

How to repair a vesico-vaginal fistula

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INTRODUCTION

It is not possible to describe in a short article how to repair a vesico vaginal fistula (VVF) as this is a large and complex subject. So, I will just give a brief overview and refer the reader to resources that cover the practical aspects of the surgery and holistic care of the patient.

The tragedy of obstetric fistula is that it is entirely preventable, if only there was access to quality obstetric services everywhere.

Most fistulae are caused by ischaemic necrosis of the genital tract and adjacent organs through prolonged obstructed labour (Figure 1). Increasing numbers are due to operative damage to the bladder or ureter at Caesarean Section, emergency hysterectomy for ruptured uterus and elective hysterectomy. Another cause of VVF is sexual violence particularly in war conflict situations.

It is estimated that three in 100 pregnant women will develop obstruction in labour in tropical Africa. In societies where under-age marriage is common (e.g. Ethiopia) many girls become pregnant before the pelvis has fully developed. This has given the impression that fistula is a condition affecting principally primipara but it is just as common in multiparous women. A few women reach hospital in time for a live baby to be delivered by Caesarean Section, but others arrive too late to save the baby and yet others, especially multipara, have ruptured their uterus. About one in 10 women developing obstruction will end up with a fistula, thus the best estimate is an incidence of one fistula for every 300 deliveries. This should be seen against a background of the appalling lifetime risk of death in pregnancy of 1:20 in sub-Saharan Africa. There is an enormous backlog of unrepaired cases of fistula in Africa.

Prevention is the long-term goal, so it is important to understand the reasons why these fistulae occur.

In most of Africa, more than half the women deliver at home without expert help. Fewer have access to good antenatal care where risks can be assessed (e.g. small stature) and hospital care advised.

There can be three stages for delay in receiving appropriate care:

1. When complications in labour develop at home, they are recognised too late.

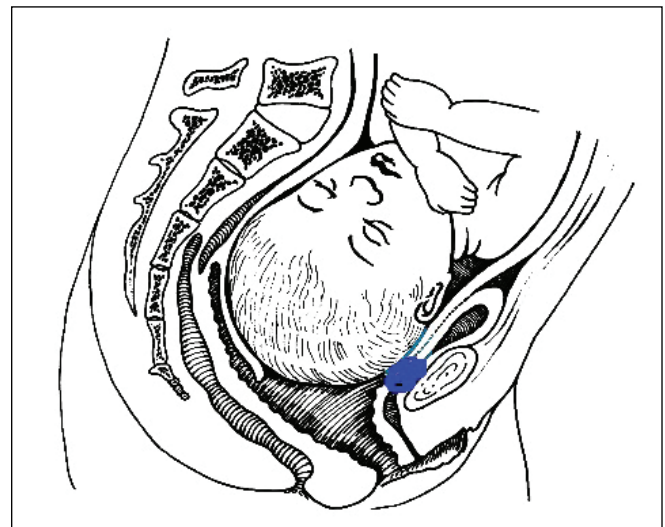


Figure 1. The area in blue is most damaged by the pressure of obstructed labour (Credit Brian Hancock).

2. After a decision is made by the family or traditional birth attendant that help is needed, there is delay accessing transport. It may be costly, and funds have not been set aside. A medical centre may be remote and even several days journey away.
3. Even when a hospital is reached there may be unacceptable charges or delays in performing a Caesarean Section. This could be because of the volume of cases, as at some teaching hospitals, and lack of, or inadequately, trained staff at many rural hospitals

In summary fistulae will only be eliminated, as they have been in the developed world, when women and their families are better educated about the advantages of antenatal care and skilled attendance at delivery and have access to them (Figure 2). Women need more empowerment to act in their own interests rather than have decisions made by members of the family. There must be better emergency transport infrastructure to well-equipped and well-staffed hospitals. While small steps are being made in the right direction there remains a large backlog of cases to repair and a steady stream of new cases.

MANAGEMENT

Management of obstructed labour is by Caesarean Section carried out as soon as possible.



Figure 2. The most important message (Credit Brian Hancock).

A urinary catheter should be left in the bladder for at least 10 days after a Caesarean for severe obstruction. This may prevent a fistula from forming, but if urine leakage appears through the vagina the catheter should be retained for at least six weeks on continuous drainage. If the fistula is judged to be large there is no point in persisting but a small fistula under 1cm has a high chance of healing if the bladder is kept empty. If this advice was followed the incidence of fistula could be reduced by up to 20%.

