

The immediate surgical management of fresh obstetric fistulas with catheter and/or early closure

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Abstract

OBJECTIVES: To determine prospectively if the immediate surgical management of obstetric fistulas within the first 3 months by catheter and/or early closure is effective. **METHODS:** During a 10-month period (August 1992 through May 1993), a total of 170 patients with an obstetric fistula of less than 3 months' duration were treated. A catheter was inserted if the fistula was necrotic, and as soon as the fistula edge was clean an early closure was performed unless the fistula had healed already. **RESULTS:** The fistula was closed in 156 (91.8%) of the 170 consecutive patients: with continence in 146 (93.6%), minimal/mild incontinence in 7 (4.5%) and severe incontinence in 3 (1.9%) of the closed fistulas. In 14 patients (8.2%) the fistula was not closed at first intention; however, 12 were closed at the second attempt. **CONCLUSION:** The immediate surgical management proved highly effective in terms of closure and continence.

Introduction

It is a generally accepted rule to wait with the repair of an obstetric vesicovaginal fistula (VVF) for a minimum period of 3 months until all the tissue reactions have subsided [1–6].

The large number of patients coming to the fistula hospitals in KANO and KATSINA in Northern Nigeria, more than 1000 a year at present, prompted a search for different methods of treatment for obstetric fistula patients.

Firstly, the insertion of an indwelling bladder catheter promoted the spontaneous healing of the smaller fistulas, i.e. up to 2 cm diameter in size, in some 50–60% of the patients [7].

Slowly, step-by-step, this catheter treatment was improved further by adaptation of the fistula edge (at first one suture only, later more sutures if needed), freshening of the edge and everting closure of the anterior vagina wall, and freshening, minimal dissection and everting closure of the anterior vagina wall. At each step the success rate improved, and also larger fistulas could be treated.

Logically, the latest development was to perform a 'full' repair as soon as the slough had disappeared as described in this prospec-

Keywords: Obstetric fistula; Early closure; Catheter.

tive study, irrespective of size and location of the fistula.

Materials and methods

During the 10-month period from August 1992 through May 1993 a total of 170 patients with a fresh obstetric fistula of less than 3-month duration were treated.

At first presentation of the patient an extensive history was taken and a vaginal examination performed together with an assessment of her general condition and of other lesions due to obstructed labor.

The age of the patients ranged from 13 to 41 years, the height of the patients varied from 137 to 172 cm, and the parity of the patients varied from 1 to 15.

Twenty patients (11.8%) presented with a rectovaginal fistula (RVF) as well. Twenty-eight patients (16.5%) had other vaginal lesions like stenosis, shortening, stricture or pubococcygeus muscle loss.

In 105 patients (61.8%) signs of uni- or bilateral peroneus nerve trauma were found, ranging from 0 (no function at all) to 4 (minimal function loss) on the Medical Research Council scale. Six patients could not stand or walk, and could only crawl.

The duration of leakage at catheter if healed by catheter only, or at repair, if not healed by catheter ranged from 6 up to 75 days (Table 1).

The fistulas were divided into 6 types according to the following classification as used by the author in all vesicovaginal fistula examinations [7,8] (Table 2).

The size of the fistulas, as measured between fully relaxed and fully stretched, varied from 0.1 cm to 8 cm, as presented in Table 3.

Table 1. Duration of leakage in days at catheter/surgery.

	0-15	16-30	31-45	46-60	61-75	total
<i>N</i>	19	56	44	33	18	170
(%)	11.2	32.9	25.9	19.4	10.6	100

Table 2. Classification of fistulas according to anatomic/physiologic location.

	I	IIAa	IIAb	IIBa	IIBb	III	Total
<i>N</i>	30	95	42	3	—	—	170
(%)	17.6	55.9	24.7	1.8	—	—	100

I, fistulas not involving closing mechanism; II, fistulas involving closing mechanism A without (sub)total urethra floor loss; a, without circumferential defect; b, with circumferential defect; B, with (sub)total urethra floor loss; a, without circumferential defect; b, with circumferential defect; III, miscellaneous, e.g. ureter and other exceptional fistulas.

