National VVF Project Nigeria

evaluation report XXIX

2012

state of the art surgery

evidence based results

ground breaking research

peer reviewed science

complete documentation

long-term follow-up

active physiotherapy by mobilization

kees waaldijk MD PhD

chief consultant fistula surgeon

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babbar ruga national fistual teaching hospital
katsina
n i g e r i a

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evaluation report XXIX

2012

Nigeria

Ebonyi State University Teaching Hospital
ABAKALIKI

Special VVF Center
B/KEBBI

Faridat Yakubu VVF Hospital
GUSAU

General Hospitals
HADEJIA - JAHUN

Laure Fistula Center
KANO

Babbar Ruga Fistula Hospital
KATSINA

Federal Medical Center
NGURU

Maryam Abacha Hospital
SOKOTO

Kofan Gayan Hospital
ZARIA

République du Niger

Centre Hospitalier Départemental
MARADI

Hôpital National
NIAMEY

Maternité Tassigui
TAHOUA

Maternité Centrale
ZINDER

kees waaldijk MD PhD

simple solutions are the best
only how to find them

it takes enormous expertise to determine
what is “simple”

only an expert (fistula) surgeon is able
to perform “simple” (fistula) surgery

there are no simple fistulas

it only looks simple in the hands of the
few highly experienced fistula surgeons

half knowledge is extremely dangerous

one repair by an incompetent surgeon
may change the prospect of the fistula

from operable into inoperable
with devastating life-long consequences
for the patient

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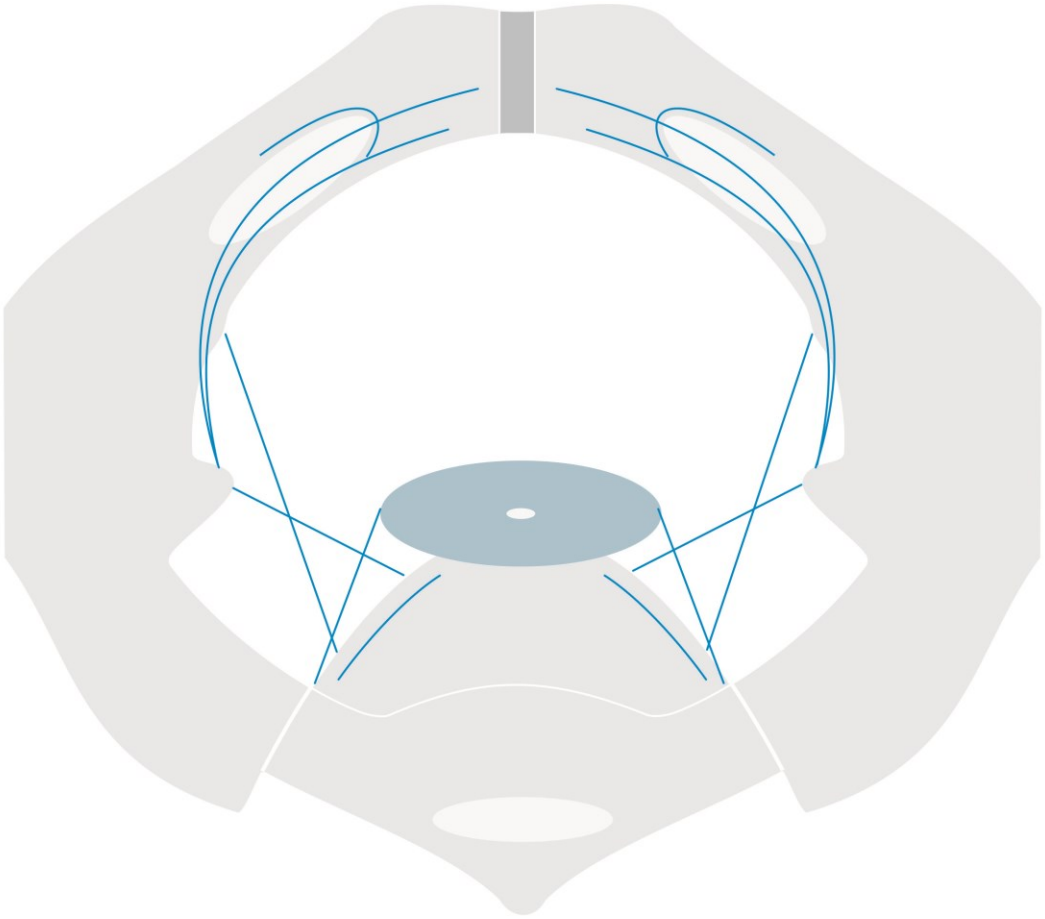


pelvis floor anatomy II

foreword

documentation and reporting by professionals about their work are essential tools in assessing and evaluating processes and projects

this report is no 29 in a series of consecutive annual reports since the author started his obstetric fistula work from scrap in 1983

it gives an impression of what has been done during the year 2012 in terms of (surgical) management of the obstetric trauma with evidence-based results, in terms of training, in terms of research etc

besides this, it gives the overall figures for the 29-year period 1983-2012

the enormous amount of patients treated we passed the 40,000 mark and the rare complete documentation of everything combined with excellent evidence-based results in long-term follow-up gives this project the authority to tell sensible things about the obstetric trauma and its (surgical) management, teaching and training, setting up vvf-repair and vvf-training centers etc

since there were no textbooks or explicit guidelines when the author started he had to find out things for himself; however, sticking to the basic principles of (reconstructive) surgery and using common sense proved to be the way forward

the better one is able to reconstruct the functional pelvis anatomy with minimum efforts the higher the chance of healing and of continence (under physiologic stress) to create the optimum for complete recovery of the obstetric fistula patient into a normal woman with intact physical, reproductive and mental health in her own society

systematic clinical examination and research brought a wealth of insight into the pelvis anatomy, pelvis physiology, urine continence mechanism, stool continence mechanisms and the pathophysiology of the obstetric trauma

based upon this research a classification was developed with operation principles and techniques for each and every fistula type with prospective prediction of the results

the best contribution was the immediate management by catheter and/or early closure with prevention of the woman from becoming an outcast

the author is in the process of updating, editing and anonymizing all his 23,000 operations reports with follow-ups (more than 250 parameters per patient) to “publish” it on-line as public domain so anybody who is interested can study and analyze it with reference to these archives

the author

the (surgical) management of the obstetric fistula has to start the moment the leaking of urine becomes manifest

no need to become an outcast

the immediate management by catheter and/or early closure is highly successful and will prevent the woman from becoming an outcast

the best way to treat the whole patient is by closing the fistula

do not waste time, energy and money on things which make no sense
concentrate on the most important thing: close the fistula

previous repairs, scar tissue, vagina strictures etc
do not influence the outcome of surgery

only surgical principles and surgical techniques with

the surgeon being the decisive factor

in der beschränkung zeigt sich der meister

the minimum has to be done to the best of knowledge, experience, skills and conscience

executive summary

since the obstetric fistula is one component of the **whole complex obstetric trauma** the attention shifted to reconstruct the obstetric trauma in all its aspects whereby the fistula is closed with superior results as to closure and continence

and we extended our reconstructive surgery for all obstetric trauma including the obstetric fistula, intrinsic incontinence, total 3° cervix prolapse etc

the security situation in northern Nigeria deteriorated which had a negative effect upon our functioning; the chief consultant could not visit kano on a regular base; abduction, bomb blasts and killing from motorbikes made it very unsafe; and the training almost came to a full stop

at the 54th national health council of Nigeria babbar ruga hospital was nominated as the national fistula hospital for treatment, training, research and documentation; however, the handing over of the center from katsina state government towards the federal government is still being in process

babbar ruga national fistula teaching hospital was accredited by figo as an international obstetric fistula training center

during the year a total of 2,345 VVF/RVF-repairs were performed in the project making **a grand total of 39,430 repairs**

if we add the 170 cs-operations in previous healed fistula patients performed in kofan gayan hospital zaria and another 1,323 conservative procedures (fully documented) then we come to

40,923 procedures in 29 years

during the year a total of 12 doctors attended our workshop training programs along the guidelines of the global competency-based international manual making **a grand total of 818 trainees: 387 doctors, 360 nurses/ midwives and 71 other persons**

during the year 8 workshops were executed making **a grand total of 54 workshops**

the **strength of the program** is that everything is **evidence based in consecutive order (nobody/nothing left out)** by meticulous documentation, extensive database, prospective research, individual follow-up over years and consequent analysis of the results according to scientific parameters

the whole project is government owned; as such 95% is being financed by the respective state governments and by the federal government

however, this is not enough and we were happy with additional sponsoring by usaid fistula care

it has to be stressed that these achievements are only due to **teamwork** and the **combined efforts** by all the doctors, nurses and other personnel in all the centers

evaluation report XXVIII

introduction
the obstetric fistula is as old as mankind and constitutes a social disaster of the highest order; due to the continuous urine leakage with offensive smell these patients are ostracized from their own community if nothing is done and loose all dignity, as a woman and as a human being, with progressive downgrading medically, socially, emotionally and mentally
the variety of the complex trauma of the obstetric fistula is enormous: from a minute fistula with minimal tissue loss to a cloaca in an empty pelvis with extensive intravaginal lesions and (sub)total loss of all the intrapelvic tissues, extravaginal lesions, urine-induced lesions, neu-rologic lesions and systemic lesions
the only rehabilitation into society is by **successful closure** of the fistula; however, this is not simple considering the extent and the immense variety of the trauma
though prevention of the obstetric fistula is not possible for another century, **prevention of the social disaster** is very well feasible by the **immediate management** by catheter and/or early closure; **no need to become an outcast**
this VVF Project aims to have an impact by providing a VVF-repair service, by establishing VVF centers, by training all kinds of doctors, nurses and paramedical personnel and by providing training materials with the emphasis on keeping it simple, safe, effective, feasible, sustainable and payable under African conditions

philosophy of the project
to provide a professional service concentrating upon the immediate (surgical) management of the obstetric fistula patient
to bring the service towards the patients which means multiple “small” repair centers within their own community throughout Africa and not a single white elephant in the capital
to work for or in close collaboration with the government in order to have an impact upon the obstetric fistula as a major public health problem
to ensure optimal comprehensive care: repairs by the surgeon and rehabilitation if needed by the social workers in close cooperation
to concentrate on the repairable fistulas and especially on the immediate management as a priority considering the scarcity of human resources, finances and available infrastructure
to make a clear statement during the whole management process about further surgical inter ventions; it does not make sense to operate forever on the incurable patients
to demarcate the responsibilities: once the surgeon has done his job <closure of the fistula to the best of his knowledge, conscience and expertise> in the end it is the patient herself who is responsible for her life; the surgeon is just the surgeon, nothing more; and the surgery alone consumes all his energy

long-term objectives
to establish a lasting VVF service with ultimately the total eradication of the obstetric fistula, first in Nigeria but later on also in the rest of Africa and the whole world
to keep the existing expertise available for present and future fistula surgeons

short-term objectives
to further upgrade the repair and training services in the existing centers and to start new centers; <u>masterplan:</u> to establish a VVF-repair center in each of the 36 states of

