national vvf project nigeria

evaluation report XX

2003

reprint

20-year period: 1984-2003

fistula surgery, training and research

kees waaldijk MD PhD

chief consultant fistula surgeon

reprint

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2003

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

Maryam Abacha Hospital
SOKOTO

Kofan Gayan Hospital
ZARIA

République du Niger

Centre Hospitalier Départemental
MARADI

Maternité Centrale
ZINDER

kees waaldijk MD PhD

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

within the complex trauma of the obstetric fistula, it is the leaking of urine which makes the patient an outcast; every effort has to be made to close the fistula the earlier the better

prevention of the obstetric fistula is a utopia for another century

prevention of the woman from becoming an outcast is very well feasible by the immediate (surgical) management by catheter and/or early closure

immediate indwelling bladder catheterization together with high oral fluid intake will heal 15-20% of the fresh fistulas

do not waste time, energy and money on things which make no sense

concentrate on the most import thing: close the fistula

executive summary

since major organizations, UNFPA, FIGO, AMDD, WHO and others, have become involved in the initiative against fistula there is a renewed interest in **the obstetric fistula as a major public health problem** especially at international level

the workshop in ABAKALIKI in Ebonyi State proved our statement that the obstetric fistula is prevalent throughout the whole of Nigeria since 55 patients presented

the project has now **expanded to** South-Eastern Nigeria: including **Ebonyi State**; our next target will be Western Nigeria

during the year a total of 1,663 VVF/RVF-repairs were performed in the centers whilst a total of 22 doctors, 7 nurses and 5 medical students attended our regular training program or the workshops making **a grand total of 19,628 repairs, 466 trainees and 11 workshops**

the Federal Government of Nigeria becomes more and more involved in the obstetric fistula realizing it has to do something about this major public health problem and the same applies to the State Governments

a 5-year plan was submitted to expand the service through the whole Federation of Nigeria: each of the 36 states should have its own VVF-repair center and each of the 6 geopolitical zones should have its own VVF-training center

the Federal Ministry of Women Affairs together with the Federal Ministry of Health donated fine equipment for the project: high-quality operating tables, strong operating lamps, sterilizers and VVF-surgery instruments etc; as well funds were provided for the training of Nigerian doctors and nurses

the national agency poverty eradication program NAPEP provided Babbar Ruga Hospital with rehabilitation equipment such as sewing machines, knitting machines and materials for soap making

we were highly impressed by the visit of the Federal Minster for Women Affairs coming down from Abuja to visit Babbar Ruga Hospital where she took all of her valuable time to be informed in depth about the obstetric fistula, the patients, the management and the future plans

her visit coincided with a National Seminar on VVF as organized in Katsina by the Federal Ministry of Women Affairs in order to develop a strategy how to combat the obstetric fistula in Nigeria

also the Governor of Katsina State, together with his executive council, made an extensive inspection tour of Babbar Ruga Hospital during which he gave instructions to upgrade the hospital and to construct a rehabilitation center annex hostel outside the hospital premises to be managed by the Ministries of Women Affairs and Social Welfare

the WHO meeting for fistula surgeons experts to prepare a manual proved more or less a political move in order to involve more and more major organizations

by continuing our efforts in the struggle against the obstetric fistula we hope to have an impact upon an almost hopeless situation which will last another 100 years

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introduction
the obstetric fistula constitutes a social disaster of the highest order; wherever these patients go, whichever place they enter, people turn away from them because of the urine leakage and the offensive smell; and they loose all dignity, as a woman and as a human being, with progressive downgrading medically, socially and mentally
the obstetric fistula is a major public health/social problem on the rise with a minimum of 1,500,000 patients in the whole of Africa and 250,000 in Nigeria alone,
prevention of the obstetric fistula, as achieved in the industrialized world over a period of 100 years, is only possible by establishing a network of 125,000 to 150,000 functioning obstetric units throughout inhabited (rural) Africa which **is a utopia** for another 100 years
the best rehabilitation into society is by a **successful closure** of the fistula and for the moment we have to concentrate upon this aspect
prevention of the social disaster is very well feasible by the **immediate management** by catheter and/or early closure; treatment has to start **the moment the girl/woman starts leaking urine**
this VVF Project aims to have an impact upon this hopeless situation by providing a VVF service, by establishing VVF centers, by training all kinds of doctors, nurses and paramedical personnel, by providing training materials and by health education with the emphasis on keeping it simple, safe, effective, feasible, sustainable and payable under African conditions

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
the 10 established centers are capable of dealing with the obstetric fistula within a radius of 100-120 km; however, this is not sufficient by far
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; a **new center** was opened in ABAKALIKI, **Ebonyi State**, in South-Eastern Nigeria
Ebonyi State
Dr Moses I Sunday ADEOYE set up a VVF unit within the Ebonyi State University Teaching Hospital; and a successful workshop was held
Jigawa State
Dr Said AHMED has been transferred to JAHUN General Hospital; a fine hydraulic operating table has been donated by the Federal Government
Kaduna State
the hospital is under a total structural face-lift which was highly needed; and a fine hydraulic operating table has been donated by the Federal Government
Kano State
by a major effort the situation is more or less under control; a large proportion of the patients come from within KANO city; they wait to look seeking professional help for obstructed labor
national training center
the training of doctors is functioning well but we could handle more nurses
Katsina State
still remains the base of all our activities; we do not notice yet a reduction in the number of patients coming from République du Niger; Family Care started a **real** rehabilitation program
international training center
the training of doctors is functioning well but we could handle more nurses; since the center becomes more and more known the interest is rising
Kebbi State
Dr Hassan WARA has been transferred to the Federal Medical Center as the Medical Director but he still continues to do some work in the fistula center

