

11 POST-OPERATIVE NURSING CARE OF THE FISTULA PATIENT

A good operation can be ruined by neglectful aftercare. It is the surgeon's responsibility to ensure that nurses and carers know what is required. In reality, nurses will be in short supply and may be unfamiliar with fistula repair, so post-operative care must be made as simple as possible.

The patient must at all times be:

- Dry
- Drinking
- Draining

Being Dry

There are several possible causes of wetness:

- The catheter is blocked.
- The repair has failed.
- There is urethral leakage.
- A second fistula has been missed, either vesical or ureteric.

Blocked Catheter

This is serious, but is easily remedied (see below under Draining). It should be uncommon if the patient has a high fluid intake unless the catheter is merely kinked.

Failed Repair

This should be very unlikely if the surgeon has selected a simple case and repaired it well. If there is any doubt, a dye test should be performed.

Urethral Leakage

As well as draining via the catheter, urine will sometimes leak alongside the catheter. This is more common if ureteric catheters are in place in addition to the Foley catheter as there are three tubes in the urethra, stenting it open. This usually resolves when the ureteric catheters are removed. If the patient leaks around the catheter with only the Foley in place, it may suggest that the urethra has poor function. The typical symptom is that the patient feels wet when standing

and walking but not on lying. Careful inspection of the urethra while doing bladder irrigation will identify the problem. Unfortunately, not much can be done and it is usually an indication that she will have urethral or stress incontinence when the catheter is removed.

Sometimes, patients may complain of lower abdominal cramps accompanied by wetness. This suggests bladder spasms producing a leak around the catheter. Reassure the patient, as these always resolve spontaneously. Hyoscine butylbromide (buscopan) may help although its action on the bladder is weak. Oxybutinin works much better if it is available. Amitriptyline as an anticholinergic is a good alternative to oxybutinin if that is not available.

Missed Second Fistula; Ureteric or Bladder

You may have missed a second fistula during the operation. A simple low vesico-vaginal fistula may coexist with an intra-cervical or ureteric fistula (the latter could be iatrogenic from the time of a caesarean section or a hysterectomy for a ruptured uterus). Note that a dye test at the end of the repair should reveal the cervical fistula (unless it is tiny), (Figure 11.1) but would not show a ureteric leak. If the patient is definitely wet from her vagina and the dye test was negative it is best to take her back to theatre and examine her under light sedation for another dye test and to exclude a ureteric fistula. A ureteric fistula is easily cured by a second operation to implant the affected ureter into the bladder.



Figure 11.1

The dye test in theatre has revealed a second high intra-cervical fistula after a distal fistula was closed. This could easily have been missed and the patient found to be wet in the ward later.

Drinking

A high fluid intake is recommended. This should be started before the operation and continued until after removal of the catheter. Many patients may be reluctant to drink. They have been accustomed to drinking little to reduce their wetness. They may be afraid that drinking too much will spoil the repair. They should be reassured that this is not so.

Concentrated urine predisposes to urinary infection and to accumulation of debris, which predisposes to blockage.

Drinking can commence as soon as the patient returns from theatre if she had a spinal anaesthetic, and the intravenous line can be discontinued the same evening as long as she is drinking adequately. The patient should be kept lying flat for 24 hours to reduce the risk of post-spinal headache. (Figure 11.2)

There is no need to record urine output except for the immediate post-operative period. With the open drainage method, it is easy to see at a glance whether the patient is drinking enough. Look for the drips and look at the colour. (Figures 11.3) I usually educate the patients to drink enough water to make the urine coming out the same colour as the water going in.



Figure 11.2
The patient is encouraged to lie flat in bed until the day after the operation. This helps reduce the chance of spinal headaches.

A Word of Warning

Occasionally, a patient will take this advice to excess and drink far too much. This can lead to water intoxication with hyponatraemia. This presents as confusion and coma, even leading to death. If this is ever suspected, the patient should be treated with 0.9% saline (hypertonic if available) and furosemide to promote diuresis.

