pelvis, pelvis floor, urine/stool continence mechanism in the female etc etc; one has to know exactly what has been lost due to pressure necrosis; how to perform reconstructive surgery if the normal functional anatomy and pathophysiology are not known.

only then with expert surgical skills one may be able to handle the obstetric fistula with care to full satisfaction of the patient and the surgeon.

if a non-doctor is attending a postgraduate surgical course (s)he will get a licence to perform surgical malpractice.

why not sponsor this non-doctor to become a real doctor first and then only if (s)he has achieved this send him/her for postgraduate training in the noble art of obstetric fistula (surgical) management; same practice as in the industrialized world.

discrimination: what is good for Africa is not good enough for Europe/USA.

lastly, the people who propagate this practice are not believing in it themselves as I have never seen a non-doctor and/or non-medical “fistula surgeon” been appointed as chief medical director of their hospital (with all the financial benefits).

(s)he can be trusted with the responsibility of invasive surgery and it is good for fund raising, but (s)he cannot be trusted with the administrative/financial responsibility of chief medical director, what a hypocrisy.

kees waaldijk, MD PhD

august 2011
fistulas for beginners
objective characteristics and setting standards
as based on evidence
kees waaldijk MD PhD

abstract
due to vocal statements by verbal surgeons in the industrialized world and political statements by the major aid organizations, there is a lot of misunderstanding about obstetric fistula surgery and training such as the patient can be cured by a simple operation and beginners need rapid hands-on training for a short period however, there are no simple fistulas considering the complex trauma of the obstetric fistula and the enormous variety in tissue loss; it only may look simple in the hands of the few experienced fistula surgeons still one has to start somewhere and there are vesicovaginal fistulas suitable for beginners as based on objective findings as to size, location, tissue quality, mobility of fistula/tissue/cervix, width of pubic arch, depth of vagina, concomitant rectovaginal fistula/spincter ani rupture, previous repairs etc; all the characteristics of a small type IIa fistula are outlined in order to help trainers and trainees second, the first priority in training is to teach and demonstrate the anatomy of the pelvis floor, the obstetric pressure gradient within the pelvis, the variety in tissue loss, a systematic examination of these lesions, a classification as based on the quantitative/qualitative amount of tissue loss and the different solutions as customized to that specific fistula only if the trainer and trainee have full understanding of all the theoretical/practical aspects, then the last thing is hands-on training under direct supervision according to the basic principles of general, urologic, gynecologic, colorectal, septic and especially reconstructive surgery to reconstruct the functional anatomy all in order to restore the normal physiology; this is not something for inexperienced surgeons out of the 10,529 patients operated during 1983-2010 in the 4 centers katsina, kano, zaria and nguru where there is reliable follow-up till at least 5-6 months post operatively, only 1,236 (12%) fulfilled these criteria and were operated by the author and his trainees with the following results:
final healing in 1,230 (99.5%) as 1,221 (98.8%) healed at first attempt and another 9 at second attempt; 3 patients had a ureter fistula as well which was reimplemented successfully at separate attempt and 4 patients did not report for 2nd attempt out of the 1,230 patients with a healed fistula 1,223 were completely continent whilst only 7 (0.5%) had persistent postrepair incontinence but they did not report for incontinence surgery

introduction
there is a lot of debate about obstetric fistula surgery and training most of it by verbal surgeons in the industrialized countries with no or little personal experience and by the major organizations who use it for political reasons and for fund raising this all resulted in many wrong assumptions and instructions without any evidence such as early-age delivery being cause of obstetric fistula, rapid intervention hands-on training without proper theoretical instruction and trying to come up with all sorts of classification etc whilst stressing the need for evidence based results; something like the blind teaching the lame how to cross the road; little knowledge is dangerous after 28 years of obstetric fistula surgery with 21,000 systematic repairs with evidence-based long-term follow-up including appropriate operation reports and
database of more than 250 parameters per patient, systematic research and training of some 350 doctors in one form or the other and having set up 14 vvf-repair centers and 2 training centers, it is time for the author to set certain standards for classification, operation techniques, research and training there are no simple fistulas since obstetric fistula surgery is complicated reconstructive surgery of pressure necrotic tissue loss in order to reconstruct the functional anatomy in an enormous variety of quantitative and qualitative amounts of pressure necrotic tissue loss; it only may look simple in the hands of the few highly experienced fistula surgeons and it is the wrong mentality to have “hands on” training without understanding the complex trauma of the obstetric fistula; where in the industrialized world is this being practiced?; and why should there be different standards for the developing world? however, surgeons have to start somewhere in getting their experience in the science and noble art of obstetric fistula surgery so the first part, like in any surgical training, is teaching the anatomy and function of the pelvic floor structures like the importance of the pubocervical fascia, the urine and stool continence mechanism in the female, the arcus tendineus fasciae and arcus tendineus of levator ani muscles etc; then the variety of pressure necrotic lesions due to obstructed labor in relation to the pelvic floor structures and classification; then the principles of (reconstructive) surgery and physiologic wound healing processes etc the second part is to demonstrate the enormous variety of the complex obstetric fistula trauma in the patient and explain the principles as based on the findings in reconstruction of the functional anatomy since and the fistula has to heal and the physiology has to be restored resulting in continence the third part is for the trainees to analyse and determine themselves the quantitative and qualitative amount of tissue loss due to pressure necrosis and to make up their mind how to deal with these the very last part is the hand-on surgical training where they can practice their own surgical skills though under strict supervision

**objective criteria**
based upon an extensive experience of more than 21,000 repairs with excellent evidence-based results in closure of the fistula after one or more operations in more than 98% with severe incontinence in only 2-3% there are some fistulas which are suitable for beginners; the objective characteristics of which are outlined in table I with drawings in fig 1 and 2