Sokoto State
one of the doctors will be trained intensively under the federal training program and in due time it will become a fine center
Zamfara State
the work is satisfactory though the center has been converted into a general hospital and another hospital for women and children is still under construction
MARADI/ZINDER in République due Niger
the new VVF center in ZINDER (funded by the French Government) was opened by the French Ambassador; with a small workshop organized by Dr Lucien DJANGNIKPO
new centers
after the new center in South-Eastern Nigeria, the next target is to establish a VVF center in Western Nigeria

traveling rhythm
it is not easy to travel by car 1,200-1,500 km a week, and an executive 4/WD Toyota Land/Cruiser is needed for safety and comfort

activities (see annexes)
surgery
over the year a total of 1,663 procedures were performed in the 10 different centers making a **grand total of 19,628 operations: 18,022 VVF-repair and 1,606 RVF-repairs**
postgraduate training
it poses an enormous continuous stress on all of us; the coordination was done by GHON
over the year a total of 22 doctors, 7 nurses and 5 medical students were trained making a **grand total of 466 persons: 229 doctors, 209 nurses and 28 other persons**
workshops
the consultant surgeon cofacilitated 2 workshops, one in ABAKALIKI (organized by Dr Moses I Sunday ADEOYE) and one in ZINDER (organized by Dr Lucien DJANGNIKPO) at opening the new center making a **grand total of 11 workshops**

research
this is a continuous process with ups and downs; the intention was, is and will be to make complicated things simple, safe, effective, feasible, sustainable and payable under African condition
general surgical principles
the **principles of septic surgery** cannot be overvalued since the vagina is not sterile: water-tight closure of the bladder, air-tight closure of the rectum whilst the anterior/posterior vagina walls are only adapted, half closed or left open
the **classification** in small, medium, large and extensive is useful in assessing tissue damage and extent of operation and with regards to prognosis
VVF
the **classification** in type I, IIAa, IIAb, IIBa, IIBb and III is well established now and very useful with regards to operation technique and prognosis
the **circumferential repair** by end-to-end vesicourethrostomy is the standard technique for the circumferential fistula type IIAb; the same principles are being applied in type IIBb fistulas where an additional urethra reconstruction is necessary
urethralization and anterior fasciocolposuspension is now standard in severe (post-repair) urine stress incontinence; it has highly promising theoretical and practical potentials with a total dryness in over 60% of the patients
the **immediate management** by catheter and/or early closure cured 3,000 patients and prevented them from becoming an outcast
urethra reconstruction with anterior fasciocolposuspension is now standard in type IIBa and IIBb fistulas with excellent results
preoperative high oral fluid intake ensures patient compliance, keeps her well hydrated during spinal anesthesia, makes it easier to find the ureters during operation and lessens the incidence of blocked catheters postoperatively

RVF
though the classification in type Ia, Ib, Ic, IIa, IIb, and III is useful with regards to operation technique no conclusions can be drawn regarding prognosis
sphincter ani rupture: the best result is by minimal dissection, meticulous closure of rectum and end-to-end adaptation of the sphincter ani muscle (no overlapping)

separation of repair and rehabilitation
since a professional surgeon is not a professional social worker and since he solely has to concentrate on his surgery (already difficult enough), the repair center has to be managed by the Ministry of Health and the rehabilitation center by the Ministry of Social Welfare: otherwise there will be conflict of interest

funding
basically the project is funded by the Federal Government and by the individual State Governments but this is not sufficient
further funding came from the Scandinavian Society Nigeria and from several Dutch NGOs among which the SK Foundation in combination with the TTT Foundation are the most important
AMDD funded hard- and soft-ware in order to develop multimedia training materials for present and future fistula surgeons; their consultant Dr Barbara KWAST visited the project to have a better insight into the problems

new nation-wide development
the Federal Ministry of Health, the Federal Ministry of Women Affairs and the individual State Governments are becoming more and more involved in the project
the Federal Ministry of Women Affairs and the Federal Ministry of Health donated fine equipment: operating tables, operating lamps, sterilizers and VVF-surgery instruments; and funds were provided for training of doctors and nurses
a 5-year plan was submitted to the Federal Ministry of Health to expand the VVF-training and -repair services throughout the Federation of Nigeria
the Federal Minister for Women Affairs visited Babbar Ruga Hospital to see with her own eyes what exactly the obstetric fistula means; she pledged total commitment
the Governor of Katsina State and his executive council made an inspection tour of the hospital; a promise was made to upgrade the facilities and to construct a rehabilitation center
the national agency poverty eradication program NAPEP donated vocational rehabilitation equipment such as sewing machines, knitting machines and materials for soap making
UNFPA developed a strategy for Nigeria and West Africa

new world-wide development
since UNFPA, AMDD and FIGO started an **initiative against fistula** in 2001 there has been a renewed international interest in the obstetric fistula; and it was high time
WHO organized a fistula surgeons experts meeting for 2 days (funded by AMDD) in order to prepare a manual

conclusion
though there is a continuous improvement in the quantity and quality of this project in terms of service, training and research far more has to be done to solve this major public health problem

20 years fistula surgery 1984-2003

	ebonyi		jigawa		kaduna		kano		katsina		kebbi		sokoto		zamfara		rép niger		
	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
total	**48**	**5**	**1,664**	**87**	**344**	**18**	**4,682**	**520**	**8,130**	**772**	**680**	**26**	**1,594**	**115**	**338**	**26**	**472**	**28**	**19,549**

total VVF-repairs and related operations: **17,952** **+** in workshops **70** **=** **18,022**

total RVF-repairs and related operations: **1,597** **+** in workshops **9** **=** **1,606**

grand total 19,628

success rate at VVF closure: 90% per operation at early closure: 95% per operation

success rate at RVF closure: 85% per operation

healed by catheter only: 806 patients

wound infection rate: < 0.5%

postoperative mortality rate: 0.5-1%

final success rate (after one or more operations): > 98%

final severe **incontinence rate** after successful closure: 2-3%

15 years fistula training 1989-2003

since it is by training that more and more people will involve themselves in the management of the obstetric fistula, it has become one of the corner-stones in the project

however, training drains all our energy whilst **2 operations less a day** are performed

the objectives of the training are to demonstrate/learn the complex trauma of the obstetric fistula and the noble art of its (surgical) management under primitive African conditions; each trainee is given a hand-out

the training of nurses and other (para)medical personnel can be done in groups by theoretical and practical sessions; this can be achieved either by formal training or during workshops

the training of doctors is purely individual since surgery is handwork and that has to be learned by the practice of performing the surgery themselves; during their training they can only be taught the **basic principles of obstetric fistula surgery**; this can be done by formal training exclusively; then they will know which fistulas they can handle themselves confidently and which fistulas they have to refer to a more experienced surgeon; spinal anesthesia is included in the training

the training of trainers will be even more time- and energy-consuming; their minimum requirements is 200-250 personal repairs before they can attend this training

a grand total of 466 doctors, nurses/midwives, other highly educated persons and paramedical staff were trained/attended our training program:

a total of **229 doctors**
- 105 general doctors with 3 years of surgical experience
- 93 consultant gynecologists/surgeons/urologists
- 29 senior registrars in gynecology/obstetrics
- 2 senior registrars in anesthesia

a total of **209 nurses/midwives**
- 142 pre- and postoperative nurses/midwives
- 53 operating theater nurses
- 13 anesthetic nurses

a total of **3 other academic persons**
- 1 anthropologist
- 1 physiotherapist
- 1 sociologist

a total of **5 medical students**

a total of **20 paramedical persons**

the hand-out to the trainees and other training materials are upgraded continuously in order to provide the latest information