The surgical management of these fistulas was as follows. When there was still necrosis, a Foley catheter Ch 18 or 20 was inserted and the patient instructed to drink as much as possible.

The patient was examined further once a week to determine the prospects of spontaneous healing or surgery.

If the fistula had healed already by catheter as confirmed by the instillation of gentian violet into the bladder and making surgery superfluous, the catheter was left in for 2 more weeks before it was removed. This procedure was followed in 21 of the 170 patients.

If it had not healed by catheter, as soon as the slough had disappeared and the fistula edge was clean, the patient was considered to be a candidate for early closure.

The patient was placed upon the operation table in the exaggerated lithotomy position with the legs flexed and slightly abducted in stirrups; exactly the same as for a VVF-repair. An AUVARD weighted speculum was inserted into the vagina, and a careful examination made and a classification done. The fistula edge was freshened and a minimal dis-

Table 3. Fistula size in centimeters

	<1	1	2	3	4	5	≥6	Total
<i>N</i>	21	46	44	21	22	7	9	170
(%)	12.4	27.1	25.9	12.4	12.9	4.1	5.3	100

section of anterior vagina wall from bladder/urethra performed. The bladder/urethra was closed, most of the time transversely, with a single layer of interrupted inverting chromic catgut 00. The anterior vagina wall was closed with interrupted everting chromic catgut 0 and supramid 0 taking very good bites. The bladder capacity was estimated by measuring the distance from the external urethra opening onto the bladder wall by a calibrated sound. A Foley catheter Ch 18 or 20 was inserted and the urethra length measured by taking the distance from the external urethra opening onto the balloon. Also the elevation of the bladder neck was estimated. A loose vagina pack soaked in acriflavine was inserted for 24 h and the procedure ended. No check on closure by intravesical gentian violet was made. She was admitted to the postoperative ward only for 1 night, and then transferred to the hostel where she was treated as an outpatient. Of the 170 patients, 124 were treated in this way.

If it was too complicated or if the patient could not stand the insertion of the Auvard speculum, she was prepared for a VVF-repair under spinal anesthesia the following day, i.e. if her general condition was alright; otherwise she had to wait until her general condition had improved. These patients were kept in the postoperative ward for 14 days and then discharged to the hostel. Of the 170 patients, 46 were treated by this method.

Each patient was instructed to drink as much as possible to produce a minimum of 4000 ml of urine per 24 h, and to report immediately when the catheter got blocked. No uroseptics or antibiotics were given. She had to report once a week as to leakage and then she was instructed again to drink as much as possible. When the catheter got blocked it was flushed or changed for another one. After 4 weeks the catheter was removed and the patient instructed to pass urine immediately and frequently. One week later the supramid sutures were removed, and a careful assessment performed as to healing and continence. If the fistula had healed she had to report

regularly for check-up for 6 months postoperatively before she was allowed to resume sexual activity. At each check-up the patient was asked systematically about subjective leakage, incontinence and micturition. Then she was examined vaginally for healing, incontinence and elevation of the bladder neck/urethra. Only if in doubt or when there was a discongruence between the subjective feelings and objective findings a dye test was performed by the instillation of gentian violet into the bladder. If it had not healed she was prepared for a VVF-repair under spinal anesthesia.

Results

In 156 (91.8%) of the 170 patients the fistula was closed, and 146 (93.6%) of these patients were also continent (Table 4).

A further analysis revealed the following closure rate for the different fistulas: 29 (96.7%) of the 30 type I fistulas, 90 (94.7%) of the 95 type IIAa fistulas, 34 (81.0%) of the 42 type IIAb fistulas and all 3 type IIBa fistulas.

Factors which might have contributed to failure were listed in Table 5 together with the size of the fistula before closure and later on. Not a single fistula was larger after failure.

A further analysis of the 10 patients with a closed fistula and incontinence revealed the following incontinence rate for the different fistulas: none of the 29 type I fistulas, 6 (6.7%) of the 90 type IIAa fistulas, 4 (11.8%) of the 34 type IIAb fistulas and none of the 3 type IIBa fistulas (Table 6).

Table 4. Outcome as to closure/continence in 170 consecutive procedures.

