1 Obstetric Fistulae: Cause and Character; the Obstetric Fistula Complex; Classification

Understanding the Cause and Nature of Vesico-Vaginal Fistulae

The formal medical definition of a fistula is 'a communication between two epithelial surfaces'.

A fistula can arise anywhere in the body and the name for each fistula is purely descriptive, describing the two epithelial surfaces that are joining, for example:

1. Tracheo-oesophageal fistula. The communication here is between the trachea and oesophagus.
2. Enterocutaneous fistula. The communication is between the bowel and skin.

So a VVF is a vesico-vaginal fistula—a communication between the vesicae or bladder and vagina, while an RVF is a recto-vaginal fistula. This is a communication between the rectum and the vagina.

The fistulae in the genital tract are usually obstetric in origin and so they are often broadly referred to as 'obstetric fistulae. Obstetric vesico-vaginal fistulae (VVFs) are caused simply by unrelieved obstructed labour. About 5% of all women will get into an obstructed labour, either due to cephalopelvic disproportion, malposition or malpresentation.

During the obstruction, prolonged pressure of the baby's head against the back of the pubic bone produces ischaemic necrosis of the intervening soft tissues, i.e. some part of the genital tract and bladder. (Figure 1.1)

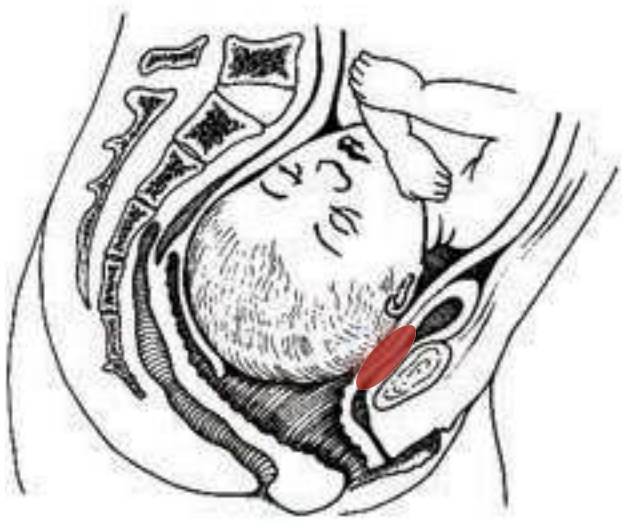


Figure 1.1
The area coloured green is often the first to undergo ischaemic necrosis. The posterior compartment (rectum and vagina) often necroses later.

In a labour that is sufficiently prolonged to produce this, the baby almost always dies. After death, intracerebral pressure decreases, the skull collapses and the mother eventually delivers a stillborn infant (if indeed she survives that long, many women of course don't).

When the baby's head is stuck deep in the pelvis, the most common site for ischaemic injury is the urethro-vesical junction, but injury can also occur in other positions in the genito-urinary tract, either in isolation or together as one massive defect. In more severe cases the anterior part of the bladder is injured and comes away leaving what's called a circumferential fistula. (Figure 1.2 a–c)

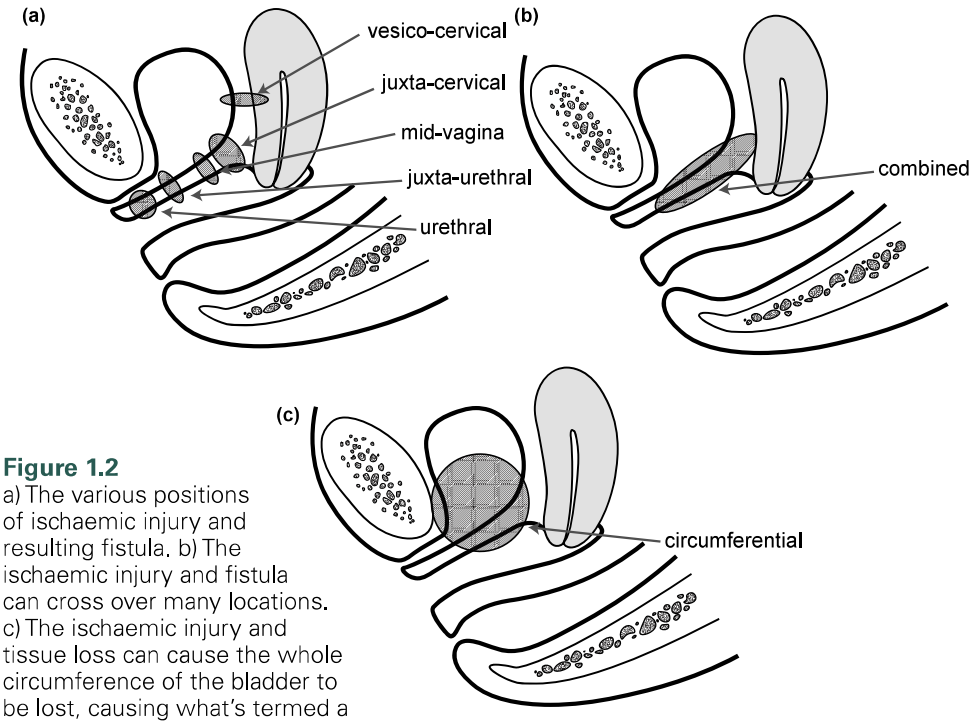
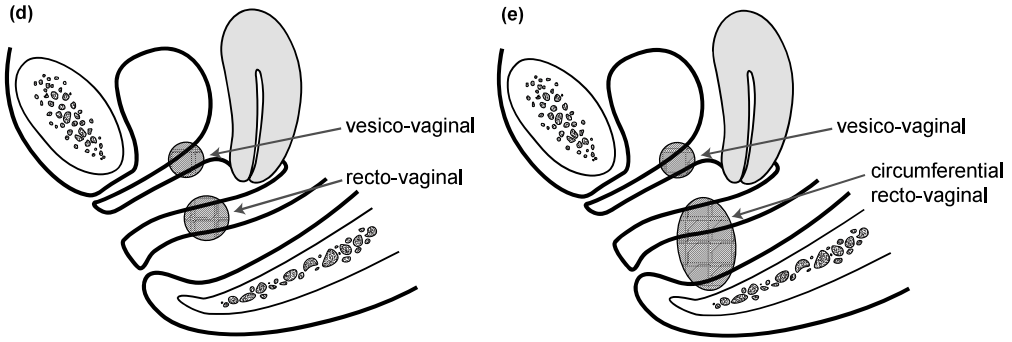