20 years fistula research 1984-2003

this is a continuous process; based upon a meticulous documentation and evidence-based postoperative check-ups up to 6 mth postoperatively (with over 2.5 million parameters in total) the following could be developed and demonstrated

immediate management by catheter and/or early closure

preoperative high oral fluid intake

no routine antibiotics

spinal anesthesia

the vagina as route of choice

exaggerated lithotomy position

good access by episiotomy(ies)

classification of VVF

classification of RVF

one-layer bladder closure, water-tight

no MARTIUS fibrofatty pad graft

two-layer rectum closure, air-tight

half-open adaptation of anterior and/or posterior vagina wall

circumferential repair by end-to-end vesicourethrostomy

urethra reconstruction with fasciocolposuspension

a variety of rotation/advancement flaps

end-to-end adaptation of sphincter ani rupture

postoperative high oral fluid intake

vaginoplasty in vagina atresia

bladder drill as conservative treatment of stress incontinence

urethralization and fasciocolposuspension in severe stress incontinence

the obstetric fistula

incidence of obstetric fistula

a minimum of 2-5 per thousand deliveries when the mother survives in situations where there is no easy access to a functioning obstetric service; this means for Africa an annual incidence of some 100,000 to 150,000 new fistula patients

there is no relation to race, tribe, religion, culture, early marriage or anything else, **except for** early intervention by CS within 3 hours from the moment obtructed labor has developed

prevalence of obstetric fistula

in Africa a minimum of 1,500,000 fistula patients awaiting surgery

cause of obstetric fistula

obstructed labor (pressure necrosis) and/or cesarean section and/or primitive obstetric practices

mechanism of action in obstructed labor

the fetal head is too big or lies/presents abnormally and gets stuck inside the birth canal; then the soft tissues are compressed between the hard fetal skull and the hard maternal pelvic bones; if this is not relieved within 3 hours by cesarean section, tissue necrosis (no blood supply) occurs and a fistula develops

which structures are at risk

the anterior vagina wall/bladder/urethra are more at risk than the posterior vagina wall/rectum; also the lateral vagina walls (pubococcygeus musculature), cervix/uterus and deeper pelvic structures (nerves) are at risk

isolated VVF

this is the rule: 85% of the patients

combination VVF/RVF

the VVF is combined with RVF in some 10-15% of the patients

isolated RVF

very seldom except for sphincter ani rupture with rectum trauma

intravaginal lesions due to obstructed labor

always tissue loss of posterior urethra/bladder and/or of anterior rectum
always tissue loss of pubocervical fascia and/or prerectal fascia
always tissue loss of anterior and/or posterior vagina wall
vagina stricture
vagina stenosis
vagina shortening
vagina atresia
loss of cervix/uterus; seldom
(partial) loss of pubococcygeus musculature resulting in bare pubic bones
endometrium trauma with secondary amenorrhea
loss of labia minora

neurologic lesions due to obstructed labor
- peroneal nerve palsy (drop foot) due to compression of the sciatic nerve
- anesthesia of the vagina for up to 4-6 weeks
- sphincter ani palsy with stool_flatus incontinence
- saddle anesthesia
- stroke due to hypertension; very seldom

local extravaginal lesions due to prolonged obstructed labor
- pressure sores over sacrum, trochanter major, heel and scapula

systemic lesions due to prolonged obstructed labor
- poor general health and even cachexia due to the enormous trauma of unrelieved obstructed labor over days without help
- secondary amenorrhea due to excessive bloos loss (SHEEHAN syndrome)

lesions due to continuous urine leakage
- amonia dermatitis around the vulva

wet clothes with offensive odor

the **enormous trauma of prolonged obstructed labor**
- is such that over 95% of the infants die inside the mother; then the head (its largest circumference) shrinks and the mother may be able to push the dead child out
- many times the mother dies as well in the process; ??how often??
- if the mother survives it is for the prize of a dead child and an obstetric fistula ... and then the real trouble starts

prevention of the obstetric fistula
- the lesson learned from history is that this is only possible by establishing a network of functioning obstetric units where at any time day and night an emergency cesarean section can be performed within one hour
- for the inhabited parts of Africa this means a **network of 125,000 to 150,000 obstetric units** fully equipped and with highly trained personnel and evenly distributed throughout the rural areas to have half the coverage of obstetric care in the industrialized world

prevention of the woman from becoming an outcast
- this is very well feasible, even under primitive conditions, by the **immediate management by catheter and/or early closure**

obstetric fistula 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 (health) personnel.
Since it is handwork 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; after training they still can operate confidently only the simple fistulas.
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; otherwise it will be the blind teaching the lame how to cross the road.
For nurses and other health personnel it is sufficient to have an intensive exposure to the obstetric fistula combined with practical and theoretical lessons.

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 he must be interested in the work and not in the money of the training course. So any trainee should be screened well by his (her) employer and by the sponsoring agency.

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 200-300 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 (her) employer and by the sponsoring agency.

objectives of training
To learn the complex trauma of the obstetric fistula and the basic principles of its (surgical) management

duration of training
For doctors without or with low experience in fistula surgery a period of 1.5-2 mth will be sufficient if there are enough patients for them to operate upon; if they need more training after 1-2 years and 100-200 repairs, they can be trained again for 1 mth.
For nurses and other (health) personnel a period of 1 mth will be sufficient if there are enough patients for them.
For future trainers the best would be an initial period of 1 mth, then after 6-8 mth again 1 mth and if necessary again 1 mth after 6-8 mth.

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, from placing the patient on the operating table until the very end of the operation; after 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 the obstetric fistula, 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 program.
With 300 repairs a year there are 45-60 operations available for the doctor trainees, or only 1 repair a week.
This would mean that the center can handle 5-6 doctor trainees a year, and that only 1 trainee can be admitted at the same time.
During a training period of 2 months, a doctor 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 can attend the postgraduate course.

urethralization and fasciocolposuspension in postrepair total urine intrinsinsic_stress incontinence with a too short nonfunctioning urethra

kees waaldijk MD PhD

introduction

One of the major problems in obstetric fistula surgery is the occurrence of postrepair total urine intrinsic_stress incontinence. Though the fistula has been closed the patient continues to leak urine whilst lying, sitting, standing and walking as if there still were a fistula since the intrinsic continence mechanism and the stress continence mechanism are not functioning. For the patient it is terrible since she and her community do not consider her as healed and she remains an outcast. For the surgeon it is frustrating since (s)he did a good job, however not good enough: repair successful but patient leaking.