Nigeria and to have a VVF-training center in each of the 6 geopolitical zones of Nigeria; with a population of at least 170 million people
to train doctors, nurses and other health personnel in the complicated (surgical) management of the obstetric fistula
to produce training materials and surgical handbooks with in-depth description of anatomic tissue losses, classification of vvf and rvf, description of continence mechanisms, immediate management, step-by-step operation techniques of fistula and (postrepair) intrinsic/stress incontinence etc
to conduct clinical scientific research, to establish a comprehensive database and to prepare evidence-based scientific articles

achievements

individual VVF-repair centers
no new centers were added to the existing ones; since we cannot influence politics we have to wait for the individual states to take the initiative

activities

surgery
over the year a total of 2,345 procedures were performed in the 12 different centers making a
grand total of 39,340 operations: 35,848 VVF-repairs and 3,582 RVF-repairs
if we add the 170 cs-operations in healed previous patients and another 1,323 conservative (fully documented) procedures we come to **40,923 procedures during 29 years**

postgraduate training
due to security reasons 12 doctors were trained only at our workshops making a
grand total of 818 persons: 387 doctors, 360 nurses and 71 other persons

workshops
the consultant surgeon + team participated in 8 workshops in abakaliki (fistula care funded), nguru, sokoto (fistula care), maradi (unfpa funded) and zinder (unfpa) making
grand total of 54 workshops

research
this is a continuous process; the intention was, is and will be to make complicated things simple, safe, effective, feasible, sustainable and payable under African conditions sticking to reconstructive surgical principles
and we were able to develop **evidence-based solutions for each and every problem**
our best contribution is the **immediate management** by catheter and/or early closure preven ting the woman from becoming an outcast
the scientific classification of vvf/rvf becomes ever-more valuable the longer we use it

database, documentation and science
a comprehensive database has been developed where the chief consultant has entered his personal obstetric fistula experience consecutively from the very first to the last patient with up to 256 parameters per patient
the chief consultant finished with updating his electronic operation reports by drawings and all postoperative check-ups/results

now all of it has to be **anonymized** in order to place everything on-line on the web for everybody to make his own analysis and conclusions

state-of-the-art surgery
each fistula needs its own specific customized approach as based on a careful assessment of the qualitative and quantitative amount of tissue loss: a combination of science and art
based upon a scientific classification state-of-the-art operation principles and techniques have been developed for each type with **evidence-based prognosis** as to healing and continence

export of expertise to the industrialized world
it is high time to export our evidence-based experience to the industrialized world

funding
basically the project is funded by the Federal Government and by the individual State Govern ments but this is not sufficient
further support came from Fistula Care, unfpa and family care educational
special thanks to the First Lady of Katsina State for her sincere commitment to the poor fistula women.

strength of the project
its **rare meticulous evidence-based complete documentation** by individual electronic systematic examination and operation reports, electronic database with almost 4,000,000 entries, real prospective research, more than 150,000 digital and other photographs, some 50 hours of digital video takes of operation techniques, long-term follow-up over years, real scientific classification and 28 annual reports etc etc **for the whole world to see**

conclusion
despite the security situation in northern Nigeria we were able to continue and solidate our obstetric fistula work up to a certain extent

prevention
why are the major aid organizations, the governments and the general public **not** interested in establishing a network of functioning obstetric units ???

kees waaldijk MD PhD
chief consultant surgeon
31st of December 2012

fistula surgery 1984-2012

	ebonyi		jigawa		kaduna		kano		katsina		kebbi		sokoto		zamfara		yobe		rép niger		
	vvf	rvf	vvf	rvf	vvf	rvf	vvf	rvf	vvf	rvf	vvf	rvf	vvf	rvf	vvf	rvf	vvf	rvf	vvf	rvf	**total**
1984	-		-		-		-		83	6	-		-		-		-		-		89
1985	-		-		-		-		196	20	-		-		-		-		-		216
1986	-		-		-		-		260	18	-		-		-		-		-		278
1987	-		-		-		-		318	7	-		-		-		-		-		325
1988	-		-		-		-		353	31	-		-		-		-		-		384
1989	-		-		-		-		464	21	-		-		-		-		-		485
1990	-		-		-		222	25	416	29	-		-		-		-		-		692
1991	-		-		-		248	17	195	4	-		-		-		-		-		464
1992	-		-		-		348	27	529	34	-		-		-		-		-		938
1993	-		-		-		416	35	488	62	-		-		-		-		-		1,001
1994	-		-		-		373	43	496	45	-		42	-	-		-		-		999
1995	-		-		-		373	51	537	51	-		161	11	-		-		-		1,184
1996	-		86	-	-		311	37	562	60	41	-	98	5	-		-		66	2	1,268
1997	-		211	4	-		295	38	513	55	107	2	181	14	-		-		33	2	1,455
1998	-		185	5	42	4	278	28	416	60	37	4	288	34	30	6	-		43	4	1,464
1999	-		30	3	37	3	280	36	441	62	80	5	238	12	64	3	-		49	2	1,345
2000	-		204	7	102	7	283	41	420	60	108	4	134	16	102	5	-		69	7	1,569
2001	-		320	27	80	1	415	41	515	55	98	4	157	9	65	5	-		74	5	1,871
2002	-		383	26	44	2	464	49	453	41	113	3	144	7	42	3	-		82	3	1,859
2003	48	5	245	15	39	1	376	52	475	51	96	4	151	7	35	4	-		56	3	1,663
2004	24	2	159	17	59	5	410	33	496	64	65	2	119	6	22	-	-		115	8	1,606
2005	12	-	117	9	31	4	507	39	525	47	208	5	303	22	145	3	-		79	6	2,062
2006	10	2	5	-	65	19	368	91	508	83	156	5	176	17	147	2	-		161	8	1,823
2007	11	1	61	3	114	4	510	97	602	117	170	6	90	5	166	2	-		150	5	2,114
2008	75	3	83	5	146	8	555	59	584	89	168	7	159	7	175	3	37	4	164	15	2,346
2009	180	14	225	7	80	5	538	195	390	198	172	5	90	5	65	1	23	6	175	12	2,386
2010	255	16	391	25	71	6	509	51	484	83	156	4	174	14	40	1	46	3	173	11	2,513
2011	299	25	375	18	104	14	533	54	527	65	99	5	165	6	15	1	17	1	168	11	2,502
2012	339	8	380	6	69	10	465	50	400	41	97	3	170	6	98	3	19	1	165	15	2,345
total	**1253**	**76**	**3469**	**177**	**1083**	**93**	**9071**	**1189**	**12652**	**1559**	**1971**	**68**	**3040**	**203**	**1211**	**42**	**142**	**15**	**1822**	**119**	**39,246**

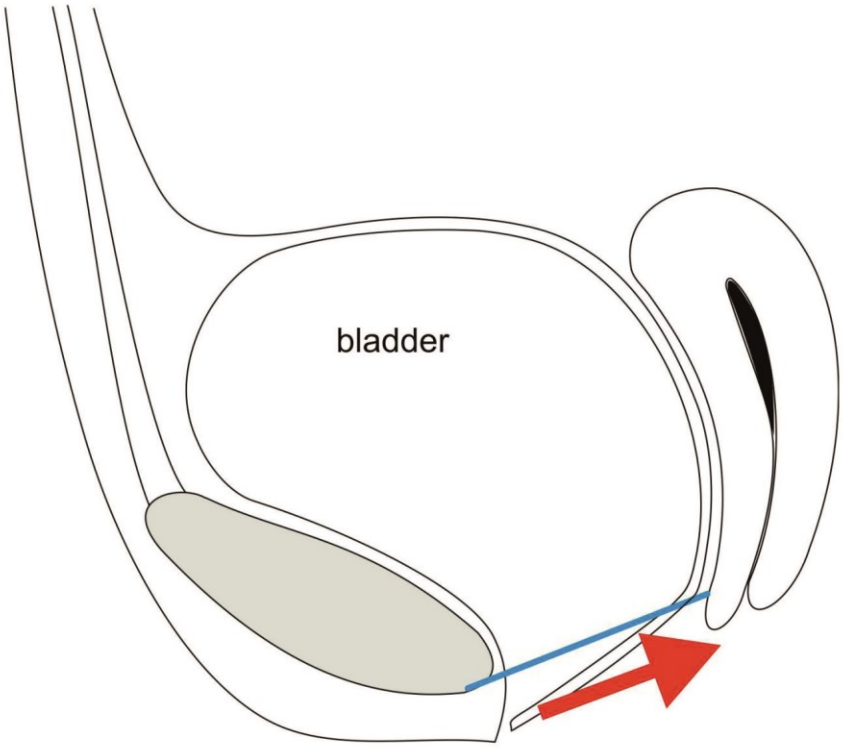
total VVF-repairs and related operations: **35,705** **+** in outreach workshops 143 **=** **35,848**
total RVF-repairs and related operations: **3,541** **+** in outreach workshops 41 **=** **3,582**

grand total 39,430

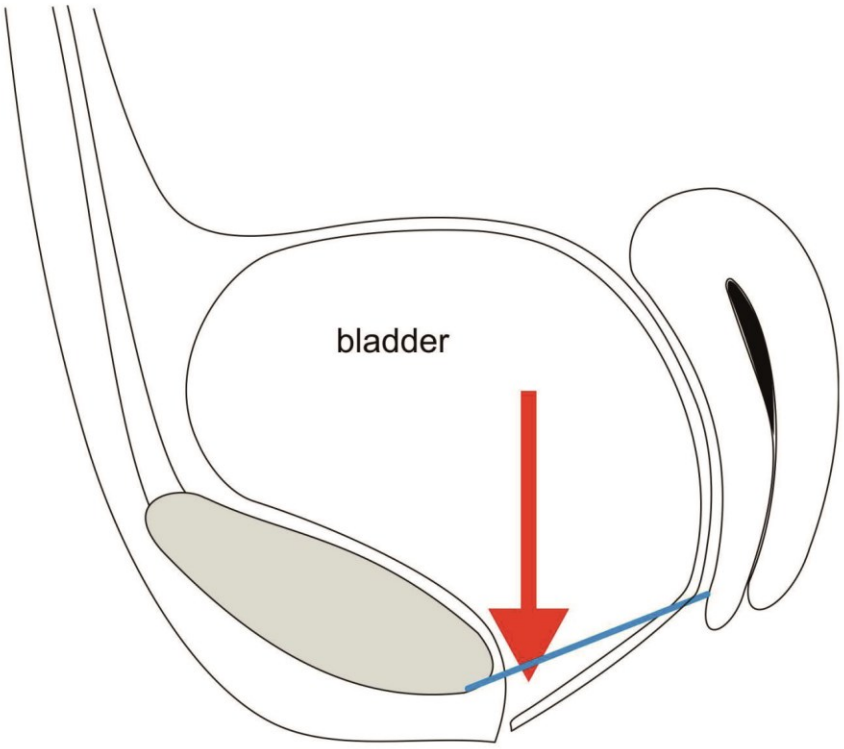
success rate at VVF closure: 90% per operation at early closure: 95% per operation
success rate at RVF closure: 85% per operation
wound infection rate: < 0.2% postoperative mortality rate: < 0.2%
final success rate (after one or more operations): > 97%
final severe **incontinence rate** after successful closure: 2-3%