Figure 1.2
a) The various positions of ischaemic injury and resulting fistula. b) The ischaemic injury and fistula can cross over many locations. c) The ischaemic injury and tissue loss can cause the whole circumference of the bladder to be lost, causing what's termed a circumferential injury.

d) The posterior vagina, rectum and anus can be involved too.
e) In the worst cases the defect in the rectum can be circumferential.



The extent of the injury depends on the duration of labour, the intensity of the contractions and the strength of the mother to survive this ordeal. In the most severe cases, ischaemia will affect the whole of the anterior wall of the vagina, the bladder base, much of the urethra and sometimes the posterior vaginal wall and rectum as well, leading to massive loss of vagina, urinary tract and rectum. (Figure 1.2 d) The tissues of the rectum can be lost circumferentially, in the same manner as the bladder. (Figure 1.2e) In extreme cases, the bladder and vagina are completely destroyed, and worse case the anus and rectum too. Varying degrees of vaginal stenosis are common. The dead slough comes away over some days to weeks and the tissue left is severely injured. Scar forms and contracts as it heals. In the most extreme cases the vagina is completely lost and solid scar remains obliterating the vaginal orifice.

The exact site, size and amount of scar are functions of the position of the baby's head or presenting part when it becomes stuck, and the duration of the obstruction.

The ischaemic tissues take anywhere from three to ten days to slough away, forming the fistula or fistulae. Incontinence then begins, leaking urine every minute of the day and if there is a rectal fistula, leaking faeces and flatus as well. It is most commonly a fistula to the urinary tract with around 10% of those combined with a recto-vaginal fistula. Only in special circumstances can you see an RVF without a VVF. (See Chapter 7—Recto-Vaginal Fistulae).

The mother will be extremely weak and often unconscious. Some women take a day or two to rouse and one to two weeks to become mobile again.

Many mothers have died of exhaustion or a ruptured uterus in unrelieved obstruction—the fistula patients are the survivors.

The Obstructed Labour Injury Complex

A fistula patient suffers from much more than a hole in the bladder. Her whole person is damaged. It is critical to understand the full impact of the damage to the physical and mental well being of the patient.

The 'obstructed labour injury complex' is a term for a broad range of injuries that the patient suffering from an obstetric fistula may encounter. Another term used to describe the fistula is 'field injury' because the ischaemic process doesn't just affect the tissues of the bladder and vagina and or rectum and vagina; it can affect all the tissues in the pelvis—so urinary tract, genital tract/terminal alimentary canal, as well as bones, nerves and muscles. The damage and tissue loss to these structures can be labelled primary conditions of the field injury. Then because the patient is incontinent, the injury will lead to various other conditions which we call secondary.

Primary Conditions

Vesico-Vaginal Fistulae (VVF)

A Vesico-vaginal fistula (VVF): a communication between the vagina and urinary tract, almost always involving the bladder, often the urethra and more rarely the ureter. Sometimes the

communication or fistula is between the bladder and cervix or even bladder and uterus. We still use VVF although if we are to be strictly correct we'd use UVF for a urethro-vaginal fistula, and CVF for a cervico-vesical fistula.

VVF is the presenting complaint in 79–100% of patients. Iatrogenic fistula after caesareans, hysterectomies and caesarean hysterectomies are on the rise as more women are getting access to health facilities. In some series from East Africa they now account for 20–25% of all fistulae presenting. These are usually higher in the vagina, often small ones at the vault after hysterectomy, or in or adjacent to the cervix after a caesarean.

Recto-Vaginal Fistulae (RVF)

Recto-vaginal fistulae (RVF) may coexist with VVFs in more severe cases of ischaemia. The incidence of combined fistulae ranges from 1% to 21%. Isolated RVFs due to obstructed labour are rare—around 3 in 1,000. Isolated RVFs are more likely due to poorly repaired fourth degree perineal tears and trauma, or even sexual trauma in young underdeveloped girls.

Perineal Tear

Perineal tears occur more commonly after a normal labour, in which they are not caused by obstruction (see Chapter 8), however they can occur with a VVF and on occasion even with a combined VVF and RVF. It's likely that when the stillborn child is eventually delivered the swollen perineum tears rather than stretches leaving the patient with this extra injury too.

Ureteric Fistulae

Ureteric fistulae arise in two ways:

- Involvement of the uretero-vesical junction in the ischaemic process, so that the ureter then drains directly into the vagina away from the margin of the bladder fistula.
- More often, by operative injury during caesarean section or an emergency hysterectomy for a ruptured uterus. Interestingly the injury is almost always on the left. These are increasing in fistula units.