The treatment of postrepair incontinence is even more complicated than that of genuine incontinence, since there is anatomic tissue loss of the intrinsic and stress continence mechanisms. This tissue loss may involve the bladder neck, urethra, pubocervical fascia, pubourethral ligaments, trigonal ring, detrusor loops and even the pubococcygeus musculature; it may be partial or total and can occur in complete combination. In its extreme form there is an empty pelvis with bare pubic bones and bare pubic symphysis, even the periost may be lost; with an additional neurogenic component due to trauma to the sacral plexus during obstructed labor. Added to the original trauma of pressure necrosis is the surgical trauma of the repair(s). Especially when what is left of the urethra is too short, i.e. $\leq$ 1.5 cm, it is difficult to provide a solution; and this short urethra is often wide open as well.

There are a complex of many factors (Table I) which determine if a woman is continent or not (Ref 1, 2, 3, 4). However, there are only four which can be approached surgically at the moment: length of urethra, diameter of urethra, support of urethra and position of urethra in relation to the posterior pubic symphysis.

Table I
urine continence mechanism in the female

This study aims to correct these four factors at the same time and in a physiologic way: a) to lengthen the urethra proximally by urethralization of the bladder neck, b) to narrow the diameter of the urethra, c) to strengthen the pubocervical fascia for urethra support and d) to reposition the urethra by suturing the fascia onto the arcus tendineus of the levator ani muscle.

These four corrections will contribute to the anatomic background for the physiologic processes of the intrinsic and stress continence mechanisms.

A preliminary report is given.

background

The conditions in Kano and Katsina in developing Africa are very primitive and cannot be compared to those of (university) hospitals in the industrialized world. The laboratory is either not present, not functioning or not reliable. The sterility is household clean and the principles of septic surgery have to be applied strictly. The electricity and water supply is totally unreliable; and the operating lights are malfunctioning. Therefore the majority of operations are performed in daylight by placing

the operating table near the window. Since the hospitals are run by the government the operation and operation materials are free of charge but patients have to buy their own FOLEY catheter. The operations are performed by the surgeon with only a theatre nurse for instrumentation. Postoperative nursing care is poor. However, due to strict organization and strict discipline the two centers have become the backbone of the National VesicoVaginal Project where over the last 20 years more than 19,000 fistula repairs and fistula related operations have been performed with excellent results within the scarce resources of developing Nigeria.

patients

From February 2001 thru November 2002 a total of 135 patients with postrepair total urine intrinsic_stress incontinence have been treated in the fistula centers in Katsina and Kano in Northern Nigeria. Twenty of the patients had been operated successfully for their fistula and were continent until they developed their urine incontinence during a subsequent delivery without developing a fistula. The age of the patients varied from 15 to 44 yr, the parity at which they developed their fistula varied from I to XIV, and the duration of leaking urine varied from 5 mth to 18 yr. The original fistula was small ($\leq$ 2 cm) in 9 (6.7%), medium (2-3 cm) in 47 (34.8%), large (4-5 cm) in 28 (20.7%) and extensive ($\geq$ 6 cm) in 51 (37.8%) of the patients. In all the patients the fistula involved the closing mechanism of the bladder and urethra, in 56 (41.5%) of the patients there was a (sub)total involvement of the urethra whilst 88 patients (65.2%) had a circumferential fistula.

The preoperative functional length of the urethra was $\leq$ 1.5 cm in 96 patients (71.1%) and normal (4 cm) in only 1 patient who had had a urethra reconstruction, see also Table II. In all the patients the urethra was non-functioning and they were leaking urine almost continuously thru the external urethra opening at rest even in the exaggerated lithotomy position.

preoperative preparation

Since the patients are highly intelligent they notice that when they drink a lot they will leak a lot, and when they drink little they will leak little. So after some time they will restrict their oral fluid intake to the minimum. The first priority is to rehabilitate the patients by instructing them to drink abundantly and make them understand that they have to leak more before their condition can be handled. Under supervision they have to attend a class for 1-2 wk, and only if they really drink they are operated. This will make them comply as well in the immediate postoperative period and for bladder drill once the catheter has been removed.

methods

Under spinal anesthesia and in the exaggerated lithotomy position a FOLEY Ch 18 catheter is inserted, the bladder drained and the urethra length measured in cm by taking the distance from the external urethra opening to the balloon.

The labia are sutured to the innerside of the legs, if necessary an episiotomy is performed and a self-retaining weighted AUVARD speculum inserted into the vagina.

A transverse curved incision is made in the ruga folds with the tip at 1.5-2 cm from the external opening, and the anterior vagina wall dissected from the underlying pubocervical fascia by scalpel and a pair of sharply curved THOREK scissors. Then bilateral longitudinal incisions are made in the urethrovesicopelvic ligaments (bilateral extension of pubocervical fascia), the paravesical spaces opened, and the bladder mobilized from the pubic bones and pubic symphysis. If the bladder is traumatized at dissection it is repaired immediately. A plication (rhaphy) of the urethra and pubocer-

vical fascia is performed at 0-4 cm from the external urethra opening by 3 interrupted polyglycolic acid sutures at 0, 2 and 4 cm followed by a continuous suture from 0 to 4 cm. A metal dilator HEGAR size 7 is passed thru the urethra to check for obstruction. The rhaphy is technically performed by multiple small superficial bites to avoid the ureters and the underlying detrusor muscle. The result should be a proximal functional lengthening of the urethra by urethralization of the bladder neck, a narrow urethra by urethrorrhaphy and a good fascia plate by fasciorrhaphy. The bladder is filled with 150 ml of water, the FOLEY catheter removed and the functional urethra length measured. Then it is checked if urine comes out of the external urethra opening at rest (instrinsic continence mechanism) and at cough with suprapubic pressure (stress continence mechanism). After this a bilateral fixation of the urethrovesicopelvic ligaments_pubocervical fascia together with the anterior vagina wall is performed onto the pubic bones, pubococcygeus musculature and arcus tendineus preferably at 2-3 and 4-5 cm from the external urethra opening by 2 nylon sutures 2/5 at each side. These sutures are first placed with a sharp DESCHAMPS aneurysm needle thru the pubococcygeus musculature (if present), arcus tendineus of the levator ani muscle and pubic bones periost. Then both ends of the sutures are threaded thru the pubocervical fascia_urethrovesicopelvic ligaments and the anterior vagina wall taking care to pick up these structures laterally. When all the four sutures have been placed in situ then they are tied making sure there are no loose loops. If placed well the anterior vagina wall is adapted and needs no further suturing. Again the functional urethra length is measured since this may be increased by stretching and/or compression. The FOLEY catheter is reinserted for 2 wk, the episiotomy closed and the vagina packed loosely with a gauze soaked in acriflavine which is left in until the following morning.