operations chief consultant 1984-2012

	VVF	RVF	total
nigeria			
ebonyi	111	28	139
jigawa	27	4	31
kaduna	688	136	824
kano	5,801	1,051	6,852
katsina	10,176	1,954	12,130
kebbi	214	31	245
sokoto	1,258	216	1,474
yobe	120	17	137
zamfara	202	19	221
rép niger			
maradi	157	13	170
niamey	103	12	115
tahoua	15	3	18
zinder	274	27	301
ethiopia			
addis ababa	27	20	47
yirgalem	5		5
gondar	6	1	7
kenya			
machakos	13	2	15
tanzania			
dar es salaam	51	7	58
mwanza	14	2	16
burkina faso	18	3	21
pakistan	2		2
germany	1	4	5
holland	6	2	8
total	**19,291**	**3,552**	**22,843**



vesicalization



vesicalization I

obstetric fistula training 1989-2012

in sharp contrast with many things, if one wants to learn the **science and noble art of obstetric fistula surgery** this cannot be done in the USA but one has to come to Africa where the action is together with the real expertise in the hands and minds of the few dedicated fistula surgeons

though the majority of the trainees come from nigeria and other parts of africa, we have them also from usa., europe, asia and australia; so from all the 5 continents

however, the training poses an enormous stress upon the trainers and his staff

for guidelines, the global competency-based training manual has been used during our intensive training sessions

a grand total of 818 doctors, nurses/midwives, other highly educated persons and paramedical staff were trained/attended one of our training programs:

a total of **387 doctors**

a total of **360 nurses/midwives**

a total of **4 other academic persons**

a total of **7 medical students**

a total of **20 paramedical persons**

a total of **40 social workers**

the main question is what exactly do we want: ??quality or quantity??

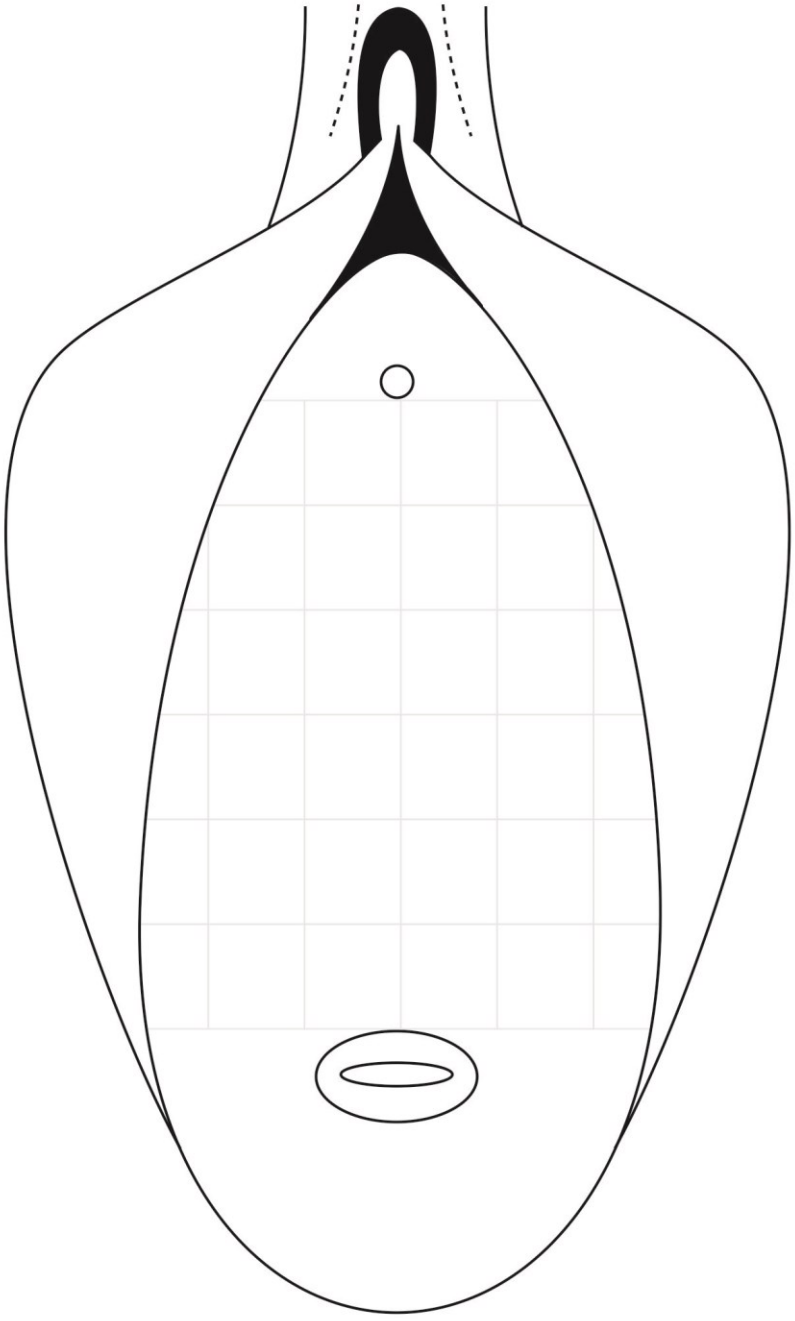
we are in a continuous process of updating our training materials

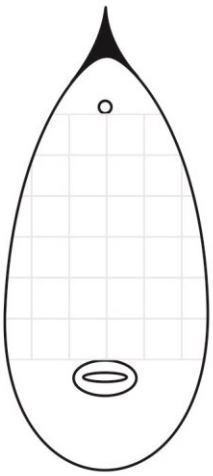
however, with our experience it does not make sense to train beginners anymore as that would be a waste of our hard-obtained evidence-based expertise

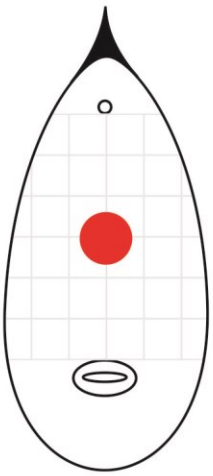
we would like to concentrate upon training of trainers, consultants/specialists who have performed already some 400 repairs

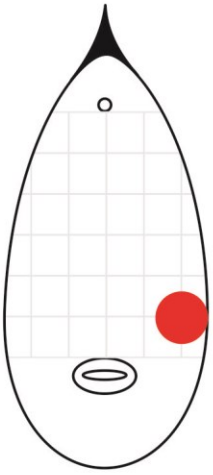
learning a trick which is how we all start is not sufficient since it is solid understanding of the anatomy and physiology of the pelvis, pelvis floor, urine/stool continence mechanism, and the principles of surgery, septic surgery and reconstructive surgery combined with compassion

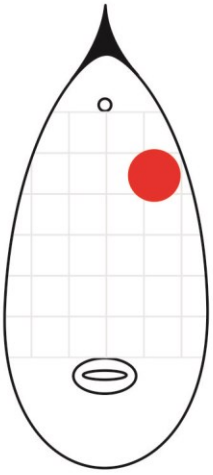
babbar ruga national fistula hospital was **accredited** by **figo** in 2012 as an international obstetric fistula training center

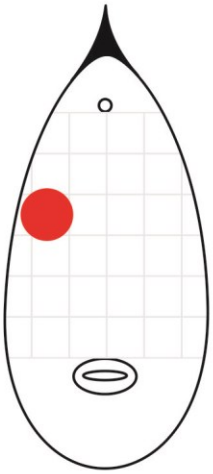


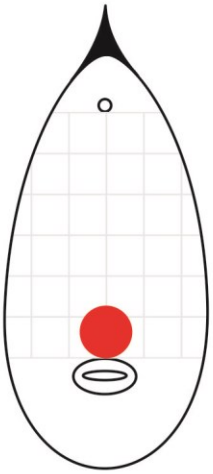


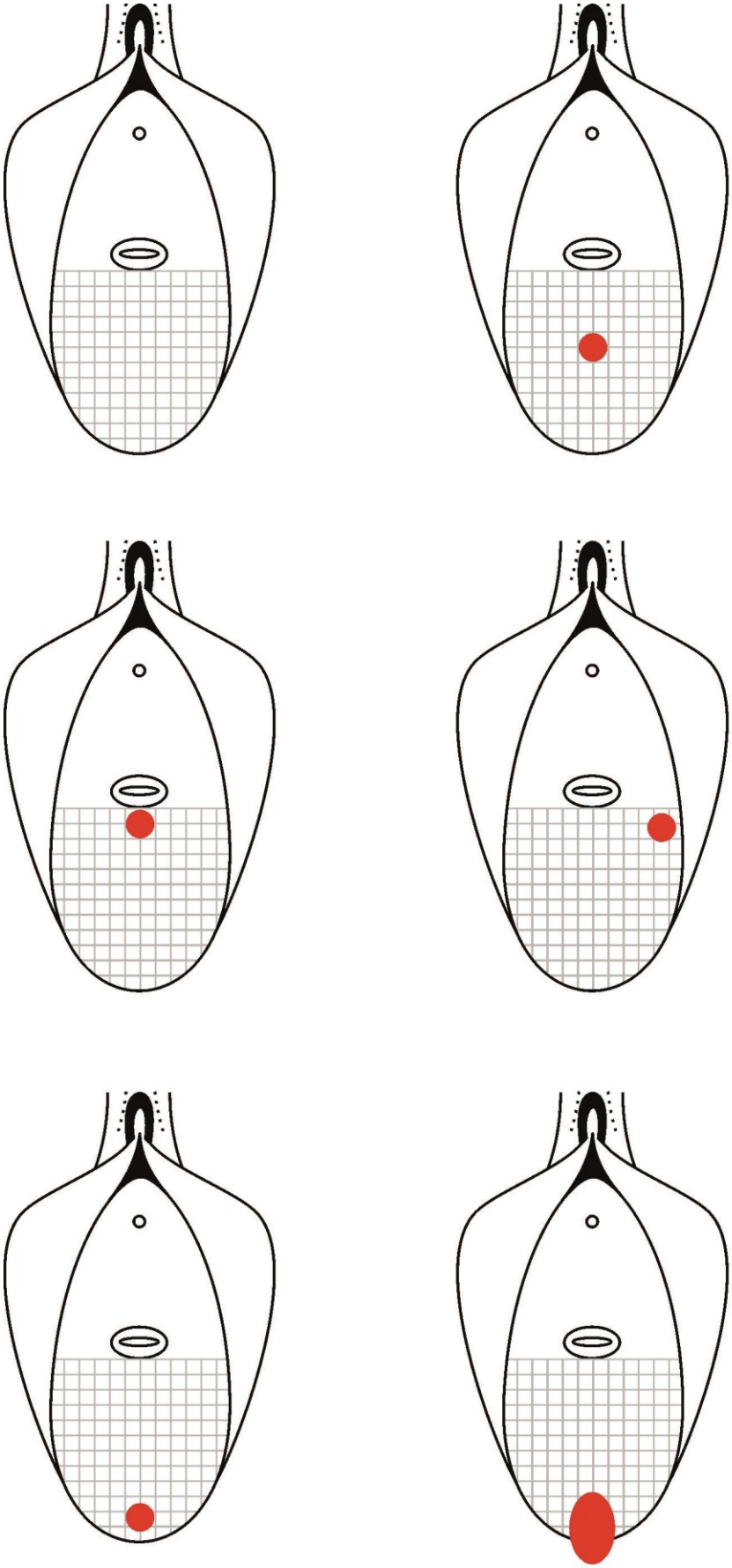












documentation + fistula research 1984-2012

documentation
the strength of the project is the complete systematic meticulous documentation by over 23,000 individual computerized comprehensive reports of history, findings, operation procedures and evidence-based results of each patient (from the very first to the last in a consecutive way) combined with prospective studies; as well the findings are documented by schematic drawings and some 150,000 full-color slides and full-color digital photos and the different operation techniques by some 80-100 hours of full-color analogous/digital videotapes; from each report we make 2 hard copies