Renal Damage

Some fistula patients develop scarring in the pelvis, causing a stricture of the lower ureter leading to hydronephrosis and loss of renal function. In one series 49% had some upper renal tract damage on intravenous pyelogram (IVP), from hydro-ureter to non-functioning kidney.

Genital Tract Injuries

The ischaemic process may destroy the tissues of the vagina, cervix and even the uterus. Tissues slough and scar forms. This leads to degrees of vaginal stenosis, loss of the anterior cervix and canal, and occasionally severe cervical stenosis leading to haematometra. Exceptionally, the whole uterus sloughs along with the vagina.

Nerve Damage

Many fistula patients suffer compression damage to the lumbo-sacral plexus. Several patients complain of severe lower limb pain radiating from the lumbar region. This is most likely neurogenic and it is resistant to simple analgesia; time and physiotherapy helps. The most common manifestation of nerve damage is foot drop from involvement of the L5 root. Minor degrees are easily overlooked. About 90% of patients with foot drop slowly recover, unfortunately this can take up to 2 years. In the most severe cases of pelvic ischaemia, the patient may be paraplegic immediately after delivery, but this too recovers (apart from prolonged foot drop). With the loss of anal reflex there may be saddle anaesthesia and the risk of pressure sores.

Muscle and Fascial Damage

The levator muscles, especially the pubo-coccygeus, and the pelvic fascial support are subject to ischaemic damage when they are crushed against the inferior pubic rami. In severe cases the whole levator complex can slough leaving an 'empty pelvis'.

Bone Damage

In about 30% of obstetric fistula cases, a pelvic X-ray will reveal damage to the region of the pubic symphysis, either obliteration or separation of the symphysis or sometimes areas of bony erosion or bony spurs.

Secondary Conditions

Social Consequences

The social consequences of obstetric fistula can be just as devastating to the patient as the symptoms of incontinence. Many women will be ostracised by their families and communities. Attitudes to fistula patients vary from region to region: in some areas the family can be very supportive; however, the longer a woman has had a fistula, the more likely her husband will divorce her. Many patients will be unable to socialise or go to markets, church, mosque or community gatherings, and will live a life of exclusion.

Mental Health

Not surprisingly many fistula patients are severely depressed. A stillbirth followed by incontinence and social ostracism is too much to bear. When questioned on arrival at the hospital with a screening test, 100% of patients in Ethiopia test positive for potential psychological disorder. Up to 40% are thinking seriously of suicide or have attempted it. Interestingly, on leaving hospital after treatment 30% screen positive for potential psychological disorder. This is the same rate as the background healthy population. Making the patient dry can certainly go a long way in improving mental health but the immediate euphoria patients feel on being cured can be short lived. Several studies from Kenya have shown that returning home and trying to re-establish their lives, problems and mental health issues return. A patient can display symptoms of post-traumatic stress disorder; she has been through trauma, lost her child, her husband and her standing in society. Often she will have residual physical weakness. There is still a lot of work to do and further programmes need to be devised to help women with ongoing mental health issues.

Urine Dermatitis

Many patients restrict their drinking and end up with very concentrated urine. When the patient is incontinent, the phosphates and nitrates in the urine irritate the skin, causing local hyperkeratosis and secondary ulceration. The cure is to treat the incontinence, but in the meantime the condition will improve if the patient can drink more and dilute her urine. Diluted urine does not irritate the skin, nor smell nearly so much. Barrier substances such as petroleum jelly may help but the sooner her incontinence is resolved the better.

Bladder Stones

Concentrated urine will predispose a patient to deposits in the bladder that may act as a nidus for the formation of stones. These can become large and can cause pain, haematuria and odour from chronic cystitis.

Some women may have had a foreign body introduced into the bladder by a traditional healer or themselves in an effort to stop the flow of urine. Such objects include cloth, plant material and even small stones. Stones may form around these foreign bodies.

Contractures

Up to 2% of fistula patients in Ethiopia suffer severe lower limb contractures, rarely seen in other countries. These contractures occur after delivery, because the patient will often lie curled up in bed with her legs together, trying to stop the flow of urine. Patients may remain in this position for months or even years, resulting in diffuse contractures. It is usually associated with foot drop. Perhaps the patient struggled to mobilise with the foot drop and this helped lead to the contractures.

Malnutrition

In Ethiopia in particular, neglect and depression lead to malnutrition in some patients, with a fall in body mass index (BMI). In an unpublished series by the author, the average BMI amongst fistula patients in northern Ethiopia was 19. This appears to be a less common problem in other fistula affected countries.

Infertility

Many fistula patients (up to 60%) have amenorrhoea after delivery. This has a variety of causes, mostly supratentorial, e.g. the severe mental stress of losing a child and a husband, together with the shame of incontinence, switches off the patients periods. Malnutrition may also be a factor. A small number of patients will have Sheehan's syndrome—anterior pituitary necrosis due to prolonged shock during labour. The resultant decrease in follicle-stimulating hormone (FSH) and luteinising hormone (LH) leads to amenorrhoea. Ashermann's syndrome—scarring of the endometrium by either repeated infections or perhaps urine in the endometrial cavity is another cause. These women may have normal hormone levels, but the endometrium will be unresponsive to them. There may be cryptomenorrhoea, or hidden menses, if the cervical canal and/or vagina is stenosed and occluded leading to haematometra. Finally, don't forget that she might be on progesterone injections for contraception leading to amenorrhoea, or have had a caesarean hysterectomy at the time of delivery. These women are often not told they have had a hysterectomy and so are unaware.