During the operation the following parameters are also obtained. The distance between the external opening and cervix is measured in cm. The paravesical spaces are classified as free, scarred or empty or empty and scarred. The urethra tissue and pubocervical fascia tissue are classified as good, medium or poor. The resulting fascia plate is classified as good, medium or poor. The pubococcygeus muscle is classified as good, medium or poor (or no). Depending on the fixation the suspension is classified as static (only to the pubic bones) or dynamic (also to the pubococcygeus muscle). If there is cervix prolapse or if the anterior vagina wall is too short the cervix is fixed together with the fascia in the same manner.

The technical principles of the operation are presented in diagrams, see fig. 1-8.

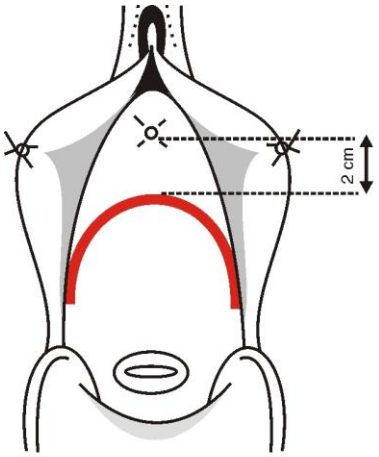
Fig I to VIII

postoperative period and check-ups

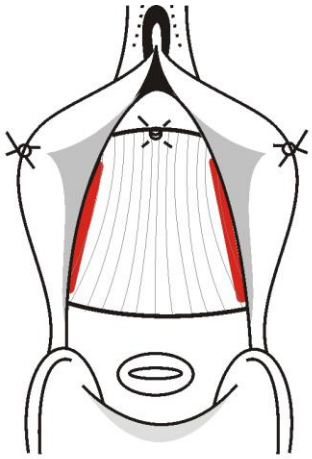
The FOLEY catheter is left in situ for 2 wk and the patient instructed to drink to ensure an oral fluid intake of 6-8 liters per day in order to produce at least 4,000-6,000 ml urine per 24 hr to keep the catheter open and to prevent ascending urinary tract infection. Antibiotics are not indicated unless the patient should develop a specific infection such as pneumonia. The patient is fully mobilized the day after operation with urine freely draining into a pot.

Once the catheter is removed the patient is instructed to continue drinking and to pass urine every 10-15 min under supervision for 2 days.

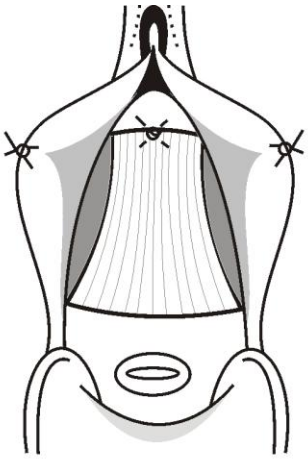
At discharge from the hospital the patient is instructed to continue drinking and passing urine regularly, to refrain from sexual intercourse for 6 mth, to come regularly for check-ups and to come for removal of the nylon sutures after 6 mth at which time a final examination is made. She is also instructed to report at 3-mth amenorrhea and to go to the hospital as soon as labor pains start.



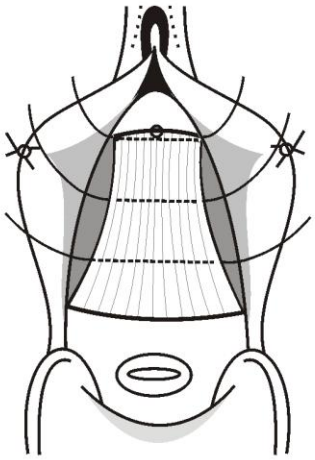
incision
anterior vagina wall



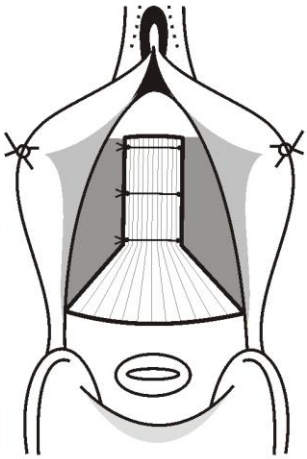
incision
urethrovesicopelvic ligaments



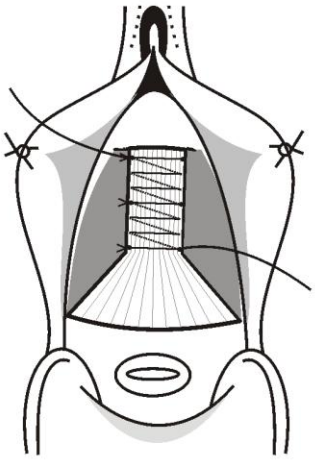
open paravesical spaces
bladder mobilized



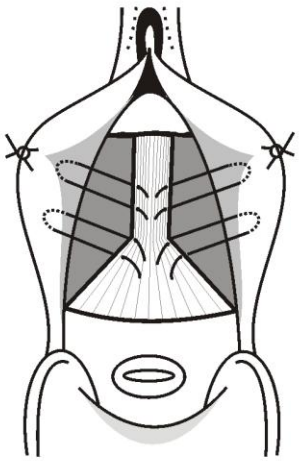
rhaphy sutures
at 0, 2 and 4 cm



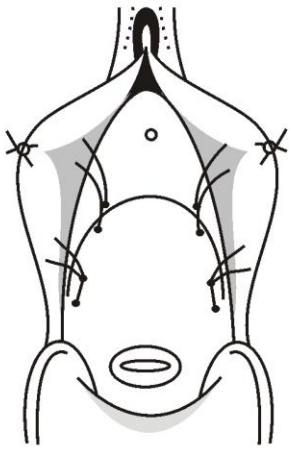
rhaphy sutures tied
urethralization



continuous rhaphy suture
at 0-4 cm



suspension sutures
at 2-3 and 4-5 cm



suspension sutures tied
anterior vagina wall adapted

results

Out of the 135 patients, 83 (61.5%) were completely dry, 14 (10.4%) were leaking slightly whilst standing and walking, 23 (17.0%) were leaking continuously whilst standing and walking but not whilst lying and sitting, 14 (10.4%) were leaking urine continuously as before the operation, and 1 (0.7%) developed another fistula. Even out of the 17 patients where this operation was considered a last resort, 7 were completely dry and 1 was leaking urine slightly whilst standing and walking.