evidence-based results
the patient gets her own card in a plastic map with date and operation report which she presents any time she comes for follow-up; at any postoperative follow-up, normally 5x from 2 wk up to 6 mth but even years later, the findings are written down on the hard copy and later entered into the computerized report which contains up to 250 different parameters
from time to time an analysis is made of the evidence-based results to draw sensible conclusions about the operation techniques and the project as a whole
the documentation is time consuming and takes stamina but without documentation there is no feedback and no proof

research
this is a continuous process, first in a retrospective way but from 1988 onwards, only in a **prospective** way about the obstetric trauma in its broadest sense

only by clinical research we came far and found **scientific, theoretic and practical** solutions for each and every problem encountered

it resulted in a long list; the most important are

PhD degree at University of Utrecht in 1989 about the obstetric fistula

scientific classification of VVF with consequences for operation technique and evi dence-based prospective outcome as to closure and continence

scientific classification of RVF with consequences for operation technique

secondary prevention by the immediate management

prevention of postrepair incontinence by meticulous repair of the pubocervical fascia

logical physiologic approach to genuine and postrepair total urine incontinence where reconstruction of the functional anatomy restores normal physiology: **continence**

physiologic operation technique for sphincter ani rupture

mini-invasive uterus-saving operation for total 3° cervix prolapse

the **philosophy of minimum approach** proved **highly efficient and successful**

the already impressive documentation is being updated by adding an electronic sche matic drawing of the fistula to the electronic operation report

the operation report is enclosed with the patient's papers inside a plastic file; so any time she presents herself to any health center; the health personnel can see exactly what has been done and take appropriate action; all the health documents belong to the patient

the **classification of vvf and rvf** is hard to beat since they are based on qualitative and quantitative necrotic tissue loss of pelvis floor structures with evidence-based consequences for the operation technique and results as to closure and continence

the longer we use these **scientific** classifications the more they become of value

the **immediate management** by **catheter and/or early closure** is proven beyond any doubt over 20 years in **5,000 patients . . . . . preventing** them from becoming **outcasts**

how can one **deny** a patient **treatment for 3 full months** by sending her away from the **health** facility; is that the holistic approach as preached by everybody or is it just what it is: **medical malpractice**

the operation techniques have all been perfected as based on the principles of recon structive surgery and evidence-based results; also the principles of septic surgery proved to be of high value

only a **failed system of obstetric care at secondary health level** is responsible for the obstetric fistula as a public health problem

any **grafting** is a **non-physiologic** procedure and as such **inferior** to techniques as based on reconstructive surgery restoring the functional anatomy

once the functional anatomy has been restored, under physiologic stress the normal physiology will be promoted as well

the only function of a suture is to bring and keep tissues together for a sufficiently long time so that nature can execute its physiologic healing processes

the author is privileged to study the experiments of nature about the urine continence mechanism in the female as presented by the obstetric fistula

our findings of anatomic tissue loss, our physiologic operation techniques to step-by-step reconstruct the functional anatomy, our evidence-based results and our theory are in sharp contrast with the current theory about the urine (in)continence mechanism in the female but especially how to cope with genuine and postrepair intrinsic incontinence

some of the theories upon which the surgical interventions for (genuine) incontinence are based seem to be like the emperor's clothes; nobody understands it however nobody wants to say so

for quite some time it had been the author's belief that the female urine (in)continence mechanism is either so **complicated** that it is not understood yet **or** so **simple** that is has been overlooked

nowadays after years and years of intensive theoretic/anatomic/surgical research with evidence-based results in thousands and thousands of patients the author believes the problem has been solved …. and ….it is **simple**

the main continence mechanism is situated within the whole urethra whilst the potential can shift from the bladder neck/urethrovesical junction towards the external urethra opening as based on physiologic stress; for which the author has full evidence

the main force of urine incontinence is **traction/pull onto the mobile posterior urethra wall** whilst the **immobile anterior urethra wall/uv-junction/bladder neck** are firmly attached to the symphysis

distorting the “circular” arrangement of the muscular urethra coat into more “oval” with also opening of the urethrovesical junction so that functionally this becomes part of the bladder = vesicalization of the proximal urethra

if the traction onto the posterior wall is such that no complete closure of the urethra can be achieved by contraction of the distorted urethra musculature urine will flow from the bladder towards the outside resulting in some kind of intrinsic incontinence

the pubocervical fascia in combination with cervix and sacrouterine ligaments forms the pelvic diaphragm which separates the abdomen from the pelvis and prevents the abdominal contents to enter the pelvis; with minimal anterior hiatus (for the urethra) and a somewhat larger posterior hiatus (for the rectosigmoid colon)

the intact pubocervical fascia stabilizes/secures the (posterior) urethra in its anatomic position since the **posterior** bladder (neck)/uv-junction/urethra wall are firmly attached to it ensuring physiology

in “genuine” intrinsic incontinence there is a longitudinal median defect in the pubocer vical fascia causing rotational descent of the **posterior** bladder neck/uv-junction/urethra resulting in vesicalization with **traction** onto the posterior urethra wall

surgery is by longitudinal repair, with if necessary bilateral para-euo fixation onto the symphysis periost, of the pubocervical fascia with a physiologic semicircular incision within the ruga folds of the anterior vagina wall; the poor results of the past are due to a mutilating longitudinal incision into the anterior vagina wall with poor access to the lateral retracted parts of the fascia, incorrect surgical technique and poor understanding of the mechanism; for which the author has full evidence

in post(fistula)repair intrinsic incontinence there may be a semicircular defect in the fascia with(out) connection of the fascia onto the arcus tendineus fascia or a median defect in the fascia or any combination of these defects

surgery is by physiologic incision with anatomically correct reconstruction of the indivi dual defects with(out) para-euo fixation; for which the author has full evidence

reconstruction of the functional anatomy will ensure continence under physiologic stress

the concept of the middle third urethra being the decisive factor in continence seems to be incorrect since

several patients with total circumferential urethra loss type **IIBb** have full continence after circumferential fixation with rhaphy of the bladder neck into anatomic position of euo as first stage and do not need urethra reconstruction as planned second stage if the pubocervical fascia is refixed as well bilaterally onto arcus tendineus fasciae

more than 90% of the patients with circumferential loss of uv-junction/ proximal_ mid urethra type **IIAb** have full continence after circumferential end-to-end vesicoure throstomy even with urethra length of only 1-1.5 cm

the majority of patients with total 3° cervix prolapse are totally continent even with urethra length of only 0.5-1 cm and even after reduction not due to kinking (which anatomically is not possible) but due to **narrowing** of the distal urethra_euo under physiologic stress with an increase of the centripetal forces; only **over-correction** resulting into traction onto the posterior urethra wall may provoke the so-called **"masked" incontinence**

kinking of the urethra in total 3° cervix prolapse is anatomically not possible since the anterior bladder neck/uv-junction/urethra are firmly attached to symphysis and in the upright position firmly pressed against the symphysis by gravity and the abdominal contents; kinking would mean that the anterior bladder neck/uv-junction/urethra would be loose from the posterior symphysis and by what kind of tissue/air/fluid would that space be filled since there cannot be empty spaces within the body mass whilst also a vacuum is not possible

the pubocervical fascia in combination with cervix, broad ligaments, cardinal ligaments and sacrouterine ligaments form the pelvic diaphragm and does **not** belong to the pelvis floor but is the **pelvis roof** which does not cover the bony pelvis

defects of these structures are involved in the development of (urethra)cystocele and cervix prolapse

the levator ani musculature forms the anterior, lateral and posterior walls of the pelvis and belongs to the **pelvis floor** in combination with perineum, perineal body, trans versus perinei muscles and (bulbocavernosus and ischiocavernosus muscles) and pos teriorly the rectum; actually, the levator ani muscles are a tail wager, so a musculoske letal structure; in combination with the other musculoskeletal structures like obturator internus muscles etc these structures cover the bony pelvis

these structures are not involved in the development of (urethro)cystocele and cervix prolapse; defects of the perineal body are involved in the development of rectocele

the pubocervical fascia is (in)directly connected bilaterally to the levator ani musculature via the arcus tendineus fasciae and the arcus tendineus levatoris ani both connected to the fascia of the internal obturator muscles

it is clear that the levator ani musculararure cannot have a major influence on the function of the pubocervical fascia

the vagina forms the central pelvis space not occupied by these structures and covers/ lines these structures by the anterior, lateral and posterior vagina walls

the whole urinary tract is an abdominal “organ” though situated exclusively extra peritoneally, the kidneys in the retroperitoneal space and the bladder and urethra in the anteroperitoneal space connected by extraperitoneal ureters

the levator ani muscles are exclusively an intrapelvic “organ”

so how can there be a direct major connection/influence between the pelvis floor and the urine continence except for the fact that on active contractions of the levator ani muscles there is also contraction of the urethra muscles via reflex action; so by pelvic floor training there is also urethra muscle training

closure of the urethra: circular or by coaptation

on clinical examination both the external opening (inspected from the outside) and the internal opening (inspected from the inside during fistula repair) are **circular** and not horizontally flat; if the urethra closes by coaptation and not circularly (which is very well possible though why should the internal/external openings then be circular) it must be coaptation of the **mobile** posterior urethra wall onto the **fixed** anterior urethra wall; with exception of the distal urethra which closes circularly otherwise the external opening cannot be circular; and why is the internal opening circular during repair

the main obstacle to real reconstructive pelvic surgery will be
the conflict of financial interest of the surgeons
combined with the
heavy lobbying of the (in)continence and prolapse industry

prevention

only by building hospitals, roads and schools
lesson learned from history

in the USA 480,000 teenage deliveries during the year 2002
however, not a single obstetric fistula

there is no relation to

early marriage, height, religion, tribe, race, rural area etc

only to

poor obstetric care

is it not time to change the strategy

after 30 years of failed safe motherhood campaigning

which did not bring a single positive result
due to the arrogance of the aid organizations
spending a fortune
on things which make no sense

at the moment it does not make a difference
where a woman delivers
she is being neglected all the same
at home and in the hospital
dead infant and dead or mutilated mother

does it make sense to mobilize the community to send a patient to a non-functioning hospital

is the community or religious leader coming out of his bed to perform an emergency cesarean section

in laure fistula center 70% of the patients are coming from within kano metropolis; 30% have even delivered in the same hospital

in the southern parts of nigeria many patients deliver in the church and get their fistula inside the church