Reproductive Outcomes

Successful pregnancy in women with obstetric fistulae is quite rare for the above reasons. Only about 20% of post-repair patients will achieve a full term pregnancy. If a patient does become pregnant, she has a high chance of a miscarriage or prematurity. Some patients will have a degree of Ashermanns syndrome where the lining of the uterus has been affected and the basalis layers of the endometrium can no longer regenerate each period. It's thought that this could be the result of urine inside the uterus with the fistula or repeated infections. It can lead to poor placentation which in turns leads to early miscarriage.

They may have later pregnancy loss because of an incompetent cervix. The anterior lip of the cervix is frequently torn so badly that it will not be strong enough to hold a pregnancy to term. At times the anterior cervix has even necrosed and is completely absent. Other patients have vaginal stenosis that is severe enough to preclude intercourse.

Other Causes of Incontinence Not Directly Related to Obstructed Labour

In war-torn countries sexual violence is a tragic cause of genital tract injuries, sometimes fistulae. The management principles are the same as for obstetric fistulae.

Anyone working in fistula affected countries will encounter some patients with miscellaneous causes of incontinence. These include:

- Congenital abnormalities, including ectopia vesicae, epispadias and ectopic ureters (usually as part of a duplex system)
- Neurological causes, such as spina bifida
- Advanced carcinoma of the cervix causing a fistula
- Ureteric fistulae produced during elective gynaecological operations
- Genital prolapse conditions
- Stress urinary incontinence
- Overactive bladder
- Mixed incontinence
- Urinary retention with overflow.

Management of these (apart from ureteric injuries and the ongoing incontinence after fistula repair) is outside the scope of this book.

Other Causes of Genital Tract Fistula

The vast majority of genital tract fistulae are caused by a long obstructed labour, but there are many other causes.

Over recent years we are seeing many more fistulae caused by doctors themselves—the iatrogenic fistula. As mentioned previously these represent 20–25% of all fistulae presenting in some places. Many occur after caesarean section and usually after a short labour and delivery of a live baby, and are located in the anterior cervix or just below it. (Fig 1.3a–d)