The functional urethra length increased in 113 patients after urethralization to at least 2 cm and in a great part of the patients even more after fasciocolposuspension as shown in Table II.

Table II

functional urethra length in cm

	≤ 0.5	1	1.5	2	2.5	3	3.5	4
before operation	17	61	18	29	3	6	-	1
urethralization	-	-	2	16	21	34	11	51
fasciocolposuspension	-	-	1	9	10	28	3	84

The suspension was dynamic in the 64 patients whithout major pubococcygeus muscle loss and static in the 71 patients with major pubococcygeus muscle loss .

The bladder was traumatized during dissection in 8 patients and was repaired immediately; however 1 patient developed a fistula.

In 18 patients the cervix was suspended in the same way as well either because there was 2° cervix prolapse or the anterior vagina wall was too short.

There was no major intra- or postoperative bleeding, and postoperative wound or systemic infection did not occur; also there was no catheter blockage.

Despite instructions already 20 patients became pregnant within 2-6 months after operation without deterioration of their continence condition. Out of the 9 patients who reported after delivery, 5 had developed a new fistula and 1 total urine instrinsic-stress incontinence whilst 3 were completely dry.

discussion

With a personal experience of over 13,500 repairs, the author has been faced with this problem over many years and many operation techniques were used. This is the first operation technique which gives good consistent results considering the enormous trauma to the closing mechanism though it needs continuing perfection.

Urethralization and fasciocolposuspension has become the standard technique in Northern Nigeria for total urine instrinsic_stress incontinence. Even as a last resort it can be applied and if this fails then urine diversion should be contemplated.

The strange thing is that the same operation technique was already used by the author in 1988 with good results, but at that time the theoretical insight of the author was not sufficient, and it was not pursued and then restarted in 2001.

Long-term results are difficult to obtain in developing Africa, especially since the first priority of the patient after a successful operation is to go back to her husband or to remarry in order to get pregnant as soon as possible since a woman without a live child is a disgrace to the whole community. However, besides the normal ageing processes and the trauma of subsequent deliveries, no deterioration of these results is expected.

The term urethralization whereby the bladder neck becomes functionally the proximal urethra has been chosen as opposite to vesicalization whereby the proximal urethra becomes functionally part of the bladder as may be found in patients with genuine urine stress incontinence. By proximal lengthening of the urethra, by narrowing its diameter and by strengthening the pubocervical fascia the intrinsic continence mechanism is reinforced sothat coaptation of the anterior urethra wall against the fascia plate which stabilizes the posterior urethra wall can take place. This is the most important continence mechanism in the female, even during stress. By fasciorrhaphy and fasciocolposuspension the stress continence mechanism is reinforced as a back-up mechanism since the mid- and distal urethra is compresed by the fascia against the caudad third of the posterior pubic symphysis. During stress, contraction of the pubococcygeus muscle will stretch the pubocervical fascia and will move it anteriorly whereby the compression will be increased whilst reflex contraction of the fast-twitch horse-shoe shaped striated muscle fibers of the urethra will increase the force of coaptation. This takes place a split hundreds of a second before the rise in intravesical pressure and keeps the urethra closed during stress.

Since the autologous pubocervical fascia, with some elasticity, is used the urethra support can be classified as dynamic. This is opposite to the nonelastic autologous or synthetic material used in sling operations and other procedures where the urethra support is classified as static. The physiologic suspension where the fascia will become adherent to the pubococcygeus muscle is classified as dynamic. This is opposite to the fixation to the pubic bones or to any other static material such as ligaments where the suspension is classified as static. The best is a dynamic urethra support in combination with a dynamic physiologic suspension. The level of suspension is physiologic as opposite to the nonphysiologic more cephalad suspension of other techniques to the anterior abdominal musculature or iliopectineal ligament.

Since dynamic autologous material is used for a physiologic dynamic suspension the incidence of outflow obstruction will be low, and was not noted in any of these 135 patients. Since a physiologic dynamic suspension is aimed at and since the detrusor muscle is avoided at fasciorrhaphy, the incidence of urge incontinence will be low, and none of these patients complained of it.

The variety of qualitative and quantitative tissue loss in the obstetric fistula is such that it is difficult to compare one patient with the other and to predict in which patient it will work and in which patient not. In order to have a more objective method the following parameters are collected during the operation. The functional urethra length is measured in cm before and after urethralization and again after fasciocolposuspension. The distance between the external opening and cervix is measured in cm. The bladder capacity is determined as small, moderate, normal or increased. The paravesical spaces are classified as free, scarred or empty (pubococcygeus muscle loss) or empty and scarred. The urethra tissue is classified as good, medium or poor; the same applies to the pubocervical fascia. The resulting fascia plate is classified as good, medium or poor. The quality of the pubococcygeus musculature is classified as good, medium or poor/nonexistent. The position of the urethra in relation to the symphysis is determined at the level of the urethrovesical junction as good if against te middle third of the posterior symphysis, as acceptable if not against the middle third or if against the middle/caudad third of the posterior symphysis and as poor if away from the symphysis or if against the caudad third of the symphysis. The suspension is classified as dynamic if the fixation is onto the pubococcygeus musculature and as static if the fixation is onto the pubic bone since there is major pubococcygeus muscle loss. The number of patients is not sufficient for a statistical evaluation, as well it would be too complicated for this preliminary report.

The best result is a narrow urethra of good tissue quality with a functional length of at least 3 cm where the urethrovesical junction is elastically elevated against the middle third of the posterior pubic symphysis by a good dynamic fascia plate and a dynamic fasciocolposuspension to the arcus tendineus of the levator ani muscle.
Since this technique works in patients with severe tissue loss of the continence mechanism, it will work in other patients as well who have a malfunctioning closing mechanism without tissue loss. Out of 41 patients with postpartum total intrinsic_stress incontinence without having had a fistula but continuously leaking urine, not included in this study, 40 were completely dry after operation. Since it works in these patients it will work in patients with genuine urine stress incontinence who only leak urine during stress.
The whole technique or part of the technique is used by the author in other conditions as well with good results such as female epispadias, cystocele, total or subtotal cervix prolapse, minute fistulas with a wide open non-functioning urethra and fistulas where a urethra reconstruction is needed. All the 7 patients with female epispadias and total urine intrinsic_stress incontinence, not included in this study, where the whole technique or part of the technique was used were completely dry, in one patient even after 6 subsequent deliveries. The advantage in cystocele is also that no valuable anterior vagina tissue is excised and that the resulting operation scar lies within the ruga folds sothat the incidence of dyspareunia will be low.