does it make sense to keep partograms if there is no follow-up due to a non-functioning hospital

will legislation to elevate the age of marriage eliminate the obstetric fistula as people want us to believe

will legislation to elevate age of marriage eliminate early sex/early pregnancy or early childbearing; or does this increase the risk of unsafe abortions

since obstetrics is 100% female from the beginning to the very end
(except a male obstetrician performing a cesarean section)
does it make sense to address the males
is it not better to address the females themselves

more than 90% of the financial resources are spent on
the organization and expensive talkshops

not up to 10% spent on patient care or prevention

however, where is the international strategy

to set up

network of 125,000 functioning obstetric units in africa

improve the hospital obstetric care so that
the highly intelligent public notices the difference
live infant and healthy mother
themselves

what is obstetric care
but especially
who cares

these are just 3 patients operated on one morning in zaria with the following obstetric history
I
the young lady went into partu, she spent one day at home then was brought to a herbalist hospital where she spent one day and developed eclamptic fits then she was brought to a general hospital where she spent one day and the head of the baby born; however, no doctor and they could not get the baby out she went to private hospital where she spent one day and then on day 5 they performed a caesarean section to get the baby out, though the head was already out

the young lady spent one day at home where she developed eclampsia, then one day in general hospital where nothing was done, then one day in private clinic where on day 4 a cs was performed of sb male

the young lady spent 3 days at home, then one day in general hospital where on day 5 an sb male was delivered by cs; now one month later she still needs support at standing/walking since the peroneal nerves were serious traumatized

world-wide abortions 2008

study by who and guttmacher institute
the lancet january 2012

43.9 million abortions = 28 out of 1,000 women

95-97% of abortions **unsafe** in africa and south america

every year 8.5 million women need medical care for a complication due to unsafe abortion

workshops

there are several general and/or specific objectives: to operate a large number of patients within a short time, to demonstrate the **state of the art** operation techniques, to give high-quality lectures, to tackle a specific problem (stress incontinence, urinary diversion), to promote spinal anesthesia, to initiate doctors with low experience, to further train doctors with experience on an advanced level, to train nurses at all levels, to start a vvf service in a certain area and for advocacy and publicity

duration
from a minimum of 2-3 days to start a vvf service up to 2 weeks if large numbers of patients are available and reliable postoperative care can be secured

minimum number of patients
for a 1-week workshop 25-30 patients and for a 2-week workshop 40-50 patients, otherwise there is no cost-benefit effect

venue
any hospital which can handle the (large) number of patients to be operated within a short time: operation theater, autoclave, pre-/postoperative beds and trained personnel

equipment
if one/two fistula surgeon-trainer: one/two fistula operating table(s) with one/two full set(s) of instruments

pre-workshop screening
the (fistula) doctor of the hospital together with his staff is responsible to collect and screen the patients already far in advance
the logistic officer has to make all the necessary arrangements for accommodation, feeding and transport etc

facilitators
one or two experienced fistula surgeon-trainers, one or two experienced fistula operation theater nurses, one or two experienced spinal anesthesia nurses or doctors and two experienced pre-/postoperative nurses and one logistic officer

trainees
per trainer 3-4-5 doctors together with their operation theater nurse, their anesthetic nurse and their pre-/postoperative nurse
however, if the workshop is meant to start a vvf-service more doctors and especially more nurses and midwives should attend

workshop day-by-day
first day: opening, introduction, questionnaire by trainees for self evaluation and then history taking and examination of the patients, operation time-plan for each day
from second day onwards: wardround, operations with step-by-step demonstration of state of the art techniques, simple operations by the trainees under close supervision, pre-, intra- and postoperative questions and answers, lecture(s) and wardround
last day: ward round, evaluation by all participants, handing out certificates, closure

postworkshop follow-up
the fistula doctor of the hospital and his staff are responsible for the further post-operative care and follow-up of the patients
however, since we want to evaluate our work the surgical team comes back one time 4-5 weeks later to assess the results

philosophy
since the emphasis should be placed upon the quality and not the quantity it is better to execute small 4- to 5-day well organized workshops with small numbers of patients than large 10- to 14-day workshops with large numbers of patients where the organization on ground and good postoperative care being the weakest part cannot be ensured

optimal workshop
identify an area where the obstetric fistula is highly prevalent, select an obstetric fistula team, send them for training, this team selects and screens patients and then makes sure the conditions are ok, then invite real fistula surgeon(s) + team
the real expert fistula surgeon(s) + team in combination with the obstetric fistula team on ground screens all the patients for a final selection and sets the objectives
opening ceremony and handing out of a questionnaire for self-evaluation
starts operating whilst demonstrating the step-by-step technique followed by questions& answers about the procedure and theoretical lectures

during the year the chief consultant + team (co)facilitated 8 workshops making

a grand total of 54 workshops

nb during these workshops we encounter many patients who have become **inoperable** after one operation by surgeons who undertake things they cannot handle

side effect of paying ill-trained doctors per operation

half knowledge is extremely dangerous

is it quantity or quality we want

vvf workshop sokoto

maryam abacha women and children hospital
sokoto

sunday 1st0th thru saturday 16th of juli 2012

executive summary

the problem with the obstetric fistula is that **it looks so easy in expert hands**

so, last time a general doctor watched 1 procedure and started to boast to the hospital personnel that he could handle the obstetric fistula since **?what is so difficult about fistula surgery?**

he had been encouraged in this thinking by the major aid organizations propagating for political reasons/fund raising that the obstetric fistula can be cured by a simple operation whatever the professionals state

in his arrogance (and always during our absence) he selected a patient, gave spinal anesthesia and made an incision somewhere in the vagina and then he did not know what to do, abandoned the operation, the patient and the hospital, and we did not see him anymore

on request by the staff, from time to time we visit this important center to sort out things

however, any trip we have to balance the risks of traveling on dangerous roads, the costs, the efforts and the time spent against the benefits of curing the obstetric fistula patients

a total of 23 procedures were performed in 23 patients

when we left there were only 2 patients left on the operation waiting

2 doctors joined us for observational training

we plan to return in 4 wk for the follow-up and later on for another surgical workshop

time spent: 43 hr on the workshop itself, 15 hr on preparation/traveling and 5 hr on documentation/reporting: a total of 63 hours during 7 full days

vvf workhosp maryam abacha hospital

sokoto

day-to-day report

1st thru 7th of juli 2012

sunday 1st of juli 2012
we left katsina at around 11.00 hr and after some 450 km by toyota jeep we arrived safely in sokoto at around 15.30 hr where we checked into the hotel; we had to make only 3 full stops this time to avoid head-on collision with on-coming cars on the wrong side of the road; a scary moment was when a very small 3-yr-old girl all of a sudden wanted to cross but abdullahi had anticipated that very carefully; reminder of the fact that the road traffic accidents are the **no 1 cause of death** in africa

monday 2nd of juli 2012
we proceeded to maryam abacha women and children hospital in sokoto, the venue of the activities, at around 8.00 hr and started working
selection of patients and preparation of operation theater

four procedures:

01 transverse fascia repair with bladder/urethra closure of small type **IIAa** fistula at tip of ^ avw structure within **inflamed** fascia defect as **early closure** in para I (0 alive) leaking 66 days

02 continent urethra/fascia/avw reconstruction of type **IIBa** fistula as **early repair** in 12-yr-old P0 after **yankan gishiri** by wanzami bco ba hanya leaking 15 days

03 3/4 circumferential vesicourethrostomy with bilateral fascia refixation as **early closure** of large type **IIAb** fistula in para XI (8 alive) who needed support whilst standing/walking bco severe bilateral foot drop; the **devastating trauma** of **obstructed labor** even in multipara leaking 66 days

04 transverse fascia repair with urethra/bladder closure of type **IIAa** fistula in para VI (3 alive) as **early closure** leaking 33 days

and wardround from **8.00 to 16.30 hr**

tuesday 3rd of juli 2012

eight procedures:

005 transverse fascia repair with bladder/urethra closure of small type **IIAa** fistula in para II (0 alive) after cs-delivery as **early closure** leaking for 42 days; not healed by catheter treatment for 5 wk

006 dilatation and foley ch 18 of severe scarred uv-stricture as **first stage** in the management of **inoperable IIBb** fistula in para I (0 alive) leaking 3 yr; total vagina atresia due to severe stenosis/shortening (ba hanya ko kadan); vagina depth/length **only 1 cm**; pat referred to katsina for eventual exploration and fur ther (surgical) management

007 total debridement of all **necrotic tissue** of 2 cm 0 type **IIAa** fistula in para I (0 alive) at 28-day duration; since anatomy not clear and cervix not identified **no** further action now; for review in 2-3 mth

008 though spinal anesthesia ok (towel clips !) and pat admitted **no pain**, she was not willing to cooperated for even suturing the labia; so **no** attempt even at operation

009 transverse fascia repair with bladder/urethra closure of minute type **IIAa** fistula in para I (0 alive) which would have been healed by immediate catheter; now leaking 3 mth

010 catheter treatment as a try in atonic bladder following accident falling down into a well; however, pudendal nerve intact (ar pos) and no stool/flatus in continence; immediate strict bladder drill upon catheter removal may cure her

011 catheter treatment for postpartum atonic bladder with "healed fibrosed" total avw trauma in para I (0 alive) leaking for 3 mth

012 only bladder drill of minimal intrinsic_stress incontinence in para I (alive) leaking only whilst sitting for 7 days; avw with intact ruga folds bulging into vagina with normal longitudinal bladder diameter

and wardround from **8.00 to 16.30 hr**

wednesday 4th of juli 2012

five procedures:

013 catheterization R ureter, creation/disobliterion of urethra and repair of **mutilated** type **IIBa** following yankan gishiri by wanzami with medical licence in private clinic bco cystocele + repair by same doctor

014 quartercircular fascia repair/refixation L with bladder/urethra closure of **second obstetric** lungu fistula L type **IIAb** in para II (0 alive); sb male at home in labor for 2 days

015 continent urethra/fascia/avw reconstruction of type **IIBa** fistula in 13-yr-old girl leaking for 1 yr following yankan gishiri by wanzami bco ba hanya and operated 1x, **nb** married 3 yr ago and still premenarche

016 repair of **mutilated** type **I** fistula where anatomy **not** clear either due to cs or repair or both in para III (1 alive); it seems like sth but pat menstruating now 3 days against 7 days before; operated 1x

017 quartercircular fascia repair/bilateral fixation of post **IIAb** total intrinsic in continence III with 8x1 cm semicircular pcf defect with continuous pull by fixed cervix onto posterior urethra wall

and wardround from **8.00 to 17.00 hr**

thursday 5th of juli 2012

five procedures:

018 urehra + quartercircular fascia repair/bilateral fixation of **mutilated iatro genic** type **IIBb** fistula following incontinence surgery by incompetemt highly inexperienced "surgeon" promoted as "trainer" for beginners

019 anorectum closure only as **first stage** of hanya repair in para I (0 alive) with post **IIAb** total intrinsic incontinence and **"inoperable"** sphincter ani ruptu re with **extensive scarred** rectum fistula and **total pvw loss**; only done since pat insisted upon hanya only