**table I**

**characteristics of fistulas for beginners**

<table>
<thead>
<tr>
<th>Size</th>
<th>0.2-1.5 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>midline</td>
</tr>
<tr>
<td>Distance from evo</td>
<td>2-4 cm</td>
</tr>
<tr>
<td>Classification</td>
<td>small type IIa</td>
</tr>
<tr>
<td>Ruga folds</td>
<td>intact</td>
</tr>
<tr>
<td>Mobility</td>
<td>good mobility of fistula, tissues and cervix</td>
</tr>
<tr>
<td>Pubic arch</td>
<td>≥ 85°</td>
</tr>
<tr>
<td>Vagina depth</td>
<td>≥ 10 cm</td>
</tr>
<tr>
<td>Previous operation</td>
<td>no contraindication as long as</td>
</tr>
<tr>
<td></td>
<td>no major scarring and no mutilation</td>
</tr>
<tr>
<td>Rectovaginal fistula</td>
<td>no contraindication</td>
</tr>
<tr>
<td>No severe obesity</td>
<td>obesity makes any operation complicated</td>
</tr>
</tbody>
</table>
fig 1 location of fistula

fistula for beginner

© Kees
fig 2 several possibilities

fistulas for beginner

© kees
fistulas < 0.2 cm are difficult to handle and need special insight and operation principles

fistulas not in the midline are difficult to handle since instrument handling and tissue handling is complicated

distance from euo

any proximal fistula is difficult (instrument handling) and if it is too distal the delicate urethra (main continence structure) may be traumatized

classification

small type IIa fistulas where II means involving the urine continence mechanism, A no (sub)total urethra involvement and a no circumferential defect

ruga folds

when the ruga folds are not intact there is far more trauma than anticipated at first sight and one has to determine exactly the amount of tissue loss

mobility

if mobility is poor then mobilization of tissue and tension-free closure may be compromised or even impossible; even after closure there may be traction upon the repair, such as. when a retracted cervix (after cesarean section) is pulling on the repair when the patient is coughing

pubic arch

if the pubic arch is < 85° then access may be poor which would make the operation more complicated

vagina depth

if the vagina depth is < 10 cm there is already substantial tissue loss

previous operation

if operated by expert surgeon there is almost no scar tissue, however, if operated by a surgeon without expertise there may be excessive scar tissue and mutilation

rectovaginal fistula

a rectovaginal fistula does not interfere with the operation technique or healing; a sphincter ani rupture makes the access even better

however, beginners should not combine the vvf and rvf in one session but concentrate totally on one at a time

severe obesity

severe obesity makes any operation complicated; if so the patient should lose weight first before she can be operated

preoperative preparation

the normal preoperative preparation should be followed like in any other operation; special for the vvf is abundant preoperative oral fluid intake until the spinal anesthesia which will clean the fistula, bladder and urine and hydrate the patient so that spinal anesthesia becomes safe, ureters can be identified and the occurrence of catheter blockage is minimal and to ensure patient compliance

operation technique

under spinal anesthesia and in the (exaggerated) lithotomy position a proper examination is performed whereby the above-named checklist is followed; then the surgeon should ask himself if he is able to handle this fistula competently

a liberal use should be made of episiotomy to improve the access to the operation field

an incision is made at the fistula edge with bilateral transverse extension; then minimal sharp dissection of the anterior vagina wall from the pubocervical fascia (with
adherent bladder/urethra), identification of the pubocervical fascia, a transverse
closure of the pubocervical fascia (with adherent bladder/urethra) is made by a
single layer of inverting polyglycolic acid; the patient is asked to cough (with urine in
the bladder) to check for urine leakage thru suture line or urine thru eu
a foley catheter ch 18 is inserted and it is checked if urine flows thru the catheter
which means 3 things; catheter is in the bladder, at least one ureter is functioning
and the patient is not in shock
the bladder capacity is estimated and the urethra length is measured in mm
the anterior vagina wall is only adapted with 2x everting nylon sutures according to
the principles of septic surgery
the episiotomy is closed, and secure check made of the hemostasis; as routine a
vagina pack is not inserting unless there should be diffuse oozing which cannot be
controlled otherwise

postoperative care

intensive care is normally only for 12-24 hours with liberal use of analgetics; no
morphine or morphine derivatives since these interfere with breathing
the following morning the patients have to be mobilized like in any other operation;
besides good for their general health it is also good for prevention or treatment of
contractures
abundant fluid intake for as long as there is foley catheter inserted which is left in for
a minimum period of 14 days; if nonabsorbable sutures have been used for
adaptation of the anterior vagina wall these are removed 1 week after catheter
removal
upon catheter removal the patients is instructed to continue abundant oral fluid
intake and to urinate frequently, to refrain from sex for 4-6 months, to come for
regular follow-up up till 6 months postoperatively, to report when 3 month pregnant
and to go immediately when labor pains start to a hospital at subsequent deliveries
during the recovery phase all the patients are attending rehabilitation courses in
special centers like literacy class, making soap, sewing etc

documentation

an electronic relevant operation report is made of every patient including a drawing
of the fistula and the other findings of the complex obstetric fistula trauma, electronic
photographic documentation is performed before and at operation end, the follow-
ups are written down on the operation report and all the data (more than 250
parameters per patient) are entered into an extensive database;
since 2005 at operation end the results are prospectively predicted at 5% range from
5% to 95% as to healing and as to continence and for objective reasons written
down in the operation report and entered into the database;
this unique documentation is hard to find elsewhere, especially the prospective
predictions as to healing and as to continence of each operation

results

out of 10,529 patients operated during the period 2008-2010 in katsina, kano, zaria
and nguru where there are reliable follow-up data, only 1,236 (12%) fulfilled the
above-outlined criteria

the evidence-based postoperative results have been analyzed in table II.
**Table II**

**Results in 1,237 Patients Operated During the Period 1983-2010**

- Healed first attempt: 1,221 (98.8%)
- Healed second attempt: 9 whilst 4 did not report for another repair
- Postrepair continence surgery: 4 all totally continent
- Healed final outcome: 1,230 (99.5%) persistent incontinence only 7 (0.5%) however, they did not report for incontinence surgery
- Mortality: 2 (< 0.2%) native medicine 1; cerebrospinal meningitis 1

Some particulars of the fistulas which did not heal by first attempt in the centers are given in Table III