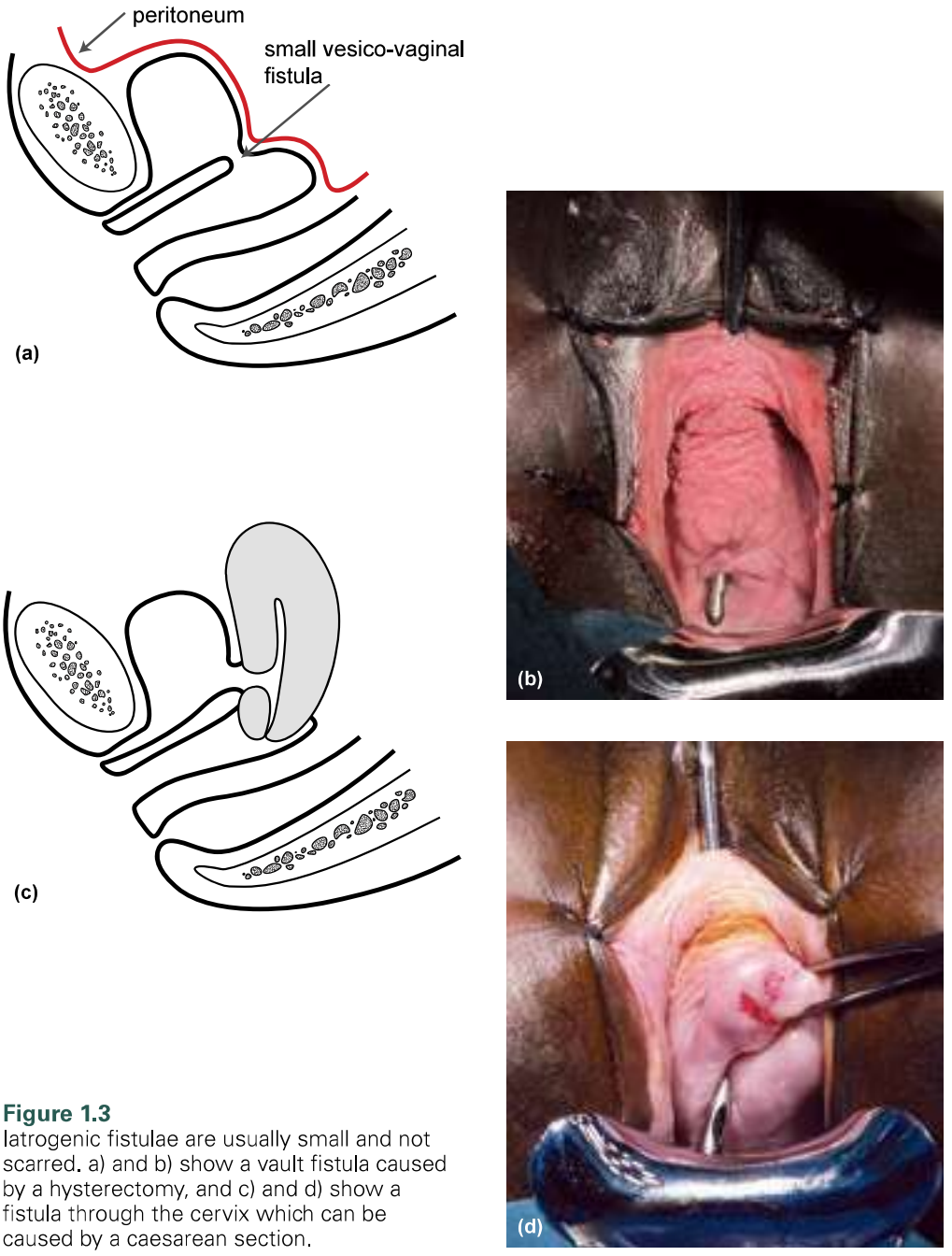


Figure 1.3
Iatrogenic fistulae are usually small and not scarred. a) and b) show a vault fistula caused by a hysterectomy, and c) and d) show a fistula through the cervix which can be caused by a caesarean section.

Even after an elective caesarean with no labour we see many fistulae. It is understandable when caesareans are often done with poor lighting or broken surgical equipment and the surgeons themselves have no formal training or have been poorly trained. One mistake I frequently see is that the surgeon has not reflected the bladder at caesarean and has then incorporated the bladder into the lower segment during the repair. I've had several patients referred to me after the bladder itself was mistakenly sewn directly into the upper part of the lower segment incision and the lower part of the lower segment was left open. Thus the uterus wasn't repaired at all, just the bladder sewn into the upper part! The patients have presented with ongoing bleeding from the unrepaired lower segment incision.

Iatrogenic fistula can happen at hysterectomy if the bladder is not reflected well and the bladder is sutured into the vaginal vault and/or the ureter is sewn into the vault. I've had a couple of patients with both ureters sewn into the vagina. Such problems occur more commonly after difficult hysterectomies for large fibroids and of course after difficult caesarean hysterectomies.

This is a most worrying trend. We've been educating women that to prevent fistula they must go to a hospital to have a baby. The women are doing the right thing but ending up with a fistula at our hands.

If there is anything positive about these fistulae it is that they are relatively curable. They are usually small, high in the vagina (away from the urethra/ continence mechanisms) and have little if any scarring.

Other causes include infection, e.g. tuberculosis, trauma, cancer and radiotherapy.

Classification of Obstetric Fistulae

Despite much debate, there is no universally accepted system of classification. This is understandable, because so much of the assessment is subjective. For a classification to be worthwhile, it should be prognostic, be helpful in deciding what is needed in the repair, enable surgeons to communicate with each other and be useful in clinical trials. Most surgeons base their classification on simple descriptive terms involving three factors:

- Site
- Size
- Scarring.

Fistula Site

Juxta-Urethral

The most common site is juxta-urethral, i.e. at the urethro-vesical junction. (Figures 1.4–1.6) In this situation, there is almost always loss of some proximal urethra. Mild ischaemia will produce just a simple hole, but prolonged ischaemia will cause circumferential tissue loss with the urethra and bladder becoming separated to a variable extent.

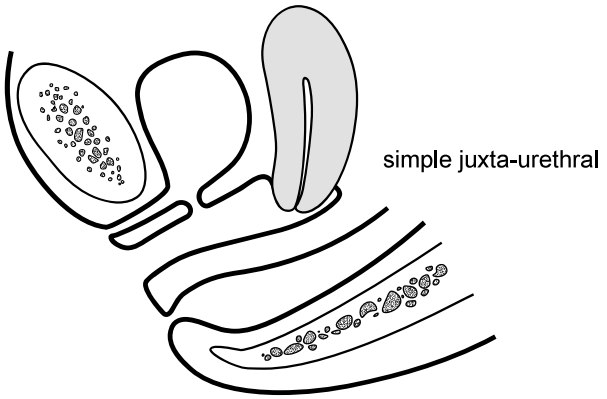


Figure 1.4
A simple juxta-urethral fistula.

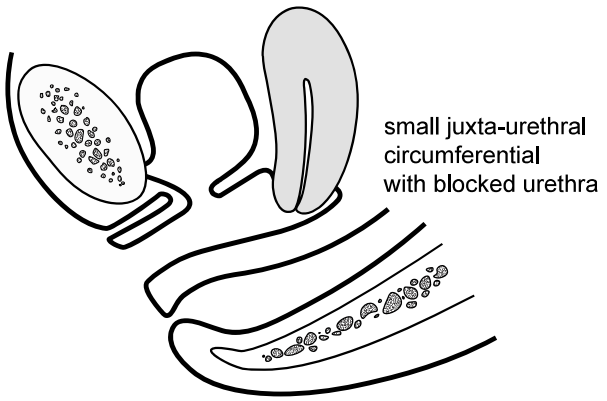


Figure 1.5
A small circumferential juxta-urethral fistula. There is a gap between the urethra and the bladder all around, anteriorly, posteriorly and laterally on both sides. The urethra is often blocked (as illustrated here) but not always.

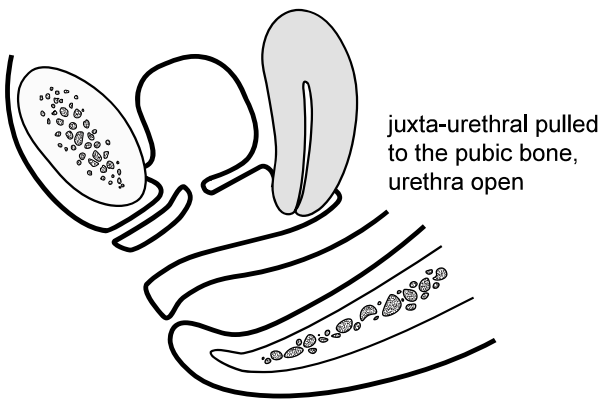


Figure 1.6
Another small juxta-urethral circumferential fistula. This one is pulled up towards the bone which makes it hard to access at operation. In this case the urethra is open; it hasn't been blocked by scar, but they often are.