It cannot be over-emphasized that a fistula patient has more than just a hole in the bladder. The whole person is damaged by the disastrous outcome of obstructed labour. She has almost certainly lost her baby and often her partner and may be treated as an outcast by her community. Depression is understandably common, and she may have foot drop or even severe paralysis with contractures from ischaemia to the lower limb nerves as they pass through the pelvis. For several reasons she may have difficulty reproducing again even if surgery has closed her fistula.

Patients should be treated in a centre that is familiar with all aspects of care. Team work is essential; those who operate on large numbers of fistula undoubtedly get the best results.

SURGICAL REPAIR

It must be clearly understood that the first operation carries the best chance of success so unless one is fully familiar with the problem any temptation to “have a go” at repair should be strongly resisted. A badly performed and failed repair makes a second attempt much more difficult.

In contrast to even a decade ago, almost all African countries have hospitals where experts are operating either as visiting surgeons or increasingly as national residents.

It is essential that doctors working in developing countries find out where these centres are, either through local contacts or through contact with international organizations.

There is an enormous range of fistulae - from pin hole in

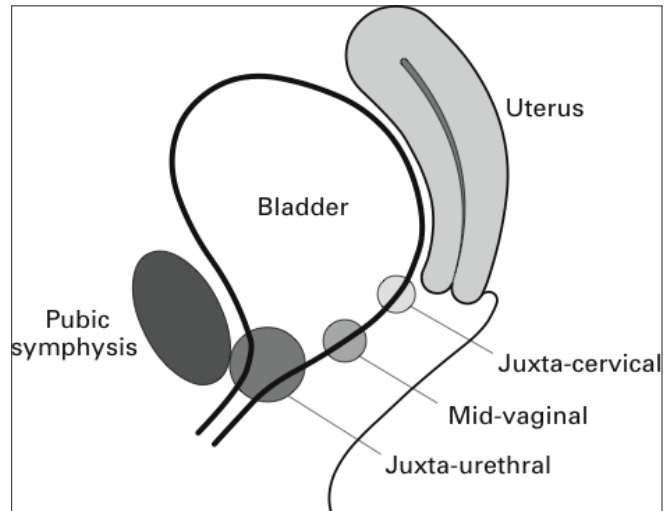


Figure 3. Types of fistula. The worst damage is usually at the uretero-vesical junction (Credit Brian Hancock).

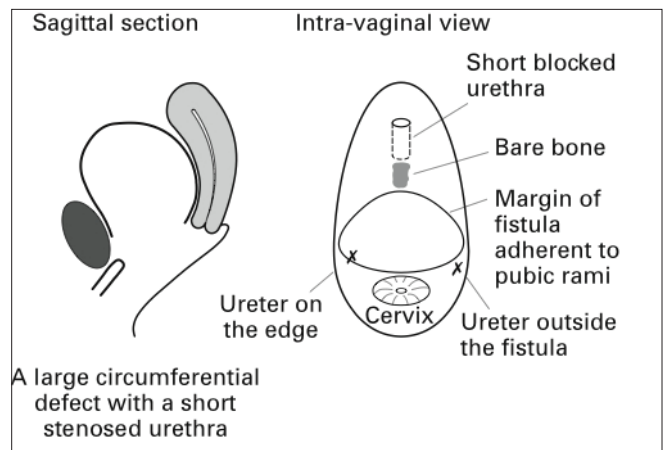


Figure 4. The worst type of fistula. Note the bladder is completely detached from a stenosed urethra (Credit Brian Hancock).

the mid vagina to total destruction of the bladder base and anterior vagina together with severe scar tissue (Figures 3 and 4). Primipara, who deliver vaginally, suffer the most damage. They have the highest incidence of urethral and rectal damage. Although the fistula can be closed in most patients some may still be wet because of the severe urethral damage. Multipara, especially those having been eventually delivered by Caesarean Section, tend to have fistulae higher in the genital tract in the region of the cervix. They do have a better prognosis though the fistula may be challenging to close. It is usual to wait about three months after the injury before doing the repair.

A beginner at fistula surgery should only operate on the smallest most accessible fistulae. Unfortunately, this is only about 20% of cases, as shown in the mid-vaginal fistula in Figure 3. It should be greater than 3.5 cm from the external meatus, is less than 2cm diameter, is mobile, not scarred and finally is not too close to the cervix. In these latter cases the ureteric orifices are at risk unless identified or preferably catheterized.