**Table III**

**Some Particulars of the 15 Fistulas Which Did Not Heal at First Attempt in the Centers**

<table>
<thead>
<tr>
<th>Center</th>
<th>Fistula</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katsina</td>
<td>vvf 437</td>
<td>Operated 1x</td>
</tr>
<tr>
<td></td>
<td>vvf 605</td>
<td>Native medicine mortality</td>
</tr>
<tr>
<td></td>
<td>vvf 870</td>
<td>No reporting for repair</td>
</tr>
<tr>
<td></td>
<td>vvf 1377</td>
<td>Leaking &gt; 20 yr</td>
</tr>
<tr>
<td></td>
<td>vvf 2739</td>
<td>Trainee</td>
</tr>
<tr>
<td></td>
<td>vvf 2809</td>
<td>Operated 1x; Trainee</td>
</tr>
<tr>
<td></td>
<td>vvf 4048</td>
<td>Operated 1x; Trainee</td>
</tr>
<tr>
<td></td>
<td>vvf 4536</td>
<td>Failed catheter</td>
</tr>
<tr>
<td></td>
<td>vvf 4661</td>
<td>CSM mortality</td>
</tr>
<tr>
<td></td>
<td>vvf 7029</td>
<td>Trainee</td>
</tr>
<tr>
<td>Kano</td>
<td>vvf 47</td>
<td>Operated 2x, leaking 10 yr</td>
</tr>
<tr>
<td></td>
<td>vvf 195</td>
<td>Trainee</td>
</tr>
<tr>
<td></td>
<td>vvf 1098</td>
<td>Trainee</td>
</tr>
<tr>
<td></td>
<td>vvf 1225</td>
<td>Trainee</td>
</tr>
<tr>
<td></td>
<td>vvf 2397</td>
<td>Trainee</td>
</tr>
</tbody>
</table>

**Short- and Long-Term Follow-up**

3 patients had also a concomitant ureter fistula; a vaginal implantation was performed in 2 and an abdominal implantation in 1, all in another operation session, with total cure of the patient.

10 patients developed a recurrence due to early sex; one patient refused operation and the other 9 were cured after another repair.

Only 4 out of the 11 patients with severe postrepair incontinence presented for incontinence surgery and were cured.

1 patient developed a U-V stricture and was cured by dilatation/urethrotomy; 1 patient developed a bladder stone which was removed with cure of the patient.
259 patients (21%) reported back whilst pregnant or after subsequent delivery; 56 developed a 2nd obstetric fistula and were all cured after repair; 7 developed a 3rd obstetric fistula and were cured by repair; and 1 patient developed a 4th obstetric fistula cured by repair.

**discussion**

All the operations have been performed by one surgeon and the trainees under his personal strict supervision under similar conditions in the 4 centers where there is reliable evidence-based postoperative follow-up till at least 6 month postoperatively; with evidence-based long-term follow-up over years; the patients operated by the trainees were all personally selected by the surgeon in a prospective manner; the results were conform the prospective predictions.

**references**

k waaldijk: obstetric fistula training; guidelines; presented at the unfpa meeting on training april 2005, niamy; reprint 2010, waha-international, paris

k waaldijk obstetric fistula surgery; art and science; basics, 2008; reprint 2010, waha-international, paris

_first edition_ december 2010

_final edition_ march 2011
training curriculum for doctors

on

(surgical) management of vesicovaginal and rectovaginal fistulas

at

Babbar Ruga National Fistula Teaching Hospital
katsina

and

Laure Fistula Center
Murtala Muhammad Specialist Hospital
kano

kees waaldijk, MD PhD
chief consultant fistula surgeon
training curriculum for doctors on (surgical) management of vesicovaginal and rectovaginal fistulas

interview
personal introduction
professional evaluation of the trainee
purpose of training
terms of training
isofs-figo-rcog training manual
handing out teaching materials
logbook

introduction
definitions and terminology
mechanism of action
combination vvf/rvf
medical consequences
social consequences
incidence
prevalence
public health problem
history/literature review

anatomy of female pelvis
bones
pelvic floor anatomy
arcus tendineus fasciae
pubocervical fascia
arcus tendineus of levator ani muscle
levator ani muscle
pubococygeus muscle
iliococygeus muscle
(ischio)coccygeus muscle
internal obturator muscle
piriformis muscle
sacrotuberal ligaments
sacrospinous ligaments
sacrouterine ligaments
greater sciatic foramen
lesser sciatic foramen
blood supply
innervation

physiology of pelvic floor structures

urine continence mechanism in the female
whole urethra + bladder neck 4-5 cm
anatomy of urethra
crucial role of pubocervical fascia as stabilizing factor
stool continence mechanism in the female
  internal sphincter: anorectum 4-5 cm
  external sphincter: sphincter ani
  perineal body as stabilizing factor

causes of vvf/rvf
  obstetric pressure necrosis + (surgical) trauma during labor
  traumatic surgery or other
  chemical
  infectious
  cancer
  radiation
  congenital

complex trauma of the obstetric fistula
  intravaginal lesions due to pressure necrosis
  vulva lesions due to pressure necrosis
  local extravaginal lesions due to immobilization or neurologic trauma
  neurologic lesions due to intrapelvic compression
  neurologic lesions due to eclampsia
  systemic lesions due to enormous trauma of prolonged obstructed labor
  systemic lesions due to blood loss
  lesions due to continuous urine leakage
  lesions due to restriction of oral fluid intake
  sex/condition of infant born

classification
  according to location most important
  according to size additional

consequences of classification
  operation technic principles
  healing as to closure
  healing as to continence

history taking
  parity
  how many alive
  duration of leakage
  onset of leakage
  home/hospital delivery
  sex/condition of infant
  menstruation
  social status
  yankan gishiri
  eclampsia
clinical examination
  general health status: nutrition, anemia
  vaginal examination without anesthesia
  anal reflex
    if negative check for saddle anesthesia
  peroneal nerve trauma: grading of drop foot 0-5
  accessibility
  vagina stenosis
  urine dermatitis
  bedsores
  atonic bladder
  preliminary classification
  can you handle it or not
  if you are not sure, refer patient to somebody more experienced

surgical classification with regards to operation technic needed
  based on anatomic/physiologic location
  type I
  type IIAa
  type IIAb
  type IIIBa
  type IIIBb
  type III

laboratory investigation
  hemoglobin and serum creatinine, if possible

x-ray investigation
  none

examination under anesthesia (eua) as separate procedure
  utterly nonsense; only a money maker for people who cannot handle vvf