Mid-Vaginal

Small defects 4cm or more from the external urethral orifice are not very common, but are very easy to repair. Larger defects may extend back as far as the cervix and laterally to the pubic rami.

Juxta-cervical

Juxta-cervical fistulae, i.e. fistulae in the region of the cervix (Figure 1.7), are common in multiparous patients and in those delivered by caesarean section. Patients who start to push in labour before the cervix is fully dilated are prone to fistulae in the cervical region. Sometimes,

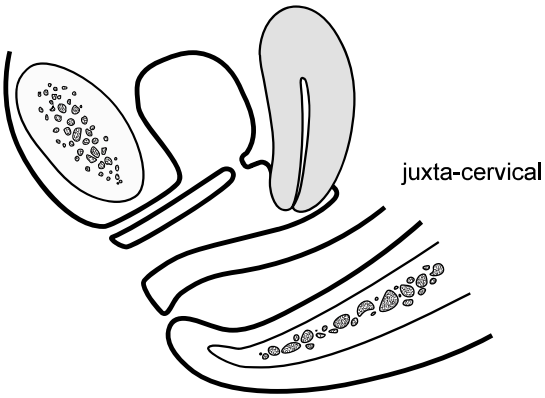


Figure 1.7
A simple juxta-cervical fistula.

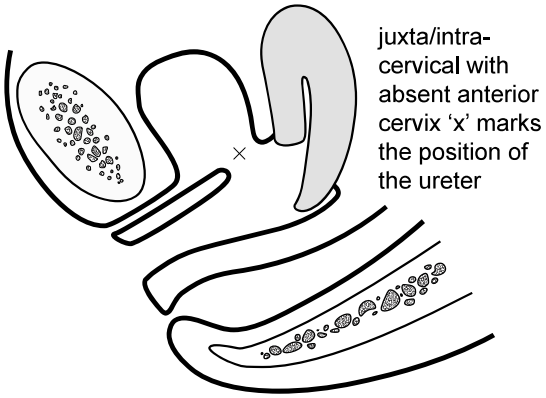


Figure 1.8
A juxta-cervical/intra-cervical fistula. The cross indicates the approximate location of the ureter. The anterior part of the cervix is often torn or absent as illustrated here.

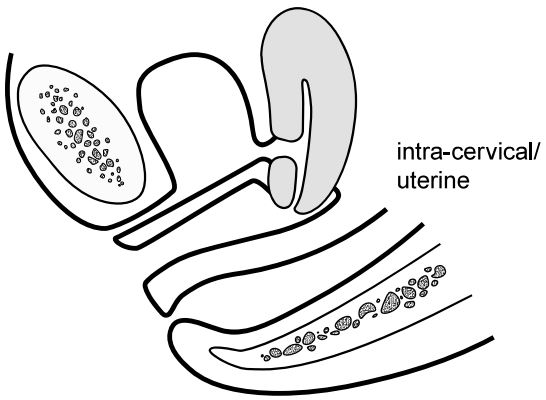


Figure 1.9
An intra-cervical or intra-uterine fistula is termed cervico-vesical or utero-vesical. These are usually above the ureteric orifices.

the defect extends into the cervical canal where the anterior cervical canal is completely missing or torn open. (Figure 1.8) These fistulae are often associated with caesareans, and can result from a vertical tear during caesarean section in the lower segment, with associated bladder injury. They could be iatrogenic as the surgeon may have mistakenly sutured the bladder to the upper part of the lower segment incision and not actually repaired both edges of the incision—the problem described above under "Other Causes of Genital Tract Fistula".

Intra-Cervical

Intra-cervical fistulae, i.e. fistulae between the bladder and cervical canal (Figure 1.9), are not very common. They almost always follow a caesarean section. There may be a history of a relatively short labour and live baby, suggesting an iatrogenic cause.

Circumferential

When the bladder has been completely separated from the urethra the term 'circumferential fistula' is used. (Figure 1.10) The urethra is almost always involved to some extent, and the extent of detachment varies from minimal with a normal capacity bladder to extreme where the bladder has all but disappeared. The more common intermediate type is recognised clinically by palpation of bare bone at the back of the pubic symphysis. In these cases, much of the anterior vaginal wall and the base of bladder are destroyed.

Miscellaneous Fistulae

Vault fistulae are usually iatrogenic and can be produced during emergency hysterectomy for a ruptured uterus or

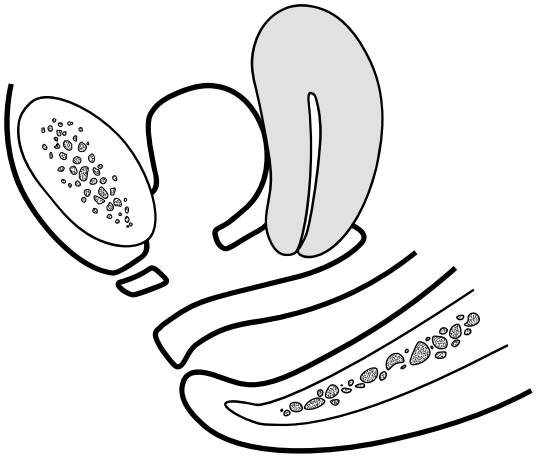


Figure 1.10
Circumferential fistula. The defect can be small as in Figures 1.5 and 1.6 or larger involving most of the urethra and bladder.

elective hysterectomy (Fig 1.3 a and b). Locally advanced carcinoma of the cervix (stage IV cancer) can cause a urinary fistula.