	Closure achieved		Incontinence/closed			Total
	Yes	No	Mild	Severe	Total	
N	156	14	7	3	10	170
(%)	91.8	8.2	4.5	1.9	6.4	100

Table 5. Factors which might have contributed to failure; end result.

Pat	RVF	Type	Duration (days)	Size (cm)	
				Before	Residual
Cath 94		IIAa	27	4	0.2
Cath 108		IIAb	24	4	4
Cath 114	+	IIAb	59	2.5	1
Cath 149		IIAa	32	3	0.5
Cath 153		IIAb	39	3	0.5
Cath 162		IIAa	19	1.5	1
Cath 186	+	IIAb	30	4	1
Cath 281	+	IIAa	21	4	0.5
Cath 284		I	9	3	0.5
Cath 294		IIAa	34	1	1
Cath 314		IIAb	60	2	1
VVF 2118	+	IIAb	65	6	0.5
VVF 2162		IIAb	57	4	0.1
VVF 2293	+	IIAb	60	6	0.2

Only three patients, all with type IIAb fistulas, complained about severe incontinence to the point of leaking; the other 7 patients with minimal to mild incontinence were not bothered by it, and even 2 patients denied it.

In 21 patients (12.4%) the fistula had healed by insertion of a catheter, making surgery superfluous.

Not a single patient developed wound infection, serious ascending urinary tract infec-

Table 6. Subjective/objective incontinence in the 156 closed fistulas.

Pat	Subjective	Objective	Size (cm)	Type	Duration (days)
Cath 105	b	b	3	IIAa	26
Cath 123	a	c	2	IIAa	29
Cath 154	No	a	1.5	IIAa	60
Cath 196	Leaking	d	6	IIAb	65
Cath 197	Leaking	d	6	IIAb	40
Cath 308	b	b	4	IIAa	16
Cath 333	a	a	2.5	IIAb	36
VVF 434	Leaking	d	4	IIAb	51
VVF 542	No	b	1	IIAa	54
VVF 2125	b	b	5	IIAa	34

No, no incontinence; ^aminimal; ^bmild; ^cmoderate; ^dsevere.

tion or systemic infection. There were no mortalities.

In 12 of the 14 patients in whom the early closure failed the fistula was closed by a second operation, whilst the other 2 patients have not yet returned; making the overall closure rate 168 (98.8%) of 170 within the first 6 months.

Discussion

This is the first time a systematic prospective study has been made to an immediate surgical intervention in fresh obstetric fistulas.

It means a change from a passive attitude of waiting 3 months, to an active surgical strategy as soon as the patient enters the hospital.

Its main advantage is not only the high success rate, but especially the prevention of the girl/woman from being ostracized from her own society.

It also encourages patients to come early for treatment, and doctors to refer patients immediately.

The whole procedure without anesthesia did not take more than 20–25 min and no special preoperative preparations were necessary. The nice thing was that the patient could 'walk' into the operating theater and after 25 min 'walk' out again. Also the general condition of the patient did not interfere with the procedure.

The only things needed were a pair of gloves, a disinfectant like savlon, an Auvard speculum, a tissue forceps, a scalpel with blade No. 11 or 16, a pair of slightly curved Thorek scissors, a needle and needle holder, some gauze, (non)absorbable suturing material, a calibrated metal sound, a Foley catheter Ch 18 or 20 and acriflavine. Special instruments or atraumatic suturing materials were not required.

The procedure is very simple, but it requires ample experience in vaginal surgery and especially in normal VVF-surgery. It could be taught easily to all kinds of doctors by an experienced fistula surgeon, but it is not a proce-

ture to be undertaken by paramedical personnel.

No special pre-, intra- and postoperative monitoring is required. This procedure was also successfully performed in a 60-year-old woman with a minute fistula of 25 years duration who had had a cerebrovascular accident and was not fit for any type of anesthesia (not included in this series).

It could be done without anesthesia as most of the patients did not feel very much and had been instructed that it might be uncomfortable. To give spinal anesthesia was considered to make the procedure unnecessarily complicated; as well it might have been a risk as the general condition of many patients was not optimal. Six patients could not stand or walk, but were only crawling at the time of repair.