020 quartercircular fascia repair/bilateral fixation with bladder/urethra closu re of type **IIAa** fistula in para I (0 alive) with severe circular scarred vagina stric ture due to total circumferential obstetric trauma; not healed by catheter

021 excision of **excessive scar tissue** with transverse bladder/urethra clo sure of **mutilated** small residual type **IIAa** fistula; operated 2x (mawch_acq); 10 mg of valium given on operation day since she developed ecamptic fits post operatively in 2009

022 **complicated** quartercircular fascia repair/bilateral fixation with bladder/ urethra closure of small type **IIAa** fistula after cs in para I (0 alive) operated 1x

and wardround from **8.00 to 17.00 hr**

friday 6th of juli 2012

five procedures:

023 **final assessment of possibilities** and urethra_euo-plasty as **last resort final** of **inoperable** post **IIBb** intrinsic incontinence in para II (0 alive) leaking urine for 21 years and operated at least 5x; ba hanya ko kadan

024 4/5 circumferential end-to-end vesicourethrostomy + quartercircular fas cia repair/bilateral fixation of type **IIAb** fistula in para II (0 alive)

025 transverse fascia repair with bladder closure of type **I** fistula midline in para II (0 alive)

check-up of patients operated 3-4 wk ago during previous workshop: catheter + sutures removal; all fistulas had healed; however, 1 patient had second intra cervical cs-fistula whilst 4 had postrepair stress incontinence which will heal or improve during the next 3 mth

and wardround from **8.00 to 16.00 hr**

saturday 7th of juli 2012

8.00 hr up to the maishai and then traveling same 450 km back to katsina where we arrived safely at around 14.30 hr mun gode Allah

again we had to make several full stops, 2 slow big trucks were overtaking each other alternately pushing all the other cars from the road and now a small 4-yr-old boy crossed the road but abdullahi had also anticipated that very well

remarks

we will continue to come to this center for follow-up and surgery since there are many patients in need of our service

time spent

a total of **63 hours** during **7 full days** on surgery/preparation/traveling/reporting

conclusion

it was a fine workshop where **21 operations, 1 assessment under spinal** and **1 catheter treatment** were performed in 23 patients

kees waaldijk, MD PhD 8th of juli 2012

chief consultant fistula surgeon

many thanks to

the sponsors

engender health

sokoto state government

all the staff of the maryam abacha hospital for their continuing support

doctors attending for observation

dr abubakar bello	uduth	sokoto
dr mairo hassan	urogyn dept uduth	sokoto

kees archives of the obstetric trauma

the author knew when he left europe to work in africa that people would be very skeptical about his surgical work and achievements since people in the industrialized world are so convinced about their own superiority

however, during his training in surgery, colorectal surgery, traumatology and obstetrics/ gynecology his trainers insisted upon proper documentation of history taking, clinical examination, operation reports and postoperative care in writing

so, the only thing which could convince the sceptics was proper documentation and that is exactly what he did, also with his (surgical) management of the obstetric trauma

right from the beginning from operation 1 in patient 1 in 1983 the history, preoperative examination and operation report were documented systematically in writing by himself using a type-writer including schematic drawings of the fistula; later on long-time follow-ups were added; from operation 258 in patient 230 systematic pre- and postoperative photography by color-slides was added

slowly the number of parameters increased, and after a retrospective analysis in the first 500 patients resulting in a PhD degree at the university of utrecht, all parameters were documented in a prospective way in order to undertake evidence-based clinical research

in 1992 the computer was introduced and all meticulous subsequent documentation since has been electronic/digital whilst the existing documentation was slowly converted into digital

from 2003 onward the systematic photography of the obstetric trauma has been done by digital camera

at the moment the digital obstetric trauma documentation of the author comprises more than 500 gigabytes, including patient profiles, operation reports, long-term-follow-up of 23,000 procedures, complete database with up to 250 parameters of each patient, some 150,000 full-color digital photo's, annual reports, power-point congress presentations, lectures, workshops, peer-reviewed articles, training manuals and textbooks

the authors is now in the process of updating, editing and anonymizing all this material as kees archives of obstetric trauma in order to put everything on-line for anybody who is interested to study, analyze, publish and learn, of course with explicit reference to these archives

total transparency is needed to promote further progress in our struggle to help the poor women and to eradicate the obstetric fistula

a sample of this is presented on the following pages

operation in Maternity Hospital

suj (katsina) female 20 yr 02/12-83

surgeon: Kees WAALDIJK

assistant: Dr Sarki USMAN

diagnosis: PI, ± 0.8 cm vesicovaginal fistula midline bladder neck type **IIAa**, leaking urine of 3 yr that started immediately following difficult labor for 4 days, an SB male, married 6 yr ago, not living with husband
EUO/F 4 cm

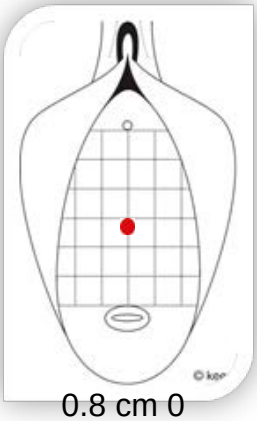
operation: VVF-repair and bulbocavernosus fat graft R

duration: 90 min

anesthesia: general

injection of normal saline with adrenaline into tissue surrounding fistula, circumferential incision 2-3 mm from fistula edge, blunt dissection of avw from bladder over 5 cm, difficult sharp dissection of avw from urethra over 3 cm, completely tension-free transverse bladder closure by a double layer of inverting atraumatic chromic catgut 00, check on closure by gentian violet instillation through catheter, incision R labium majus, dissection of bulbocavernosus fat, tunneling between bladder/urethra/anterior vagina wall up to incision R labium, rerouting the bulbocavernosus fat thru this tunnel and fixation over repair, check on hemostasis, closure of vagina and labium pressure pad; catheter for at least 3 wk

16.12.83	not leaking/labium healed	cath removed	bladder drill
17.12.83	not leaking at all, no incontinence, normal miction Insp/ healed, no stress incontinence		
19/06-84	not leaking at all, no incontinence, normal miction		healed, no stress
27.02.86	**amenorrhea for 8-9 mth**	not leaking at all	**instruction**
13/03-86	**PII (0 alive)** live female by cs died		not leaking at all



0.8 cm 0

RR
preanesthesia: mm Hg
5":
10":
postoperation:

Pt 882 **KATSINA** VVF 1001

aib (katsina) female 28 yr 04/08-88

surgeon: Kees WAALDIJK

assistant: Kabir LAWAL

diagnosis: PVI (3 alive), ± 1 cm 0 urethrovesicovaginal fistula at midline fixed to symphysis type **IIAb**, leaking urine for 1 yr which started immediately following a CS bco obstructed last labor of 3 days, SB male, married 15 yr ago pre(menarche 1 mth later), not living at husband
EUO/F 4 cm, F/C 8 cm

operation: UVVF-repair with fibrofatty graft R

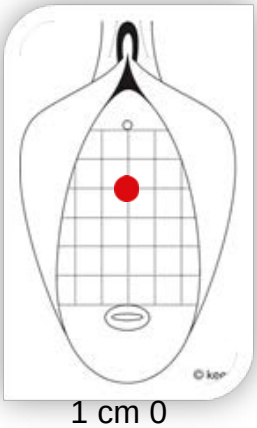
duration: 45 min

anesthesia: spinal L4/L5 with 4 ml bupivacaine 0.5%

bilateral episiotomy, incision at fistula edge with bilateral transverse ex tension, sharp/blunt dissection of avw, sharp issection of bladder from pubic bones, FOLEY Ch 16, tension-free transverse bladder/urethra closure by single layer of inverting chromic catgut 0/4, gv check, incision R labium majus, sharp mobilization of fibrofatty tissue, tunneling under R lateral vagina wall and fixation of this graft over repair onto pubic bones, transverse avw closure by everting chromic catgut 1/5, closure of R labium, pres sure pad, skin closure, pack; free urine flow

26.08.89 not leaking/labium healed cath removed bladder drill
27.08.88 not leaking at all, no incontinence, normal miction
insp/ healed, no stress incontinence
03.09 + 03.11.88 idem
04.04.89 not leaking at all, no incontinnece, normal miction healed, no stress

30/05-89 **amenorrhea for 3 mth** not leaking at all **instructions**



1 cm 0

RR
preanesthesia: 140/85 mm Hg
5": 130/70
10": 130/70
postoperation: 110/60

Pt 1646 **KATSINA** VVF 2001

sbk (rép niger) female 14 yr 23/06-92

surgeon: Kees WAALDIJK

assistant: Hauwa GARBA

diagnosis: PI (alive), ± 2 mm 0 scarred retracted vesicovaginal fistula midline at tip of ^ avw structure type **I**, leaking urine for 5 mth that started 2 days following CS b.c.o. obstructed labor for 3 days, in hospital live male, married 1 yr ago pre(menarche 3 mth later, pt menstruated only once), not living at husband, no menstruation (lactation), drop foot L (grade 4), no RVF
EUO/F 7 cm, F/C 2 cm 144.0 cm

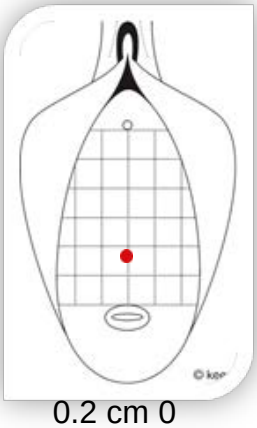
operation: VVF-repair

duration: 30 min

anesthesia: spinal L3/L4 with 4 ml bupivacaine 0.5%

episiotomy L, transverse incision through fistula, sharp dissection of avw, a completely tension-free transverse bladder closure with a single layer of inverting chromic catgut, gv check, a transverse avw closure with everting chromic catgut/4x supramid, FOLEY Ch 20, skin closure, vagina pack; a free urine flow, EUO/BW 12 cm, good elevation, EUO/B 5 cm
normal bladder capacity (longitudinal diameter 12-5 = 7 cm)

09.07.92 not leaking at all cath removed bladder drill
16.07.92 not leaking at all, no incontinence, normal miction so insp/ healed, good elevation, no stress incontinence
22.08.92 idem
07.01.93 not leaking at all, no incontinence, normal miction healed, no stress



0.2 cm 0

RR
preanesthesia: 120/70 mm Hg
5": 110/70
10": 100/70
postoperation: 100/70

Pt 2357 **KATSINA** VVF 3001

posterior bladder as anterior vagina wall

ymmd (borno) female 16 yr 20/01-95

surgeon: Kees WAALDIJK

assistant: Halima IBRAHIM

diagnosis: PI, a very extensive ± 2.5x1.5 cm urethrovesicovaginal fistula **IIBb** with circumferential defect, leaking urine for 6 mth that started immediately following an obstructed labor of 1 day, at home SB male, married 3 yr ago pre(menarche 4 mth later), not living with her husband, no menstruation, drop foot R (grade 3) and L (grade 3), no RVF; narrow pubic angle, severe vagina stenosis/ moderate shortening, no avw
EUO/F 1 cm, F/C 0 cm, AU/AB 1 cm 159.0 cm

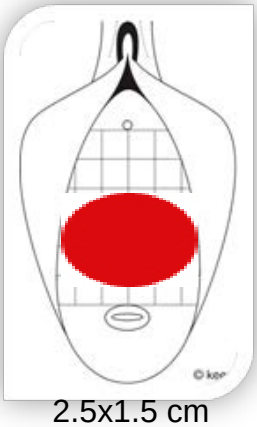
operation: circumferential UVVF-"repair"

duration: 40 min

anesthesia: spinal L3/L4 with 4 ml bupivacaine 0.5%

bilateral episiotomy and severing of stone-hard 1.5 cm-thick stenosis, urereters not identified, incision at fistula edge, sharp circumferential mobilization of bladder from cervix/pubic bones/symphysis (but not from anterior abdominal wall), a completely tension-free circumferential UVVF-repair by an en-to-end vesicourethrostomy with a single layer of inverting chromic catgut starting by fixation of anterior/lateral bladder walls onto symphysis, peritonization, suturing what is left of avw onto bladder peritoneum, FOLEY Ch 18, skin closure and vagina pack; free urine flow (no loin pain), EUO/BW 13 cm, good elevation, EUO/B 2 cm
increased bladder capacity (long diameter 13-2 = 11 cm, bladder atony??)