conclusion
Urethralization and fasciocolposuspension is effective and has highly promising theoretical and practical potentials not only for obstetric fistula surgery but also for surgery in other conditions such as genuine urine intrinsic_stress incontinence, genuine urine stress incontinence, female epispadias, cystocele and total 3° cervix prolapse.

first edition: 20th of August 2003 kees waaldijk MD PhD

Special Fistula Unit

Ebonyi State University Teaching Hospital

ABAKALIKI

report on VVF/RVF repairs

2002-2003

VVF-repairs:	48
RVF-repairs:	5
total	**51 repairs**

this unit was set up during 2002-03 by Dr Moses I Sunday ADEOYE from the Department of Obstetrics and Gynecology

a 3-day workshop was held from 16th to 19th of October 2003 as organized by Ebonyi State University Teaching Hospital, Ebonyi State Government and UNDP

more staff, doctors and nurses, have to be trained

surgeon: Dr Moses I Sunday ADEOYE; once in a while chief consultant

Fistula Units

B_KUDU, HADEJIA and JAHUN

Jigawa State

report on VVF/RVF repairs

1996-2003

This is completely the work of Dr Said AHMED who is involved in the VVF/RVF-repair since 1991. After his latest reporting we had to adjust the numbers of VVF/RVF-repairs done within Jigawa State. Since he returned from federal to state services the VVF-surgery will be concentrated in Jahun General Hospital.

VVF-repairs:	1,664
RVF-repairs:	87
total	**1,751 repairs**

from next year onwards the fistula surgery will be concentrated in JAHUN General Hospital

more staff, doctors and nurses, have to be trained

surgeons: Dr Said AHMED, Dr Isah ADAMU and Dr Salisu BABURA

Kofan Gayan Hospital

ZARIA

Kaduna State

report on VVF/RVF repairs

1998-2003

VVF-repairs:	344
RVF-repairs:	18
total	**362 repairs**

the hospital is still under a complete structural reconstruction; it is the only hospital where systematically a caesarean section is performed in future deliveries following a successful repair

more staff, doctors and nurses, have to be trained

in principle the team from Babbar Ruga Hospital comes once every 2 weeks to perform the “simple” surgery; the “difficult” surgery is referred to KATSINA

also a VVF-repair service has been started in KADUNA Nursing Home by consultants trained within the National VVF Project: figures are not available

surgeons: Dr Halliru IDRIS, Dr Abdulrasheed YUSUF, Dr Joel ADZE, Dr Julis GAJERE and chief consultant

Laure Fistula Center Murtala Muhammad Hospital

KANO

Kano State

report on VVF/RVF repairs

1990-2003

VVF-repairs:	4,682
RVF-repairs:	520
total	**5,202 repairs**

the obstetric fistula service within Kano State should be a model for the other states since the rehabilitation center annex hostel is outside but near the hospital and managed by the Ministry of Social Welfare; so there is no conflict of interest; the cooperation is fine

it is an excellent place for training nurses and other health personnel, and plays a major role in the training of doctors

other VVF-repair services have been set-up in Aminu Kano Teaching Hospital, Nassarawa Specialist Hospital and other hospitals, the doctors have been trained within the National VVF Project

still more staff, doctors and nurses, have to be trained

surgeons: Dr Imam AMIR, Dr Said AHMED, Dr Zubairu ILIYASU, Dr Kabiru ABUBAKAR, Dr Idris ABUBAKAR, Dr Hauwa ABDULLAHI, Dr Muktar HAMZA, Dr Hadiza GALADIMA, Dr Halliru IDRIS. Dr Abdulrasheed YUSUF, chief consultant and others

Babbar Ruga Fistula Hospital

KATSINA

Katsina State

report on VVF/RVF repairs

1984-2003

VVF-repairs:	8,130
RVF-repairs:	772
total	**8,905 repairs**

there are three main services within the hospital: obstetric fistula center, referral center for leprosy and referral center for tuberculosis; plans have been prepared to expand it further into an infectious disease hospital for Katsina State

it is of utmost importance to construct a hostel annex rehabilitation center on the hospital land but outside the hospital premises and managed by the Ministry of Social Welfare to avoid conflict of interest

all requirements have been fulfilled to function as an (inter)national obstetric fistula training center acknowledged by WHO with good infrastructure

also some fistula surgery is being performed in the Maternity Hospital; the doctors have been trained within the National VVF Project

still more staff, doctors and nurses, have to be trained

surgeons: Dr Yusha'u ARMIYA'U, Dr Shehu BALA, Dr Halliru IDRIS, Dr Jabir MOHAMMED, Dr Aminu SAFANA, Dr Isah SHAFI'I, Dr Abdulrasheed YUSUF, chief consultant and others

Special Fistula Center

B_KEBBI

Kebbi State

report on VVF/RVF repairs

1996-2003

VVF-repairs:	680
RVF-repairs:	26
total	**706 repairs**

the center has been set up and is still being managed by Dr Hassan L WARA who performs most surgery

it needs renovation with regards to equipment and manpower

definitely, more staff, doctors and nurses, have to be trained

fistula surgeon: Dr Hassan WARA and once in a while chief consultant

Maryama Abacha Hospital

SOKOTO

Sokoto State

report on VVF/RVF repairs

1994-2003

VVF-repairs:	1,594
RVF-repairs:	115
total	**1,609 repairs**

it is a very important center with good facilities and a high-quality service where many patients present for surgery; it needs further development with regards to manpower in order to perform the 250-300 repairs needed

the team from Babbar Ruga Hospital makes a major effort to come every 2 weeks for 2-3 days of surgery

more staff, many doctors and many nurses, have to be trained

one of the doctors has already been selected within the federal training program

surgeons: Dr Zubairu ILIYASU, Dr Bello CHAFE, Dr Abdulrasheed YUSUF, Dr Halliru IDRIS and chief consultant