immediate management of fresh obstetric fistulas
  catheter
  debridement
  cleaning
  early closure
  hematinsics
  high-protein diet
  immediate mobilization

preoperative preparation
  high-protein diet
  hematinsics
  personal hygiene
  enema
  shaving
equipment/instruments/materials
operating table
normal vaginal instruments
special instruments: sharply curved scissors, aneurysm needle
polyglycolic acid
nonabsorbable sutures
needles

anesthesia
spinal anesthesia
long acting, bupivacaine 0.5%
level of spinal tab: normal, low, high
sitting position
head flexed anteriorly/thorax always elevated
major complications
minor complications
blood pressure before/during/after operation

position on operating table
exaggerated lithotomy position
never knee-elbow position

manpower
surgeon
instrumentating theater nurse
no assistant(s): the vagina is a one-man place!
assistants are restricting the surgeon in maneuvering his instruments

route of operation
exclusively the vagina
nb abdominal approach: skin, subcutis, fascia, muscles, fascia, peritoneum, abdomen, peritoneum, bladder and then one is in the vagina; so why do not start there immediately?? what a trauma/waste of energy!

accessibility
suturing labia minora to inner thighs
episiotomies if necessary
weighted AUVRAD speculum
no retractors: one instrument inside the vagina is already a crowd! and more are hindering the surgeon in maneuvering his instruments

assessment on operating table under anesthesia
pelvis: pubic arch, AP diameter, generalized contraction etc
size of fistula in cm
location of fistula: midline, right, left
distance from external urethra opening to fistula in cm
distance from fistula to cervix/vagina vault in cm
circumferential defect: yes/no
scar tissue, texture, mobility
definite classification
make up your mind what to do exactly
make yourself comfortable/check everything before you start operating
operation technic
- check for ureters
- incision
- sharp minimal dissection/mobilization
- bladder/urethra closure: transverse/longitudinal
- static bladder capacity
- FOLEY catheter and fixation
- urethra length
- elevation of bladder neck
- vagina wall adaptation
- episiotomy closure
- no routine vagina pack
- check urine flow
- check blood pressure


detailed operation report

postoperative care
- check for vital signs for 4-6 hr
- high (oral) fluid intake
- regular check of catheter
- immediate mobilization
- urine output: colorless like clear water
- no routine use of antibiotics
- antibiotics only on indication: generalized sepsis, pneumonia
- hematinics
- personal hygiene

surgical aftercare
- removal of episiotomy sutures after 7 days
- indwelling catheter for at least 2 wk
  - if necessary (early closure) 4 wk resp. (atonic bladder) 6 wk
- catheter removal in operation theater 2-4-6 wk later
- high oral fluid intake and frequent passing of urine
- removal of nonabsorbable vagina suture 1 wk after catheter removal
- ask for leaking, incontinence and spontaneous miction
- check for healing, elevation and stress/urge incontinence
- bladder drill for incontinence

postoperative check-ups
- regularly up to 6 mth
- no sexual intercourse during this period
- continue drinking and frequent passing of urine
- ask for leaking, incontinence and spontaneous miction
- check for healing, elevation and stress/urge incontinence
- if in doubt, dye test

the dye no lie

patient counselling
- to come back at subsequent pregnancies at 3 mth amenorrhea
- to attend antenatal care regularly
- ferisolate and folic acid
- to deliver in hospital by elective cesarean section
- patient card with written instructions + operation report
documentation
extremely important for monitoring program
history
detailed operation report
check-ups
evaluation reports

prevention
no relation to tribe, religion, culture, early marriage or anything else, except for early intervention by cesarean section (cs) within 3 hours
only by establishing a functioning network of 125,000 obstetric units throughout Africa where emergency cesarean section can be performed within 3 hours of labor becoming obstructed
detection of problem patients at antenatal care (pelvic assessment); then hospital delivery
identifying problems by partogram; then early referral for cs

the emphasis is placed on how to manage vvf/rvf under African conditions.

having finished this course the candidate must have ample understanding of the complex trauma of the obstetric fistula, the obstetric fistula as a major public health problem, as well as he must be able to decide which fistulas (s)he can handle with confidence and which not

certificate only certificate of attendance will be issued

kees waaldijk, MD PhD
first edition
daugust 2011
december 1996
competency-based training manual

comments

introduction
The last 50 years I have been working in some kind of teaching/training job on a variety of issues in general and for some 40 years on surgery in special; during my 25 years of teaching/training in the obstetric fistula, there have been almost 350 doctors (from illiterate interns with in the end 800-1,000 repairs up to highly experienced surgeons/professors), over 350 nurses and... other persons in a variety of training programmes continuous on-the-job training of the doctors in 12 different centers, formal training at beginners, at advanced, at very advanced and at trainers level, and informal training programmes at workshop as an introduction; at least 15 of my trainees have performed from far over 1,000 up to over 5,000 VVF/RVF-repairs.

general remarks
The time and energy the trainer has to invest (see my logbook training February-March 2010) is far more than I ever saw in my life in the industrialized world where I spent some 12 years in a training/teaching position out of which 7.5 years as Oberarzt in der Chirurgie in full teaching hospitals in Germany with the assignment to teach the residents surgical skills and management; where is a professor in the whole world giving so intensive private training/teaching to a resident doctor in training having a trainee some 14 hours a day continuously around him and that 7 days a week. If it is 100 hours per trainee over a period of 4-6 years the trainee is very lucky; most of the training is being done by senior registrars and chefs de clinique where did I see/experience full scientific explanation of mechanism of pathology, pathophysiology, pointing out the specific traumatic lesions, teaching live anatomy of the pelvis floor, step-by-step teaching and step-by-step prognostic prediction during each and every operation of what is going to happen (and why) to the tissues involved before each step and then check if that really happened after each and every step, questions & answers during as well as after the procedure and then that followed up by lectures about the scientific background with later on extensive discussions about everything because this is how what we teach/train: not a trick but insight/understanding.

There is no time/energy : reward benefit for the trainer in the industrialized world the trainee has to contribute to the running of the medical work in the department, actually without resident doctors (being among the cheapest employees) most teaching hospitals would have to close down here the trainee does not give anything but only takes everything and benefits 100%; however, the trainer gives everything but takes only the trouble and benefits 0% as well all kinds of arrangements like visa, accommodation, transport etc have to be made.