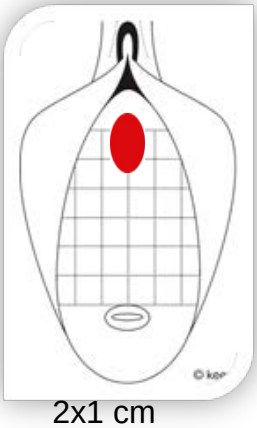
09.02.95 not leaking, incontinence cath removed bladder drill
23.02.95 leaking & normal miction healed, good elevation, stress ++ so
05.03.95 overflow incontinence euo/bw 15 cm foley ch 18
23.03.95 not leaking at all cath removed bladder drill
25/03-95 not leaking, incontinence +, normal miction
insp/ healed, good elevation, stress incontinence ++



2.5x1.5 cm

RR
preanesthesia: 130/70 mm Hg
5": 110/70
10": 100/60
postoperation: 90/60

srw (katsina) female 17 yr 19/11-97
surgeon: Kees WAALDIJK
assistant: Gambo LAWAL
diagnosis: PI, ± 2x1 cm urethrovesicovaginal fistula with bladder mucosa prolapse **IIBa**, kidney-shaped ± 4x1x1 cm bladder stone, leaking urine for 8 mth which started immediately following obstructed labor for 1 day, in hospital SB male, married 4 yr ago post(menarche 1 mth earlier), not living with husband, normal menstruation, drop foot R (grade 4) and L (grade 3), no RVF, no yankan gishiri; narrow pubic arch, partial pc muscle loss, moderate distal vagina stenosis
EUO/F 0 cm, F/C 5 cm 151.0 cm
operation: suprapubic cystostomy, stone removal and urethra/avw reconstruction
duration: 50 min
anesthesia: spinal L3/L4 with 4 ml bupivacaine 0.5%
small transverse suprapubic incision thru all layer, longitudinal bladder opening, removal of 4x1x1 cm kidney-shaped bladder stone
episiotomy L, wide U incision, sharp dissection of avw, sharp mobilization of (para)ure thra tissue, tension-free urethra reconstruction over 1.5 cm by single layer of inverting chromic catgut checking with H8, anterior urethrotomy at 12 o'clock, FOLEY Ch 18, flushing debris out of bladder, avw reconstruction by skin-mucosa rotation/advancement flap from R labia, separate bilateral fixation of avw at 3-4 cm from EUO onto pubic bones with 1x supramid each side, skin closure, pack, acriflavine dressing; free urine flow, EUO/BW 12 cm, good elevation, EUO/B 2.5 cm
normal bladder capacity (longitudinal diameter 12-2.5 = 9.5 cm)
poor-quality scarred (para)urethra tissue, good position of the UV-junction **against** middle third of symphysis
16.12.97 not leaking sp wouind healed cath removed bladder drill
23.12 + 06.01 + 20.04.98 not leaking at all, no incontinence, normal miction insp/ healed, good elevation, no stress incontinence
30/08-99 **amenorrhea for 3 mth** not leaking at all **instructions**
new second obstetric fistula PII (0 alive) sb female in hospital
26/03-00 operation: dilatation/UVVF-repair Pt 3403 VVF 4758
10.08.00 not leaking, incontinence ±, normal miction insp/ healed, good elevation, stress incontinence ±
third obstetric leakage completely ok until PIII (0 alive) sb male by cs-sth
08.04.08 operation (sa'ad): colporrhaphy + bladder neck fixation
26.06.10 operation: bilateral pcf/avw fixation Pt 6190 VVF 7882
30.08.10 not leaking at all, no incontinence, normal miction
completely ok until 2 mth ago following fever/lower abd pain not leaking, incontinnece +
27.06.12 operation: para-euo fixation + pb reinforcement vvf 8335


2x1 cm

RR
preanesthesia: 130/80 mm Hg
5": 120/70
10": 110/70
postoperation: 100/60

Pt 3823 **KATSINA** VVF 5001

sut (katsina) female 28 yr 14/02-01

surgeon: Kees WAALDIJK

assistant: Kabir LAWAL

diagnosis: PVII (5 alive), ± 0.2 cm 0 CS_vesicovaginal fistula **I** slightly at R, **leaking urine for 77 days** that started immediately (upon catheter removal 7 days) following CS (22/11-00) b.c.o. obstructed last labor of 2 days, SB female, married 17 yr ago pre(menarche 2 yr later), not living with husband, no menstruation, a drop foot R (grade 3) and L (grade 4), no RVF, no yankan gishiri; normal AP diameter/narrow pubic arch 75°
referral
EUO/F 8 cm, F/C 0.5 cm 160.5 cm

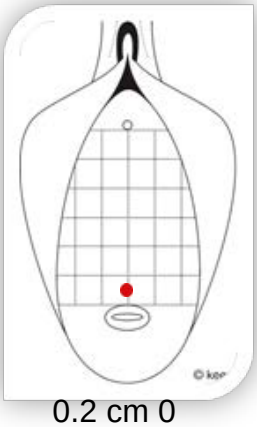
operation: CS_VVF-repair

duration: 20 min

anesthesia: spinal L3/L4 with 4 ml bupivacaine 0.5%

transverse incision thru fistula, sharp dissection, excision of scar tissue +, 0.8 cm 0 bladder defect, traumatized bladder tissue, transverse bladder closure by single layer of inverting serafit, FOLEY Ch 18, transverse avw/ cervix adaptation by 2x everting seralon and pack; free urine flow, EUO/BW 13 cm, moderate elevation, EUO/B 3.5 cm
normal bladder capacity (longitudinal diameter 13-3.5 = 9.5 cm)
acceptable position of UV-junction **not against** middle third of symphysis

12.03.01 not leaking at all cath removed bladder drill
19.03.01 not leaking at all, no incontinence, normal miction so insp/ healed, good elevation, no stress incontinence
16.04 + 05.06 + 04.08 idem
27.03.02 not leaking at all, no incontinence, normal miction healed, no stress



0.2 cm 0

RR
preanesthesia: 140/100 mm Hg
5": 130/90
10": 120/80
postoperation: 120/70

Pt 4633 KATSINA VVF 6001

second obstetric fistula RVF ahc

sdk (jigawa) female 18 yr 23/01-04

surgeon: kees waaldijk

assistant: kabir lawal

diagnosis: PIII (0 alive), ± 4x2 cm urethrovesicovaginal fistula **IIAa** slightly at R, **leaking urine for 62 days** which started immediately following obstructed last labor for 2 days, in hospital SB male, married 6 yr ago pre(menarche 1 yr later), not living with husband, no menstruation, drop foot R (grade 4) and L (grade 4), no RVF but 1 cm 0 healed pvw trauma at cervix (never flatus pv), no yankan gishiri; normal AP diameter/pubic arch 85°, AR pos, successful VVF-repair 22/3-02 after delivery II (B/R_Id) patient EUO/F 1.5 cm, F/C 1.5 cm 159.0 cm

operation: bilateral ureter catheterization and UVVF-repair

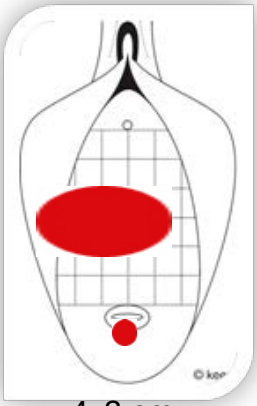
duration: 30 min (**photographic documentation**)

anesthesia: spinal L3/L4 with 4 ml bupivacaine 0.5%

bilateral ureter catheterization for 20 cm, incision at fistula edge, sharp dissection, tension-free longitudinal bladder_urethra closure by single layer of inverting serafit, triple fixation of FOLEY Ch 18, longitudinal avw adaptation by 2x everting seralon, pack; free urine flow, EUO/BW 13 cm, good elevation, EUO/B 2 cm (**loss**)
normal bladder capacity (longitudinal diameter 13-2 = 11 cm)
acceptable position of UV-junction **against** middle/caudad third of symphysis

15.02.04 not leaking at all cath removed bladder drill

22/02-04 not leaking at all, no incontinence, normal miction so insp/ healed, good elevation, no stress incontinence



4x2 cm

	RR
preanesthesia:	130/80 mm Hg
5':	120/70
10':	110/70
postoperation:	100/70

Pt 5460 KATSINA VVF 7001
rvf

huk (gombe) female 32 yr 17/02-07

surgeon: kees waaldijk

assistant: sa'adatu ibrahim

diagnosis: PX (4 alive), ± 0.5 cm 0 urethrovesicovaginal fistula R within large trans verse avw scar type **IIAa**, leaking urine for 4 mth (though it still looks fresh) which started immediately following obstructed last labor of 2 days, at home SB male, married 20 yr ago pre(menarche 1 yr later), still living with husband, normal menstruation, drop foot R (grade 5) and L (grade 4), **healed** transverse scar midline pvw_posterior cervix-RVF (flatus pv for 2 wk), no yankan gishiri; normal AP diameter/pubic arch 95°, AR pos, intact pcm + paraurethra ATF/ATL but bilateral ic_icm + ?ATF/ATL? loss up to ischiac spine, large 6x0.5 cm transverse curved defect pc fascia, trauma to b_c_sul with cervix 2° porlapse
EUO/F 3.5 cm, F/C 2 cm 154.0 cm

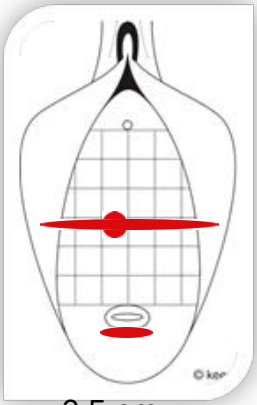
operation: UVVF-repair

duration: 25 min (**teaching_documentation**) healing 95% continence 95%

anesthesia: spinal L4/L5 with 3 ml bupivacaine 0.5%

episiotomy L, large transverse incision thru fistula, sharp dissection, tension-free transverse bladder/urethra closure by single layer of inverting serafit starting bilateral paraurethra fixation of fascia onto ATF by 2x serafit each side, triple fixation of FOLEY Ch 18 with transverse avw adaptation, skin closure, pack; free urine flow, EUO/BW14 cm, good anterior elevation (urethra totally against symphysis), EUO/B 3.5 cm
normal bladder capacity (longitudinal diameter 14-3.5 = 10.5 cm)
good position UV-junction **against** middle third symphysis
normal-width 3.5 cm good-quality urethra_EUO in anatomic position