Faridat Yakubu VVF Hospital

GUSAU

Zamfara State

report on VVF/RVF repairs

1998-2003

VVF-repairs:	331
RVF-repairs:	26
total	**357 repairs**

since the existing general hospital has become a federal center and then this hospital has become a general hospital, another separate hospital for women and children is under construction where future VVF-surgery is planned

several doctors have been trained but they left and went abroad for further training

definitely, more staff, doctors and nurses, have to be trained

surgeons: Dr Halliru IDRIS, Dr Abdulrasheed YUSUF and chief consultant

Maternité Centrale/Centre Hospitalier Départemental

ZINDER/MARADI

République du Niger

report on VVF/RVF repairs

1996-2003

VVF-repairs:	472
RVF-repairs:	28
total	**400 repairs**

this service has been set up by Dr Lucien DJANGNIKPO, and a new 20-bed VVF unit was opened this year in ZINDER by the French Ambassador

it has all the requirements to become in the near future the fistula training center for République du Niger

the team from Babbar Ruga Hospital tries to come once a month or every 6 weeks

surgeons: Dr Lucien DJANGNIKPO, Dr Halliru IDRIS and chief consultant

operations by chief consultant

	VVF	RVF	total
Nigeria			
ABAKALIKI	17	5	22
BIRNIN_KEBBI	71	10	81
GUSAU	191	20	211
HADEJIA – JAHUN	-	-	-
KANO	3,749	496	4,245
KATSINA	6,786	753	7,539
SOKOTO	746	100	846
ZARIA	188	15	203
République du Niger			
MARADI	72	6	78
ZINDER	169	15	184
Kenya			
MACHAKOS	13	2	27
Tanzania			
DAR ES SALAAM	25	2	27
MWANZA	14	2	16
Burkina Faso			
DORI	18	3	21
total	**12,509**	**1,429**	**13,488**

performance of trainees

Dr Said AHMED	2,000 repairs
Dr Immam AMIR	800 repairs
Dr Halliru IDRIS	800 repairs
Dr Hassan WARA	750 repairs
Dr Abdulrasheed YUSUF	600 repairs
Dr Zubairu ILIYASU	550 repairs
Dr Aliyu SHETTIMA	450 repairs
Dr Jabir MOHAMMED	300 repairs
Dr Lucien DJANGNIKPO	250 repairs
Dr IDRIS ABUBAKAR	150 repairs
Dr Aminu SAFANA	150 repairs
Dr Meryl NICOL	100 repairs
Dr Isah SHAFI'I	100 repairs
Dr Fred KIRYA	80 repairs
Dr Julius KIIRU	70 repairs
Dr Khisa WAKASIAKA	70 repairs
Dr Odong EMINTONE	50 repairs
Dr Moses ADEOYE	30 repairs

other trainees: no data available

Ebonyi State VVF Workshop

Ebonyi State University Teaching Hospital

ABAKALIKI

thursday 16th thru saturday 19th of october 2003

report

kees waaldijk, MD PhD

chief consultant fistula surgeon

Ebonyi State VVF Workshop

Ebonyi State University Teaching Hospital

executive summary

since the obstetric fistula is rampant throughout the whole Federal Republic of Nigeria it constitutes a major health problem in Ebonyi State as well; contrary to the belief of many people who seem to think that it is eradicated and not existing in the Eastern, Southern and Western parts of Nigeria

this was demonstrated by the fact that some 150 patients had been collected within a period of a couple of weeks for us awaiting surgery

having trained one doctor and two nurses from Abakaliki, the chief consultant and his team were invited as facilitators for a surgical workshop as organized by UNDP and the management of Ebonyi State University Teaching Hospital

this workshop can be considered as a pilot project to expand our service from the northwest to other parts of Nigeria by establishing first a vvf-repair service and later on a vvf-training unit in the southeast

during a **3-day workshop** we were able to perform a **total of 21 operation (16 vvf-repairs and 5 rvf-repairs)** and **1 catheter treatment** in a **total of 17 patients**, though the actual duration was 6 days including the 3 days of travelling

we wish Dr Sunday Adeoye and his team lots of success with their project; in order to help the obstetric fistula patients in their area

though we are willing to assist them this can only be done on an irregular base considering the long and dangerous roads to cover a distance of almost 1,100 km

Ebonyi State VVF Workshop

Ebonyi State University Teaching Hospital

day-to-day report

introduction
the obstetric fistula is rampant throughout Nigeria, from north to south and from east to west, contrary to the belief of many; as demonstrated by the fact that within a couple of weeks some 150 patients were collected in Ebonyi State
this workshop as organized by Ebonyi State Government and UNDP was a pilot project to expand our service to the southeast in order to establish first a vvf-repair service and later on a vvf-training unit which actually were long overdue
having trained a consultant gynaecologist and two nurses from Abakaliki as a team for taking charge of the obstetric fistula, they organized things on ground and called upon the national vvf team to assist them

day-to-day report

tuesday 21st october 2003
traveling from Abuja by car on a dangerous road to Lokoja, the fish town, where we tried to get some fish for our meal but having visited some 8 restaurants we gave up

wednesday 22nd october 2003
we continued our trip from Lokoja via Enugu to Abakaliki where we warmly received by dr sunday adeoye and were directed to the excellent government lodge; there were some 150 patients waiting for us; within the hospital a small operation theatre had been established especially for fistula surgery but the conditions were rather primitive

thursday 23rd october 2003
surgery **five operations:** one patient with type I fistula, one patient with CS fistula type I, one patient with type I fistula in combination with sphincter ani rupture type IIb, one patient with type I fistula operated 1x and wide open urethra_euo
wardround

friday 24th october 2003
wardround
surgery **nine operations + one catheter treatment:** one patient with type I fistula, one patient with type IIAa fistula, one urethralization in patient with post IIAa repair incontinence, one patient with extensive IIBa fistula and mutilated sphincter ani rupture, one patient with post IIAa incontinence and loose sphincter ani following repair, one patient with type IIAa fistula operated 2x, one patient with type IIAb fistula leaking more than 30 years and operated 2x; catheter treatment of type IIAa fistula of 30-day duration
wardround

saturday 25th october 2003
wardround
surgery **seven operations:** one patient with mutilated type IIAa fistula operated 1x, one patient with type IIAa fistula, one patient with extensive IIAb fistula and extensive sphincter anio rupture with colostomy operated 2x, one patient with mutilated type IIAb fistula operated 2x, one patient with type IIAa fistula and mutilated sphincter ani rupture operated 1x
wardround

sunday 26th october 2003
we left abakaliki early in the morning at around 7.30 and after a long journey arrived safely in Kano at around 21.00 hr so we could continue our normal program in Kano on monday the following morning

conclusion
it was a fine workshop where **21 operations (16 vvf-repair and 5 rvf-repairs)** and **1 catheter treatment** were performed in 17 patients; however considering the distance this can only be done on an irregular base
now we hope and expect that the people from Ebonyi State will establish a vvf-repair service first and later on a vvf-training unit for the southeast part of Nigeria

kees waaldijk MD PHD
chief consultant surgeon
15th november 2003

many thanks to
Dr Sunday Adeoye and all the staff of the vvf-unit of ebonyi state university teaching hospital for their organization/management/dedication/support
UNDP for their financial support
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TTT Foundation for their continuous support

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