That is not a healthy situation and the worst unbalanced contract one can get in life.
special remarks

this manual can only be implemented if a trainee comes for a minimum of 6 month to 1 year and even that period is not sufficient however, here the trainer is expected to train/teach the trainee the noble art and science of obstetric fistula management within 4-6 weeks under rather primitive conditions; though in the industrialized world postgraduate training in urogynecology will take a minimum of 4 years after having been trained as a gynaecologist, urologist or surgeon for a period of 4-6 years under optimal conditions

introduction
no comments

purpose of the course
a holistic care is a utopia (even in the industrialized world) and invented by verbal surgeons who can only diagnose the fistula by the smell of urine; it may work for fund raising; however, i still have to see the first patient healed by verbal rhetoric
the best way to treat the whole patient is by closing the fistula; that is why the patient comes to the surgeon since that is his profession; his responsibility is to perform his surgery to the best of his knowledge, expertise and skills out of compassion with the suffering of the patient
do not shift responsibilities towards the surgeon which are out of his profession even if it turn out she has become ‘incurable’ in the end the patient is responsible for her life and certainly not the surgeon rehabilitation means one teaches the patient how to take care of her life herself and not to make her dependent upon others for the rest of her life

target groups
though i always propagate the whole team (surgeon, theatre nurse, anesthetic nurse and 2 pre- and postoperative nurses) should be trained, this hardly happens and only the surgeon comes for training though there is enough money available this manual only deals with surgeons

training and facilitation
no comment

performance assessment
besides all the clinical teaching it will be an enormous additional stress for the trainers to fill up all types of assessment forms and writing an appraisal throughout the training period and at the end

learning and assessment support

course timetable and checklist
it is very good for the trainee to write down everything (s)he sees and does during the period of training; in the end it can be discussed with and signed by the trainer

learning session

<table>
<thead>
<tr>
<th>lectures</th>
<th>ok</th>
</tr>
</thead>
<tbody>
<tr>
<td>group work</td>
<td>how if the surgeon comes alone</td>
</tr>
<tr>
<td>bedside teaching</td>
<td>ok</td>
</tr>
<tr>
<td>team discussion</td>
<td>how if there is no team</td>
</tr>
<tr>
<td>video learning sessions</td>
<td>the problem: it is 2D for a 3D situation</td>
</tr>
</tbody>
</table>
role play session is the daily reality not sufficient; why make a reality into an artificial role play; there is so much to do; so do not waste valuable time
demonstration/participation ok; explicit demonstration of the actual obstetric lesions and how to deal with them, theoretically and practically including pre-, intra- and postoperative care
field visits in our program the surgical trainee will see multiple centers with different set-up; however, this does not mean that we are going to visit patients in the field; anybody can do that at his/her own convenience but do not waste my valuable time
live demonstration is that not double; see demonstration + participation perform surgery up to a certain extent; i do not belief in the hands-on approach unless it has been preceded by extensive teaching of the theoretical and practical background of the obstetric trauma; it does not make sense to learn a trick since it takes a life time to become an expert fistula surgeon
reflective log keeping very valuable

appraisals that is ok but another stress upon the trainer though in a training period of 4-6 weeks this can only be done half-way and at the very end
reflective learning that should be done by any doctor right from the beginning to the very end of his professional career

personal development planning that is a continuous process throughout life

logbook

logbook of competence depending upon previous educational/experience level for interns without any experience whatsoever for general doctors with 3 years of surgical experience for consultant gynaecologists/surgeons/urologist as introduction for advanced level when the trainee has performed 100-150 repairs personally for trainer level when the trainee has performed some 500 repairs personally for very advanced level for certain specific problems

observation first one must understand the obstetric trauma in relation to that specific fistula, then the resulting tissue loss and then how to reconstruct the functional anatomy

direct supervision no comment

independent practice the more experienced the surgeon, the better he is aware of his own responsibilities the responsibility of the trainer is only to teach the trainee to the best of his knowledge, experience and skills however, the trainer is not responsible for what the trainee does afterwards what the trainee does afterwards is his/her sole responsibility
logbook of experience
that is fine

assessments

OSATS
do not shift responsibilities to the trainer which are not his
the surgical skills, attitude etc etc of the trainee must have been assessed in depth
during his/her consultancy training over 4-6 years
is the trainer now (after 4-5 weeks) to tell the trainee he is not fit (though he passed
4-6 years of training somewhere else); how often is this happening in the industria-
ized world; do you know how sensitive consultants are about their skills??
since it is in writing another extra stress upon the trainer
how to assess the interaction with the team if the surgeon comes without his own
team in a totally strange situation; is a top sportsman travelling and performing well
without his own team
interpersonal skills vary from person to person and there are more roads leading to
rome; we should restrict ourselves to the complex trauma of the obstetric fistula and
the surgical skills/management

mini-clinical assessment
another 20?/-min extra stress upon the trainer and then another 30 min to discuss it
with the trainee and that after each clinical encounter (during the 50-day period
February-march 2010 there were some 400 clinical encounters with 225 surgical
procedures; that would mean 400 x 50 min = 20,000 min = 333.3 hours of
assessment)

case-based discussion
questions & answers is the norm during and after all our surgical and other proce-
dures whereby the stress is again solely upon the trainer
if the discussion now should be disclosed to the patient and written down in the
notes how much time will be left for the only relevant important thing: closure of
the fistula

for your information
each and every patient in our program is treated with all dignity and her full rights,
informed about her condition, is asked if she agrees with examination, operation etc
(if not which happens rarely, she is/will not be examined/operated), she is given time
if necessary to make a difficult decision and right from the beginning up till her last
follow-up she receives extensive repeat health education
out of compassion we do everything in our power, and that is a lot, to restore her
health and her dignity so she can lead a normal life whatever that may be

for your understanding
it is not my duty (as the verbal surgeons do tell us) to train/teach other surgeons;
out of myself i have been doing this for the last 25 years, already when no one was
interested in the obstetric fistula; now it has become very sexy
accreditation
this should be done by isofs since only they have the real professional expertise; and isofs has a committee specially designed for this purpose

i have been trying to follow this manual step-by-step but found it too time consuming besides all the other things i have to do; it is not feasible in short-course training; but i will use it completely in full-course training, e.g. the young nigerian doctor currently under continuous training in babbar ruga national fistula teaching hospital

so in the future i will use this as a comprehensive guideline with all the trainees at whatever level

since everybody takes it for granted that the trainee profits 100% and the trainer only 0% i would like raise the question: how much is the trainer worth?