Draining

Free drainage of urine depends on adequate catheter care. If a catheter blocks, urine may pass alongside it or, much worse, the bladder will fill, pressure will increase and the urine will find a way through the repair. The scene is then set for failure.

Principles of Catheter Care

- Nothing must pull on the catheter.
- The catheter must not become blocked or fall out.

The catheter may be secured in the operating theatre with either a suture to the mons pubis or with tapes to the abdomen. The site of the suture to the Foley gets painful after a few days so I prefer to tape. Good quality tape is hard to find and it needs to be replaced regularly. Remember that many women use vaseline on their skin which makes securing the tape impossible. It needs to be cleaned off first.

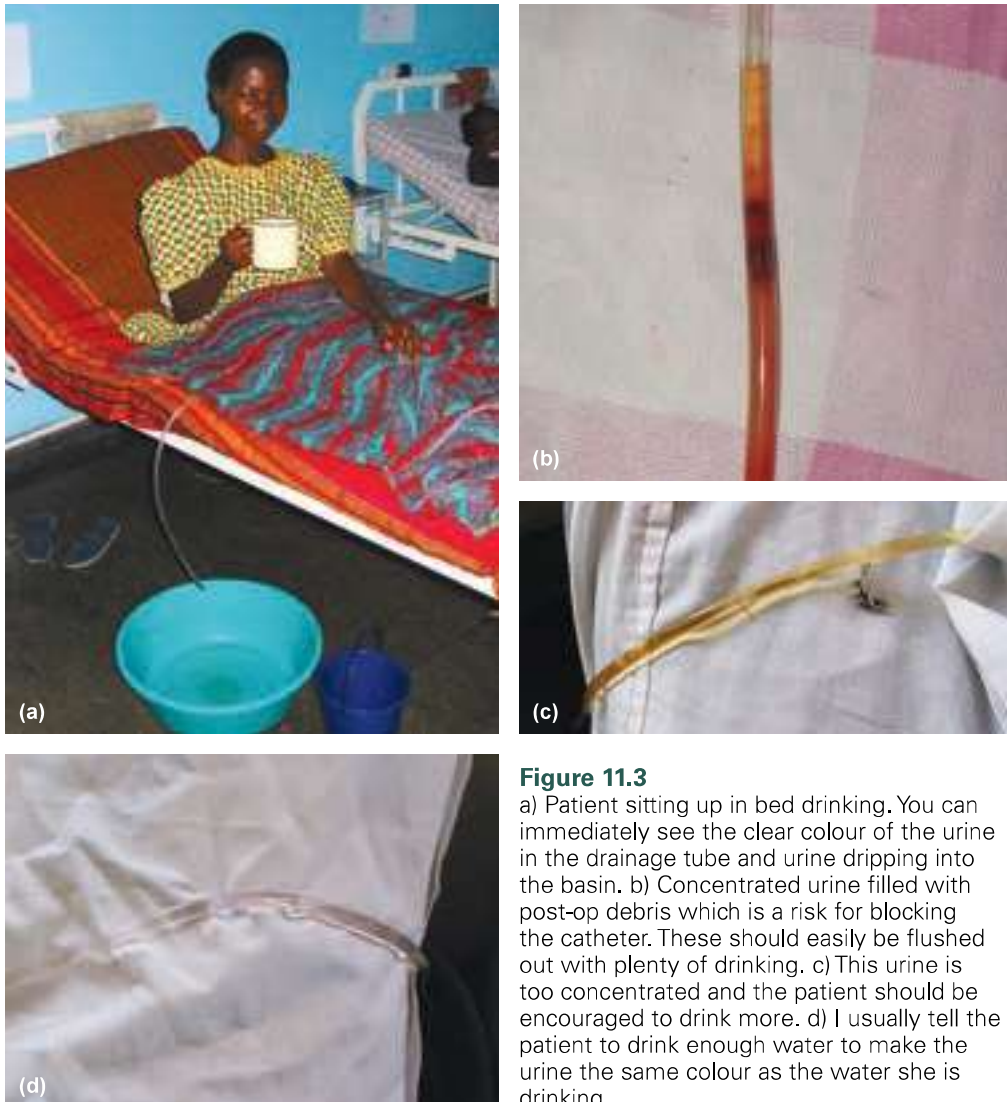


Figure 11.3

a) Patient sitting up in bed drinking. You can immediately see the clear colour of the urine in the drainage tube and urine dripping into the basin. b) Concentrated urine filled with post-op debris which is a risk for blocking the catheter. These should easily be flushed out with plenty of drinking. c) This urine is too concentrated and the patient should be encouraged to drink more. d) I usually tell the patient to drink enough water to make the urine the same colour as the water she is drinking.

The principle of securing the catheter is to prevent accidental traction on the catheter as the patient is moved from the theatre to the ward and at other times when she is mobile in bed and walking about. The traction can pull the balloon of the catheter against the bladder neck and fistula repair. Some people like to tape it to the thigh. Strapping to the thigh often comes off, and the catheter may be kinked when the patient turns. Also if the catheter is strapped to the thigh, it will be pulled and move with every step when the patient walks, pulling balloon of the catheter against the fistula repair inside the bladder and potentially causing it damage. Another alternative is to secure the catheter to the abdomen in the midline. (Figure 11.4) Note that there must be slack in the catheter between the urethral orifice and the strapping. Make sure that the urine bag is below the level of the bladder to ensure that the catheter is draining into the bag. If the urine bag is higher than the bladder, the urine will just run back from the bag into the bladder, filling it.



Figure 11.4

The catheter strapped in the midline. Note the tape is pinched between the catheter and the skin and there is some slack on the catheter between the tape and bladder to ensure it doesn't pull.