The complexity of cases varies enormously: 25% are reasonably simple, 50% present a variety of technical challenges and the final 25% can be extremely challenging to cure.

Results of surgery

Even experts cannot cure every case; in about 1 in 50 cases there is too much damage to even attempt a repair. The most experienced surgeons claim that 95% of fistulae can be closed though they may have to operate on up to 10% of patients for a second or third time to achieve this figure. Closure of the fistula, is not the same as cure. Some 15–20% will have severe stress incontinence because the urethra and bladder have been so badly damaged. A few may improve in time, but, for those who do not, the operation has failed. Secondary operations for stress incontinence are possible but have uncertain results. A reasonably experienced surgeon who takes on almost all cases seen can at best probably only make 65–75% dry.

A novice surgeon should have the same closure rate as an expert (i.e. at least 90%). This is because he or she should only be operating on the less damaged cases. If below this figure there is a problem with selection or surgical skill.

Anyone who watches a master fistula surgeon at work will marvel at the ease with which he or she demonstrates the art of fistula surgery. Even experienced surgeons who come new to fistula surgery will be surprised at how demanding the operations are and how difficult they seem at the start. The distorted anatomy and rigidity of tissues come as a shock. One not only has to know what must be done but also have the skill to do it. Accurate dissection and suturing in a confined space is difficult and requires more than average manual dexterity. There is a long learning curve owing to the complexity of many cases, and experience can only be gained by hands-on work and regular visits to work with a more experienced surgeon.

The technical aspect of repairing fistulae has been largely worked out, the challenge remains to train more surgeons and co-workers and provide the facilities where they may be safely repaired.

Post-operative care

Nursing care is equally important as the surgery and is simple provided certain basic principles are observed. It is the surgeon's responsibility to be familiar with and to supervise all aspects of pre- and postoperative care.

Continuous bladder drainage for about 10 days is advised for simpler cases. Many prefer open drainage into a bucket, there is less to go wrong. At all times the patient must be Dry, Drinking and Draining. A blocked catheter is an emergency as an over full bladder may burst the repair. The commonest cause is kinking of the drainage tube or catheter. Fluids should be taken liberally to ensure a good flow of dilute urine and to lessen the chance of catheter blockage and urinary infection. A wet bed must

be investigated by inspection or a dye test as this may confirm a breakdown.

If it occurs in the first week of repair the prognosis is not good. But later small breakdowns may still heal with prolonged bladder drainage.

Repairs can be done again after an interval of three months but with each repair the prognosis is less good.

After removal of the catheter preferably preceded by a dye test the patient should not go home immediately. A few develop a degree of retention which predisposes to breakdown after going home. Emptying should be checked by measurement of residual urine before going home. In the event of large residual, the catheter must stay in longer till the bladder has recovered. The patient should be advised to avoid sex for at least three months and must attend for a Caesarean Section ideally electively for any future deliveries. There is a risk of a new fistula if she tries to deliver without aid.

RESOURCES

Readers who wish to know more should consult the website of the Global Library of Women's Medicine. www.glowm.com. Under the safe motherhood / fistula section (http://www.glowm.com/resource_contents/page/fistula) there are links to two books which can be downloaded for free:

- "An introduction to obstetric fistula surgery" http://www.glowm.com/pdf/Intro_to_obstetric_fistula_surgery.pdf which is for beginners and nurses. Hard copies can be purchased from Health Books International.
- "Practical Fistula Surgery". http://www.glowm.com/resources/glowm/pdf/POFS/POFS_full.pdf which is more advanced.

Anyone commencing fistula surgery should know of the publications of Kees Waaldijk. He has the largest personal experience in the world and his publications form the most comprehensive guide to the art and science of fistula surgery. For the beginner he has produced "Obstetric trauma surgery, training manual", obtainable as a pdf file direct from him kees.waaldijk@yahoo.com.

The International Federation of Obstetrics and Gynaecology (FIGO) sponsor training for carefully selected individuals and have some useful information on and fistulae on their website www.figo.org. A series of five **highly recommended** videos on fistula repair by Andrew Browning should be available from FIGO soon.

Note:

If you are a trainee fistula surgeon Brian Hancock is willing to send you a copy of the two books listed above - as long as stocks last. The charity "Uganda childbirth injury fund" can fund the postage. Contact Brian Hancock brian@yealand.demon.co.uk if you are interested.