since i do not like hypocrisy i would like to close with a quote about ethics from a greek philosopher (Plato or Socrates) some 400 years BC

an ethical person behaves ethically whilst an unethical person will bend the rules

kees waaldijk MD PhD
chief consultant surgeon

april 2010
obstetric fistula surgery training

multiple choice questionnaire

kees waaldijk, MD PhD

chief consultant fistula surgeon
obstetric fistula surgery training

multiple choice questionnaire
for
self-evaluation by trainee

the trainee should fill out this questionnaire at the beginning of the training
and again at the end
so (s)he can evaluate his/her progress him/herself

kees waaldijk, MD PhD
chief consultant fistula surgeon

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first edition september 1996
last edition august 2011
questionnaire I

any of the answers given might be correct or incorrect
cross the right answer(s)
read it carefully since some questions/answers are tricky

001 a fistula is a(n):
  infection
  malignant disease
  genetic/hereditary disorder
  abnormal connection between two organs
  abnormal connection between an organ and the outside (skin)
  congenital malformation

002 a fistula can be caused by:
  infection
  trauma
  malignant disease
  radiation
  prolonged obstructed labor
  congenital

003 VesicoVaginal Fistula (= VVF) is an:
  abnormal connection between the bladder and the vagina
  abnormal connection between the rectum and the vagina
  abnormal connection between the bladder and the rectum
  abnormal connection between the uterus and the rectum
  abnormal connection between the bladder and the skin
  abnormal connection between the rectum and the skin

004 RectoVaginal Fistula (= RVF) is an:
  abnormal connection between the bladder and the vagina
  abnormal connection between the rectum and the vagina
  abnormal connection between the bladder and the rectum
  abnormal connection between the uterus and the rectum
  abnormal connection between the bladder and the skin
  abnormal connection between the rectum and the skin

005 obstetric fistula is a:
  fistula caused by advanced cervix cancer
  fistula caused by advanced bladder cancer
  fistula caused by advanced rectum cancer
  fistula developed during/after labor
  fistula developed during/after total abdominal hysterectomy
  fistula caused by LymphoGranuloma Venereum (= LGV)
real cause of the obstetric fistula is:
- early marriage
- early pregnancy
- early delivery
- sociocultural practices
- prolonged obstructed labor
- yankan gishiri

mechanism of action of the obstetric fistula is:
- infection
- pressure necrosis
- instrumentation
- yankan gishiri
- radiation

the incidence of the obstetric fistula in situations where there is no access to proper antenatal/obstetric care and the mother survives is:
- roughly 5% (5 out of 100) of those deliveries
- roughly 2% (2 out of 100) of those deliveries
- roughly 1% (1 out of 100) of those deliveries
- roughly 0.5% (5 out of 1,000) of those deliveries
- roughly 0.2% (2 out of 1,000) of those deliveries
- roughly 0.1% (1 out of 1,000) of those deliveries

there is no obstetric fistula in the industrialized world because:
- the minimum legal age at marriage is 16 or 18 yrs
- there is no early sex and so no early pregnancy with early delivery
- there is good antenatal care
- there is proper obstetric care
- there is no obstructed labor
- there is no cephalopelvic disproportion

if the bladder is prolapsing through the fistula it is normally:
- the bladder roof falling down due to gravity
- the bladder body prolapsing
- the bladder base prolapsing
- bladder roof/bladder body/bladder base combined

fistula with a circumferential defect type IIAb means:
- no connection between bladder and pubic symphysis
- no connection between urethra and pubic symphysis
- no connection between bladder and vagina
- no connection between urethra and vagina
- no connection between bladder and urethra
- no connection between bladder and cervix
prolonged obstructed labor may also cause the following:
- amenorrhea
- drop foot
- vagina stenosis
- loss of pubococcygeus muscle
- loss of cervix
- urine dermatitis of vulva
- loss of labia majora
- loss of labia minora
- loss of clitoris

obstetric fistula amenorrhea is considered to be:
- physiologic during the first 6 months
- borderline from 7 to 12 months
- pathologic after 1 year

one year following the occurrence of the obstetric fistula:
- the majority of patients do not menstruate
- the majority of patients do menstruate

the incidence of obstetric fistula amenorrhea after one year is:
- > 85%
- 75%
- 50%
- 25%
- ≤ 15%

foot drop is caused by trauma to the sensory fibers of the:
- radial nerve
- sciatic nerve
- peroneal nerve
- ulnar nerve
- optic nerve

foot drop is caused by trauma to the motor fibers of the:
- radial nerve
- sciatic nerve
- peroneal nerve
- ulnar nerve
- optic nerve

in foot drop the following is affected:
- plantiflexion of the foot
- inversion of the foot
- dorsiflexion of the foot
- eversion of the foot
in fully developed foot drop the foot is in:
- dorsiflexion_eversion
- dorsiflexion_inversion
- plantiflexion_eversion
- plantiflexion_inversion

postpartum foot drop is caused by trauma to:
- the intrapelvic plexus due to pressure of the hard fetal skull
- the sciatic nerve at pelvis outlet due to stretching
- the peroneal nerve at the fibula head due to direct pressure
- the peroneal nerve at ankle level