Drainage Bags or Not?

Closed drainage is ideal, but does require vigilant nursing care and good quality bags. (Figure 11.5a). In our experience, the main problem is that the bags may become over-full, especially at night (Figure 11.5b) when nurses are scarce and hampered by frequent power failures. Another common problem is the catheter bag will lie on the floor next to the bed at night. The tube connecting the bag to the Foley is often short and the weight of the urine bag on the floor pulls the Foley.

Unless it is certain that staff can look after a drainable bag, we recommend a simple alternative.



(a)



(b)

Figure 11.5

a) An expensive catheter bag with a long tube. These are rarely available. b) The commonly available urine bag. Note the short tube and the bag is now full. It will be pulling on the catheter and may overflow.

The simplest and safest option is open catheter drainage. The catheter is connected to plastic tubing and drains directly into a basin under the bed (Figure 11.6). The patient can move freely in the bed, and nothing will pull on her catheter. It is easy to see that urine is draining by watching the drips, and little can go wrong at night. This is a major consideration when looking after up to 60 patients at once, as on some of our workshops.

Infection does not appear to be a problem if urine output is high.



Figure 11.6

a) and b) Open drainage system. Little can go wrong at night.

Blocked Catheter

This is an emergency as it can lead to a breakdown of your repair! The symptoms and signs of a blocked catheter are:

- The patient feels a full bladder.
- She is wet (due to leakage round the catheter or through the repair if it has already broken).
- Urine stops dripping into the basin. This would not be noticed for some time when closed drainage is used.

Action must be taken immediately.

- Examine the catheter. (Figure 11.7) In our experience, a twisted or kinked catheter is the most common cause of cessation of drainage. Constant vigilance by the patient and staff is required.
- Examine the patient. Is the bladder palpable? If so, unblock the catheter at once by gentle saline irrigation with a bladder syringe. Only a maximum of 20cm³ is needed. If the bladder is small, there is a danger of overdoing it. If this does not work, change the catheter, often you

find it is blocked. (Figure 11.8)

- If there is any doubt about drainage, always irrigate or even change the catheter.