19.03.07 not leaking at all cath removed bladder drill
26.03.07 not leaking at all, no incontinence, normal miction R=5 L=5
insp/ healed, good elevation, no stress incontinence AR pos so
02.05 idem
03.08.07 not leaking at all, no incontinence, normal miction
Insp/ healed, good elevation, no stress incontinence


0.5 cm

	RR
preanesthesia:	130/80 mm Hg
5':	120/80
10':	120/70
postoperation:	110/70

Pt 3834 **KATSINA** VVF 5014

hms (katsina) female 15 yr 24/02-01

surgeon: Kees WAALDIJK

assistant: Kabir LAWAL

diagnosis: PI, **very extensive** ± 2 cm 0 urethrovesicovaginal fistula **IIBb** with urethra block/circumferential defect, leaking urine for 7 mth which started imme diately following obetructed labor of 2 days, at home SB male, married 3 yr ago pre(menarche 1 yr later), not living at husband, no menstruation, drop foot R (grade 0), no RVF, no yankan gishiri; ?AP diameter?/narrow pubic arch 50°, asymmetric pelvis with scoliosis, major pc muscle loss (**bare bones**) ref
EUO/F 0.8 cm, F/C 0 cm, AB/AU 1 cm 156.0 cm

operation: catheterization L ureter and circumferential UVVF-"repair"

duration: 25 min

anesthesia: spinal L3/L4 with 4 ml bupivacaine 0.5%

episiotomy L, only ureter L identified/catheterized for 20 cm, incision at fistula edge, sharp circumferential dissection, advancement/caudad fixation of anterior bladder onto symphysis/"urethra", tension-free circumferential UVVF-"repair" by end-to-end vesico"urethro"stomy by single layer of inverting serafit, FOLEY Ch 18, transverse skin_"avw"/cervix adaptation with 2x everting seralon, skin closure, pack; free urine flow, EUO/BW 11 cm, good elevation, EUO/B 1.5 cm (urethra length only 0.5 cm)
normal bladder capacity (longitudinal diameter 11-0.5 = 10.5 cm)
poor position UV-junction **against** caudad third of symphysis

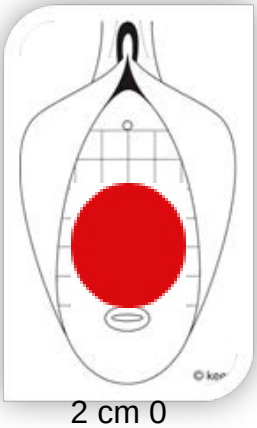
27.03.01 not leaking, incontinence + cath removed bladder drill
02.04 not leaking, incontinence +, normal miction healed, incontinece + so

08.05.01 not leaking at all, no incontinence, normal miction
insp/ healed, good elevation, no stress incontinence

new now inoperable IIBb obstetric fistula PIII (0 alive) sb male by cs

03.02.11 operation: assessment + ps vvf 8001

27.03.11 fistula



2 cm 0

RR
preanesthesia: 170/100 mm Hg
5": 140/90
10": 130/80
postoperation: 120/70

pt 6291 katsina vvf 8001
pt 3834 **second now inoperable IIBb fistula** vvf 5014
major anteriobilateral trauma

hms (katsina) female 25 yr 03.02.11

surgeon: kees waaldijk

assistant: kabir lawal

diagnosis: PIII (0 alive), **very extensive** ± 6 cm 0 urethrovesicovaginal fistula **IIBb** with circumferential defect, leaking urine for 4 yr that started immedia tely following cs bco obstructed last labor of 1 day, sb male, married 13 yr ago pre(men arche 1 yr later), still living at husband, normal menstruation, drop foot R (grade 2) with gm_at contracture up to 85/-5° dorsiflexion and L (grade 5), no RVF, no yankan gishiri, no h/o eclampsia: normal AP diameter/narrow pubic arch 50°, asymmetric pelvis with scoliosis, major bilateral atf/atl + pc_io_ilc_iscm loss
only 0.5 cm distal anterior urethra left ref
euo/f 0 cm, f/c 0 cm, ab/au 4 cm, i/v 8 cm 156.0 cm

operation: **assessment + "ps"**

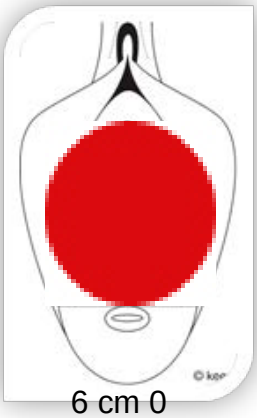
duration: 25 min

anesthesia: spinal L3/L4 with 4 ml bupivacaine 0.5%

the only thing **tried** is incision at fistula edge, without dissection bilateral **ps** avw/lvw ap proximation by everting 1x serafit/1x seralon each side but even that is not ok
size reduced to 4 cm 0
cervix "retracted" midline **nothing can be expected** **review in 3 mth**

28.02.11 leaking insp/ fistula so

27.03.11 leaking fistula


6 cm 0

RR
preanesthesia: 180/120 mm Hg
5": 160/100
10": 1400/90
postoperation: 130/80

KATSINA cath 351
second obstetric fistula cath

msr (katsina) female 20 yr 12/8-93

diagnosis: PIII (0 alive), ± 1 cm urethrovesicovaginal fistula midline **IIAa** and fixed to symphysis, **leaking urine for 33 days that started 1 day** following ob structed last labor for 7 days, at home a live female who died 1 day later, married 8 yr ago post(menarche 1 mth earlier), not living with husband, no RVF, no h/o drop foot; N.B. also **fistula after 2nd delivery healed by catheter only (B/R, Kabir)**; uterus fixed abdominally due to cs
EUO/F 4 cm, F/C 6 cm 144.5 cm

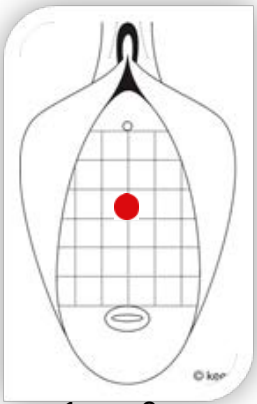
12.08.93 freshening, minimal dissection, transverse bladder/urethra closure with inverting chromic catgut, transverse avw closure with everting chromic catgut and 3x supramid, FOLEY Ch 18, vagina pack; free flow of urine, good bladder capacity (EUO/BW 12 cm), good elevation, EUO/B 4.5 cm anesthetic no pain at all!

09.09.93 not leaking at all cath removed bladder drill
20.09.93 not leaking at all, no incontinence, normal miction so insp/ healed, good elevation, no stress incontinence
04.10 + 04.11 + 14.11.93 idem
17.01.94 not leaking at all, no incontinence, normal miction healed, no stress

09/04-96 **third fistula** for 40 days following **home** delivery of SB female
15/04-96 operation (B/R_Ja): UVVF-repair PIV (0 alive)
26/07-96 leaking ± 100 ml gv: no leakage, only **stress + in standing**
05/10-96 operation: UVVF-repair VVF 3642
11/03-97 not leaking at all, no incontinence, normal miction
insp/ healed, good elevation, no stress incontinence

15/09-97 PV (1 alive) delivered live male who died same day not leaking at all

05/10-98 **nb fourth obstetric fistula** PVI (1 alive) live male by cs
10/10-98 operation: UVVF-repair VVF 4262
09.11.98 not leaking, incontinence cath removed bladder drill
16.11 + 09.12.98 not leaking, incontinence +, normal miction healed, stress +
12.07.99 not leaking at all, no incontinence, normal miction
insp/ healed, good elevation, no stress incontinence
01.05.11 not leaking at all, no incontinence, normal miction healed, no stress


1 cm 0

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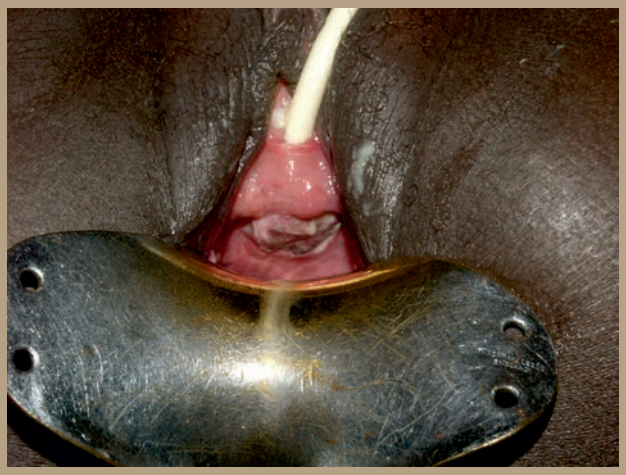
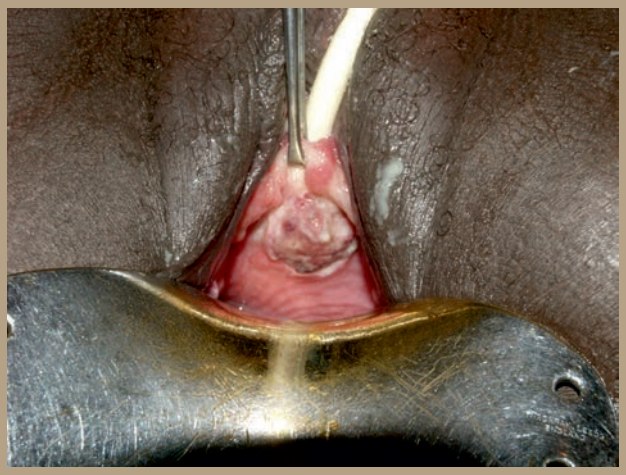
necrotic fistula day 8

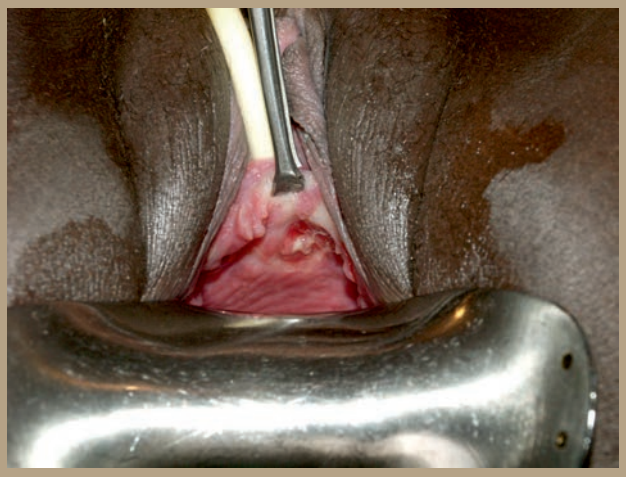
with atonic bladder



day 15



day 15



day 28

healed day 54

catheter treatment