The incidence of foot drop in obstetric fistula immediately post partum is:
- over 80%
- 75%
- 60%
- 40%
- 25%
- less than 20%

in grading drop foot according to the Medical Research Center (MRC) scale:
- 0 = full function/force and .. 5 = no function whatsoever
- 0 = no function whatsoever and .. 5 = full function/force

with time the postpartum drop foot will:
- improve in most patients
- deteriorate in most patients
- stay stationary in most patients
- recover completely in all patients

urine (ammonia) dermatitis of the vulva:
- is a sign of the fistula
- should be treated before any repair is undertaken
- disappears spontaneously after a successful repair

by treating the urine dermatitis before any repair:
- one treats a symptom and delays the real thing
- one treats the cause and does the right thing
- one shows insight in the problems
- one has not got a single clue of the problems

postpartum urine leakage is mostly due to:
- severe stress incontinence
- fistula
- atonic bladder
- outflow obstruction
true urine incontinence means incontinence due to:
- stress
- overflow
- obstruction
- fistula
- urge

bladder capacity is increased in:
- fistula
- stress incontinence
- urge incontinence
- overflow incontinence due to atonic bladder
- overflow incontinence due to outflow obstruction

bladder capacity is decreased in:
- fistula
- stress incontinence
- urge incontinence
- overflow incontinence due to atonic bladder
- overflow incontinence due to outflow obstruction

if a patient develops postpartum urine leakage:
- she should be sent home and told to come back after 3 months then after 3 months a repair should be undertaken
- a FOLEY catheter should be inserted immediately for 4-6 weeks
- a repair should be done immediately
- the necrotic area should be excised immediately
- wait for slough to develop and then excise it
- few days after this debridement a repair should be done
- a repair should be done if the fistula edge is clean

if a patient develops an obstetric fistula:
- antibiotics should always be given
- antibiotics should never be given
- antibiotics should only be given on strict (non-fistula) indication, e.g. puerperal sepsis
- high (oral) fluid intake should be started immediately

giving antibiotics immediately seems:
- logical because the fistula is caused by infection
- illogical because the fistula is caused by infection
- logical because the fistula is not caused by infection
- illogical because the fistula is not caused by infection
- logical because the fistula is caused by pressure necrosis
- illogical because the fistula is caused by pressure necrosis
033 examination under anesthesia (= EUA) as a separate procedure (is):
a sign that the doctor is highly experienced
necessary before any repair can be undertaken
utterly nonsense
a money-maker for the doctor
robs the patient of her money
should be recommended to any doctor dealing with VVF

034 EUA should be done always:
immediately after labor
3 months after labor
at the beginning of any repair
3 months after repair
before permission is given to start sexual intercourse after repair

035 the preferable route for VVF-repair is:
vaginally
abdominally
vaginally and abdominally
vaginally and abdominally and retroperitoneally

036 in the order stated above in question 35:
invagination decreases
invagination increases
direct access to fistula decreases
direct access to fistula increases
operation time decreases
operation time increases
chances of postoperative infection decreases
chances of postoperative infection increases
operative trauma decreases
operative trauma increases

037 the preferable route for RVF-repair is:
vaginally
abdominally
vaginally and abdominally
vaginally and abdominally and retroperitoneally
colostomy only

038 the preferable anesthesia for VVF/RVF-repair is:
inhalation anesthesia with endotracheal intubation
infiltration anesthesia by local anesthetics
short-acting regional anesthesia: spinal anesthesia by xylocaine
long-acting regional anesthesia: spinal anesthesia by bupivacaine
dissociative anesthesia by ketamine
the preferable position for VVF/RVF-repair is:
- lithotomy position
- R sided lithotomy position
- L sided lithotomy position
- knee-elbow position
- L sided knee-elbow position
- R sided knee-elbow position
- exaggerated lithotomy position
- R sided exaggerated lithotomy position
- L sided exaggerated lithotomy position
- flat on the operating table

the number of "sterile" persons required in vaginal repair are:
- instrumentating operation nurse only
- surgeon only
- surgeon and operation nurse
- surgeon, assistant at R side and operation nurse
- surgeon, assistant at L side and operation nurse
- surgeon, assistant at R side, assistant at L side and operation nurse

access to the operation field is obtained by:
- traction by the assistant(s)
- AUVArd speculum
- liberal use of episiotomies
- knee-elbow position

normally in VVF-repair the closure is as follows:
- bladder/urethra transversely and anterior vagina wall longitudinally
- bladder/urethra longitudinally and anterior vagina wall transversely
- bladder/urethra and anterior vagina wall both transversely
- bladder/urethra and anterior vagina wall both longitudinally
- bladder/urethra and anterior vagina wall both obliquely

yankan gishiri fistula mostly involves:
- bladder base
- bladder neck
- urethra
- bladder roof

yankan gishiri is responsible for:
- > 40% of all fistulas
- 30%
- 20%
- 15%
- 10%
- ≤ 5%
045 yankan gishiri is responsible for:
   > 20% of the obstetric fistulas
   15%
   10%
   5%
   2%
   ≤ 1%

046 following VVF-repair a FOLEY catheter is inserted because:
   this prevents infection
   this decompresses the bladder
   this allows urine output to be measured
   this is easier for the patient than to urinate herself

047 the FOLEY catheter should stay in for a minimum period of:
   5 days
   10 days
   2 weeks
   4 weeks
   6 weeks

048 high (oral) fluid intake is urged since:
   it is nice to drink
   it will speed up healing
   it will prevent ascending infection
   antibiotics will penetrate better into the tissue
   it will prevent blockage of catheter
   it will dilute the urine

049 the minimum amount of (oral) fluids per 24 hours is:
   ≤ 500 ml
   1,000-1,500 ml
   2,000-3,000 ml
   5,000-6,000 ml
   8,000-9,000 ml
   ≥ 10,000 ml

050 stool pollution of the operation field is dealt with by:
   antibiotics
   meticulous closure of everything
   meticulous closure of bladder/rectum with half-open closure of anterior/posterior vagina wall
   dilution by large amounts of clean water
   applying disinfectants only
   immediate termination of procedure
a longitudinal incision into the anterior vagina wall
is recommended since all gynecologists use it in elective procedures
is physiologic
respects the natural forces in the body
is surgical malpractice

a transverse/semicircular incision into the anterior vagina wall
is not recommended since gynecologists do not use it
is physiologic
respects the natural forces in the body
is sound surgical practice

wide flap-splitting dissection
necessary; otherwise fistula cannot be closed surgically
contributes to continence
unnecessary additional trauma
is in line with general surgical principles

ureter catheterization
a must in every fistula repair
only in certain situations
never
a must in ureter re-implantation for ureter fistulas type III

function of ureter catheterization
promotes dissection
promotes closure
promotes healing
promotes continence
prevents total ligation of the catheterized ureter
facilitates identifying iatrogenic intraoperative ureter trauma

the real purpose of a suture is

to promote healing
to promote continence
to heal tissue
to adapt tissue only
to close a defect meticulously

the preferable direction of bladder closure in type I
longitudinal
transverse
oblique
circumferential
no preference
058 the preferable direction of bladder/urethra closure in type II\text{Aa}
longitudinal
transverse
oblique
circumferential
no preference