Figure 11.7

a) A twisted catheter causing blockage. b) and c) A kinked catheter, again causing blockage. Note in c) the urine is concentrated and contains some debris. This in itself can block a catheter. The patient has to drink more.



Figure 11.8

A blood clot was blocking this catheter. We could push the irrigation fluid in but couldn't draw any out. The clot was acting like a valve in the catheter. The catheter needed to be changed.

Record Keeping

Keep a simple record of the patient's operation and a post-operative care plan at the foot of the bed or on the wall where it can easily be seen by all. (Figure 11.9) When there are many patients in the ward it's impossible to remember what operation you did for each one of them without ploughing through the notes. This simple end of bed chart which includes a diagram of the operation enables you to be familiar with the patients at a glance.



Figure 11.9

a) and b) This system has been used for years in Kitovu, Uganda. These records are placed at the end of the bed and are easily seen. When there are many patients on the ward you can tell at a glance what operation the patient had, what needs to be done from a nursing standpoint on that day and the patient's 'DDD' status.

Other Aspects of Post-Operative Care

Vaginal Packing

Vaginal packing should be removed on day 1 (the day of operation is day 0). There is probably no need to use a pack if the operative field is really dry, but in practice there is often some oozing right to the end of the operation and it can become more pronounced once the spinal anaesthetic (causing low blood pressure) and any adrenaline infiltration wear off and the patient is out of Trendelenburg. Most surgeons feel happier to use a pack as a gentle pressure dressing—but it is important to be aware that a vaginal pack can delay the recognition of bleeding deep in the vagina, so I always pack reasonably firmly. Make sure it has some vaseline or something on it to prevent it from sticking when you remove it.

Perineal Hygiene

Twice daily perineal washing is encouraged, beginning when the pack is removed on the first post-operative day. The patient is encouraged to keep her perineum clean and dry.

Ureteric Catheters

Most catheters used to protect the ureters will be removed at the conclusion of the operation. If, however, the repair has been very close to a ureteric orifice or the ureter has been re-implanted into the bladder there may be significant swelling around the ureter. The surgeon may require the ureteric catheter to be left in to prevent obstruction to the kidney by swelling around the operative site while healing takes place. It is removed on the surgeon's instructions, usually

around the fifth to seventh postoperative day, but sometimes after as many as 10 days. Roughly speaking I take the ureteric catheters out at the end of the operation if more than 2cm from the edge of the fistula. If 1–2cm away, then I remove them on day 3, if less than 1cm, day 5–7. If on the edge, day 7. If the ureter has been reimplanted day 7–10. Remember to remove the suture that is securing the ureteric catheter before you remove it.

The catheter(s) may be left to drain into a separate bottle (Figure 11.10a), but this hampers early mobility. Two other more convenient methods are illustrated in Figure 11.10(b, c).



Figure 11.10

a) One method of draining the ureteric catheters—straight into a bottle. b) Another method is to stab a hole in the foley catheter with a scalpel and push the ureteric catheter through there and drain all catheters together. c) Another method is to make a hole in the cap of the drainage tube—I use the sharp point of a towel clip—and thread the ureteric catheter through here and into the urine bag. You need to secure this with tape. Most methods usually end up with some leakage which can upset the patient. She needs to be reassured.

Mobilisation

The patient is allowed out of bed after removal of the vaginal pack the morning after the operation. If she has open drainage, she can use a bucket to collect urine and can carry this around with her. (Figure 11.11) This works perfectly well, but it is essential that the patient continues to drink plenty of fluid. If she has a urine bag, she must be instructed to keep the bag below the level of the bladder while walking otherwise the urine will just drain back into the bladder and overfill it.