Fistula Size

Fistulae may be:

- Tiny (admitting only a small probe)
- Small (0.5–1.5cm)
- Medium (1.5–3cm)
- Large (>3cm), usually involving loss of most of the anterior vaginal wall
- Extensive, i.e. involving major loss of bladder and urethra. These are often circumferential with a large gap between the bladder and urethra.

Scarring

Scarring varies from minimal (fistula margins are soft and mobile) to extreme (fistula margins and surrounding vagina are rigid and fixed). Scarring may also affect the lateral and posterior wall of the vagina, causing complete stenosis in extreme cases. Vaginal stenosis can affect the proximal or distal canal or can extend throughout. The most common site is a rigid band of scar on the posterior vaginal wall at the mid-vaginal level.

Scar is the big enemy—any fistula with significant scarring is not for a beginner.

Classification Systems

Two recent attempts to standardise classification have been proposed by Judith Goh and Kees Waaldijk.

Goh's System

Goh's classification is based on three variables:

- The length of the urethra (types 1–4)
- The size of the fistula (a–c)
- The degree of scarring (i–iii).

Urethral Length

Type 1: Distal edge of fistula >3.5cm from the external urethral orifice (EUO), i.e. the urethra is not involved.

Type 2: Distal edge 2.5–3.5cm from the EUO.

Type 3: Distal edge 1.5–<2.5cm from the EUO.

Type 4: Distal edge <1.5cm from the EUO.

Fistula Size

(a) Size <1.5cm

(b) Size 1.5–3cm

(c) Size >3cm.

Scarring

i. No fibrosis or mild fibrosis around fistula/vagina, and/or vagina length >6cm or normal capacity

ii. Moderate or severe fibrosis around fistula and/or vagina, and/or reduced vaginal length and/or capacity

iii. Special considerations, e.g. circumferential fistula, repeat case, involvement of ureteric orifices.

Waaldijk's System

The classification proposed in Waaldijk's book has been valuable in predicting outcomes and planning treatment, and has been vital for his own analysis of outcomes. It focuses on urethral involvement and types of urethral damage.

Type I: Fistulae ≥5cm from the EUO and therefore not involving the closing mechanism. These have an excellent prognosis, because the all important urethra and bladder neck are intact.

Type II: Fistulae that involve the closing mechanism (<5cm from the EUO):

A. Without (sub)total involvement of the urethra:
   (a) Without a circumferential defect
   (b) With a circumferential defect.

B. With (sub)total involvement of the urethra:
   (a) Without a circumferential defect
   (b) With a circumferential defect.

Type III: Miscellaneous fistulae, e.g. uretero-vaginal and other exceptional fistulae.

Some surgeons have had difficulty in distinguishing between types IIA and IIB, although recently Waaldijk (in personal communication) has clarified this by defining type IIB fistulae as those with a urethral remnant of less than 1.5cm.

There has been one research paper comparing the two systems, which concludes that the Goh system is more predictive of outcome. Although at the moment the Waaldijk system is probably the most widely used around Africa we presently use the Goh classification, as we believe it to be the best attempt to be objective about clinical findings. Like all systems it has its shortcomings, especially if used incorrectly. Some difficulties with it are:

- The length between the EUO and fistula margin is *often estimated pre-operatively*. It is best measured as accurately as possible as it is important in predicting prognosis and management. Correct measurement is usually only possible in the theatre.
- Assessment of the degree of scarring and shortening of the vagina is inevitably subjective.
- There may be lack a of agreement as to what constitutes a circumferential fistula. Even small juxta-urethral fistulae may be slightly detached from the bladder, although some surgeons reserve the term 'circumferential' for cases where there is a clearly palpable gap with bare bone between the urethra and the bladder.
- The ureteric orifices may be just inside, at the edge of or outside the fistula, so ureteric involvement is open to subjective interpretation. Strictly ureteric involvement should be reserved for those patients needing the ureter draining outside the bladder and it being reimplanted.

Thus, there may be considerable inter-observer variation; however, if a surgeon applies the same criteria in all cases, this will enable a meaningful audit to be done.

As an example, we have used this classification to confirm our suspicion that the worst fistulae occur in primiparous patients and those having a vaginal delivery.

This system of grading from type 1ai to type 4ciii does indicate an increasingly poor prognosis, although it's not always an indication of the difficulty of repair. Type 1ai cases have the best prognosis and are often the easiest to repair, but a small inaccessible fistula high in the vagina or cervical canal would have the same classification and might be a great challenge to close.

In addition, the surgeon should make an estimate of the bladder size. This is done with a calibrated sound at the beginning of the operation. An additional refinement is to measure functional bladder capacity during dye testing.