059 the preferable direction of bladder/urethra closure in type II\text{Ab}
longitudinal
transverse
oblique
circumferential
no preference

060 the preferable direction of bladder/urethra closure in type II\text{Ba}
longitudinal
transverse
oblique
circumferential
no preference

061 the preferable direction of bladder/urethra closure in type II\text{Bb}
longitudinal
transverse
oblique
circumferential
no preference

062 the preferable direction of anterior vagina wall closure
longitudinal
transverse
oblique
circumferential
no preference

063 closure of the anterior vagina wall
meticulous closure
adaptation only
leaving it completely open

064 grafting by labial fibrofatty pad, pubococcygeus muscle sling etc
contributes to healing
contributes to continence
function doubtful
non-physiologic procedure with additional trauma
critical minimum urethra length for continence
- 0.5 cm
- 1.0 cm
- 1.5 cm
- 2.0 cm
- 2.5 cm
- 3.0 cm
- 3.5 cm
- 4.0 cm

pubocervical fascia contributes to urine continence since it consists of striated muscle tissue stabilizes the cervix in its anatomic position stabilizes the anterior urethra in its anatomic position stabilizes the anterior bladder in its anatomic position stabilizes the posterior urethra in its anatomic position it contracts on demand and then compresses the urethra

in genuine intrinsic-stress incontinence one finds intact pubocervical fascia transverse defect in the pubocervical fascia median defect in the pubocervical fascia lateral defect in the pubocervical fascia combined transverse/median/lateral defect in the pubocervical fascia

contribution of external sphincter ani muscle to stool continence
- 0%
- 10%
- 50%
- 90%
- 100%

contribution of internal sphincter ani (= anorectum) to stool continence
- 0%
- 10%
- 50%
- 90%
- 100%

perineal body contributes to stool continence mechanism since it consists of connective tissue since it contracts and then compresses the anorectum stabilizes the vulva in its anatomic position and shape stabilizes the anterior anus/anorectum in its anatomic position stabilizes the posterior anus/anorectum in its anatomic position
069 repair of fresh sphincter ani rupture
simple so for anybody
needs little experience so for the young resident doctor
needs some experience so for the senior registrar
complicated surgery so only for the expert surgeon
colostomy necessary and as such recommended
just a couple of perineum sutures since perineal tear
concentrate on anorectum
concentrate on sphincter ani muscle
concentrate on perineal body
need for anterior levator ani muscle plasty
need for gracilis muscle graft

070 repair of old (or unsuccessful repair of) sphincter ani rupture
needs some experience so for senior registrar
complicated surgery so only for the expert surgeon
colostomy necessary and as such recommended
need for anterior levator ani muscle plasty
need for gracilis muscle graft

last obstetric fistula surgery
simple so anybody can handle the obstetric fistula
needs some experience so anybody after 2-3 weeks of training
not so simple so doctor needs at least 3 yr of surgical experience
very complicated so for expert surgeons after intensive postgraduate training
questionnaire II

true/false statements
circle the right answer
read it carefully as some of the questions/answers are tricky

the obstetric fistula is caused by pressure necrosis due to prolonged obstructed labor true/false

during obstructed labor the soft tissues (vagina wall and bladder) are being compressed between the hard fetal skull and the hard posterior maternal symphysis true/false

the cause of obstetric fistula is early marriage/pregnancy true/false

the obstetric fistula will disappear if the minimum legal age for marriage of the woman is set at 18 yr true/false

examination under anesthesia as a separate procedure (EUA) is utterly nonsense and a money maker for the doctor true/false

lymphogranuloma venereum (LGV) is an infection affecting the vulva and can cause VVF true/false

it is possible for small fistulas to heal spontaneously before there is any cross-union between the bladder mucosa and the vagina mucosa true/false

early closure within the first 3 months gives worse results than closure after 3 months true/false

in small fistulas bladder drainage by indwelling FOLEY catheter will heal at least 50% of the patients and is highy recommended true/false

any urine leakage post partum is caused by a fistula true/false

minute fistulas are ideal for surgical trainees to start with true/false

if there is urine (ammonia) dermatitis of the vulva, it should not be treated but a repair performed as soon as possible true/false

fistulas with bladder prolapse are inoperable true/false

colostomy is the solution for RVF true/false
by the time the patient is fixed in the knee-elbow position the operation in the exaggerated lithotomy position is already finished  true/false

in fistulas with circumferential defect the knee-elbow or knee-chest position is needed as the whole procedure becomes less complicated  true/false

by performing only a colostomy the stool is diverted through to an abnormal opening in the abdomen (and occasionally still through the vagina) which is a tremendous relief to the RVF patient  true/false

the grading of drop foot according to the Medical Research Center scale is partially objective by a subjective person  true/false

on the MRC scale grade 4 means full range of movement but diminished muscle strength  true/false

in fully developed postpartum atonic bladder the patient complains of only leaking whilst standing/walking but not whilst lying down  true/false

in stress incontinence the bladder capacity is decreased  true/false

yankan gishiri is responsible for 12% of all fistulas  true/false

yankan gishiri is responsible for 12% of obstetric fistulas  true/false

from the patient's point of view and socially the VVF is more embarrassing than the RVF  true/false

grafting is better than or equal to reconstruction of functional anatomy  true/false

the external sphincter ani is innervated by the pudendal nerve  true/false

the internal sphincter ani is innervated by the pudendal nerve  true/false

stress incontinence is always associated with intrinsic incontinence  true/false

the sling operation is a physiologic solution for postrepair incontinence  true/false

the pubococcygeus muscle sling is a physiologic solution for prevention of postrepair incontinence  true/false
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Kano State Government for their personnel support

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ISOFS for developing the training manual

FIGO for developing the training manual

RCOG for developing the training manual

last of all, each and every staff of Babbar Ruga National Fistula Teaching Hospital and Laure Fistula Center since it is team work that counts