However, if it was noted upon insertion of the Auvard speculum that the patient was not cooperative or if it was too complicated, immediately a decision was taken to perform a VVF-repair under spinal anesthesia as soon as the general condition was satisfactory.

Antibiotics were not given routinely as the fistula is caused by necrosis and not by infection; also the high urine output will prevent ascending infection. Wound infection or general sepsis was not noted in all these patients. It is better to spend the little amount of money available on a high protein diet and oral hematinics (folic acid and ferrous sulfate) than to waste it upon expensive antibiotics.

A circumferential fistula or the combination with a RVF is no contraindication though it may influence the outcome as to closure and continence.

The high success rate of the immediate surgical management of fresh obstetric fistulas is comparable to, though slightly better than, that of normal VVF-repairs at first intention by the same surgeon in the same hospitals (sofar some 4500 procedures in 4000 patients). It is far better than the 80% closure rate, after the traditional waiting period of 3 months, Lawson claims a reasonably practised and versatile operator ought be able to achieve at

first attempt and a further 10% by a second operation [9].

Theoretically, it falls within the time of the physiologic wound healing processes, before fibrosis and scarring develop. This might account for the low incontinence rate.

It has become the standard outpatient treatment of VVF-patients leaking less than 3 months whatever the cause.

The only exception is when the fistula is too complicated and the general health of the patient does not allow spinal anesthesia.

Three patients with a very poor state of health in whom a catheter was inserted died within 2–3 days of admission before anything else could be done, and were excluded from this study.

Conclusions

This procedure is simple, fast, safe, effective, easy to learn and cheap, and can be applied under primitive conditions on an outpatient basis. That is exactly what is required in developing Africa with an annual incidence of at least 50 000–100 000 new obstetric fistula patients.

Recommendations

From this study the following recommendations can be made. Any woman who develops an obstetric fistula should have a catheter. Then as soon as the slough has disappeared and the fistula is clean an early repair should be performed unless the fistula is healed already.

Justification

As some people have criticized and others will criticize the procedure without anesthesia here are the following justifications:

Only some 30% of the world population have access to sophisticated medical facilities; this does not mean that the other 70% do not have the right to medical-surgical care, within their own limited facilities.

Not everybody is so lucky to have an anesthetist. In the whole of Katsina State,

24 000 sq km with 4 million people, there is not a single consultant anesthetist present.

This procedure is not something out of the blue, but the last logical step in developing a surgical management in fresh obstetric fistulas. Since 1984 over 550 fresh obstetric fistula patients were treated: first by catheter only, then by catheter and adaptation (at first only 1 suture), then by freshening, adaptation and catheter, then by freshening, minimal dissection and adaptation, and as a last step a 'full' repair.

During this development (from one suture to a 'full' repair) it was noted, surprisingly!, that most patients experienced no pain at all or only little pain; it seems that the anterior vagina wall is almost insensitive to pain early after delivery, with the possible exception of the paraurethral areas.

Before we start the patient is informed and instructed that it might be a bit painful, and then asked if she agrees yes or no. Only if she agrees do we proceed. When it is noted that during insertion of the speculum she is not cooperative we do not proceed and stop immediately. Also before anything (freshening) is done the pain sensitivity of the anterior vagina wall is tested by surgical forceps. If this is painful we stop also. During the whole procedure one of the theater nurses is speaking constantly with the patient to distract her mind. Probably the most discomforting thing is that they may feel pain in the legs due to the awkward position on the operation table.

There is no postoperative pain so no analgesics are needed postoperatively like in patients operated under anesthesia. When the procedure has ended they are totally pain free and have forgotten everything. Also there is no chance of developing postspinal headache which troubles the other patients. Another

advantage is that they are mobilized immediately and can be treated as outpatients under low care.

Also, a very poor general condition is no contraindication. Patients who cannot stand or walk can be treated immediately. It seems that the more extensive the trauma/damage the less they feel, except for pain in the legs.

All in all, the author is of the opinion that the benefits of this procedure outweigh its only disadvantage which is that the patient may experience some pain.

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