A Descriptive Template

In reality, each fistula case is unique, and there are so many variables that some surgeons feel a satisfactory classification will never be achieved. To a large extent, the description of fistulae and their repair can only be learned by long apprenticeship. We recommend the use of a simple template for figurative description of clinical findings and operative details. This is very helpful in communication between individual surgeons and for your own records. One such template, commonly taught and used, is illustrated in Figure 1.11, where the fistula is indicated roughly in size and in its position in relation to the urethra and cervix. The amount of shading indicates the degree of scarring in the vagina or around the fistula margins.

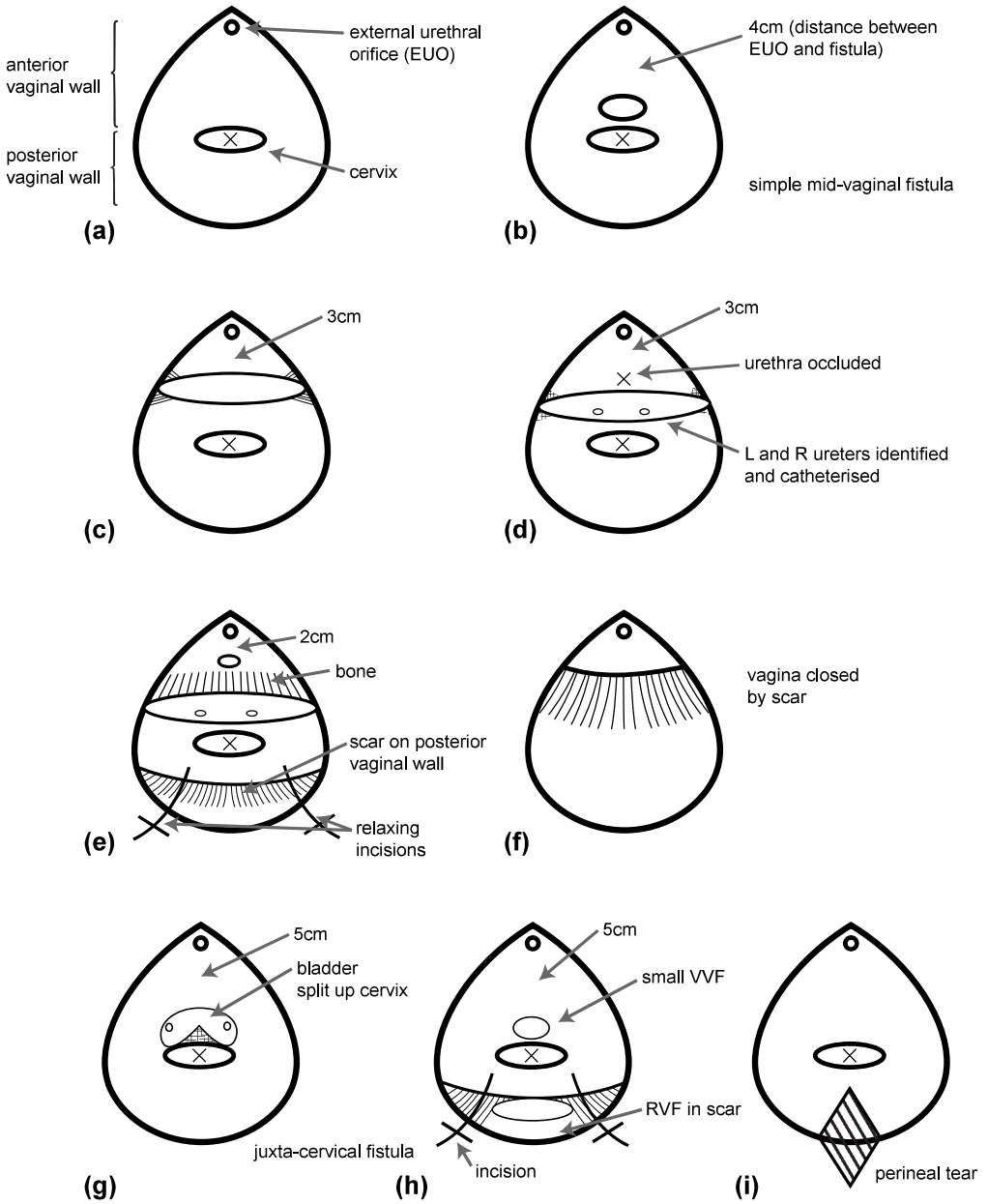


Figure 1.11
Schematic drawings of different fistulae. a) A normal vagina. b) A simple mid-vaginal fistula recording the site (the distance between the external urethral orifice and the distal margin of the fistula). c) A larger fistula stuck to the lateral walls of the pelvis with scar. d) A similar fistula to c) but the ureters have been identified and the urethra is blocked. e) A large circumferential fistula with the gap of bone between the urethra and bladder. There is a ridge of scar on the posterior vaginal wall and the lines illustrate that there have been two relaxing incisions made, one on either side. f) The vagina has been totally occluded by scar making it impossible to examine the fistula. g) A fistula in the cervix with the bladder split up by the anterior cervix. h) A small VVF with an RVF in a ridge of posterior scar. Two relaxing incisions have been made. i) A fourth degree perineal tear.

Prognosis

The critical factors affecting the prognosis of an obstetric fistula are the length of the urethra, the sizes of the fistula and the bladder, and the amount of scarring. Almost all defects can be closed (although bladder capacity may be reduced). However, if the urethra has been involved, denervated and partially or completely necrosed, it will not function and the patient may have total stress incontinence. The shorter the urethra and the greater the scarring, the higher the chance of stress incontinence. Urethras can be reconstructed but regaining function is much more difficult, so the prognosis for continence is not good.

Further Reading

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