Removal of the Catheter

A few studies have been performed to determine the optimum time for removal of the bladder catheter. Traditionally, most surgeons leave the catheter in for 14 days after all fistula repairs, but two studies showed that 10 days is sufficient. One larger study showed that removing on



Figure 11.11

Patients up and about with their buckets.

day seven after the operation might be safe, but interestingly many patients got their breakdown between days 7 and 10 and the treatment for this is to replace the catheter, so patients should still be kept in the hospital to pass through this 'danger time'. Most centres still leave the Foley catheter in place for 10–14 days and for most I leave it for 10 days. If it is a repeat case and/or a very large fistula I leave it for 12–14 days.

Some people advocate bladder training, by which they mean intermittent clamping and unclamping for 48 hours before the catheter is due to be removed. With low levels of nursing care, this can easily go wrong if instructions are misunderstood, and we are not convinced that there is any benefit in this regime. It does run the risk of a catheter being blocked for too long, filling and breaking the repair. To me it seems too risky for no demonstrable gain.

Some advocate doing a dye test before removing the catheter. This enables the surgeon to determine his or her closure rates and also to note any tendency to urethral leakage. If by chance a small leak from the repair is detected, the bladder must be drained for up to another 2 or even 3 weeks. The usual teaching is, if she is wet through a small hole, to leave the catheter in place until the patient is dry and then leave it for another week from the day she became dry. If after 1–2 weeks the amount of urine coming through the catheter is not increasing and the amount in the bed is not decreasing, then it is unlikely to close, Remove the catheter and plan for a repeat procedure in 2–3 months. Small late breakdowns in the midline of the vagina, away from the urethra often heal with prolonged catheterisation, but small breakdowns in the urethra or on the pelvic side wall rarely heal with prolonged catheterisation.

It is best to remove the catheter early in the morning and to ask the patient to pass urine frequently. The next day, she can try to hold on longer. If outputs are measured, voiding volumes of 25–50cm³ are usual on the first day, but they rapidly increase to 100–200cm³ in most patients.

It is important that all patients have two to three residual volumes of urine checked **on the day the catheter is removed**. This means that the patient drinks, passes urine and then has her residual volume checked. It is ascertained by passing a catheter to drain the bladder completely and measuring how much urine was left. This is called the residual volume. Normally a woman can empty her bladder completely, but arbitrarily a residual volume of **100ml and above** is considered abnormal. It becomes more difficult in fistula patients as often their bladder capacity is very small after having had much of their bladder destroyed. A better way of finding whether a patient has retention is to measure the voided volume and then check the residual volume. If the residual volume is more than 50% of the voided volume she is in retention (e.g. if she voids 100ml and the residual is 60ml then she has retention). But still treat anything above 100ml as meaning she has retention (e.g. if she voids 300ml and has 110ml residual, treat the case as retention). You should repeat the measurement 2–3 times as the patient often improves the residual volume after a couple of voids. I get 8% having retention, these patients would otherwise go home wet and in retention if missed.

For treatment of urinary retention see Chapter 9—Management of Retention.

Problems

The Patient is Wet all the Time After Removal of the Catheter

In this case, the patient has either a totally incompetent urethra or a failed repair; or retention with overflow incontinence. A dye test is essential to differentiate the first two, and measuring residual urine will detect the latter. A late breakdown must be managed by more catheter drainage, preferably with rest in bed lying prone (Figure 11.12—see below). If this does not work, the patient must return in 3 months for another attempt at repair. Total urethral incompetence should be treated by teaching pelvic floor exercises (these should ideally be taught before the operation and continued throughout the post-operative period). The patient should be asked to return in 6 months for further assessment and consideration of a secondary operation for stress incontinence. If the ongoing incontinence is severe, leaking day and night, the patient can be discharged with a urethral plug if it is available but with pads to help for the journey home, but patients need great reassurance that they should come back for another operation. You must collect their details and be in contact with them or their family members to make sure they don't give up hope, and do come back.

The Patient Can Void, but is Wet on Standing Though Dry in Bed

This suggests a lesser degree of stress incontinence that may improve spontaneously with the help of pelvic floor exercises. We have seen a number of patients who were discharged wet and yet returned for review completely dry. In one follow up study, **50% of these patients were completely dry** at 6 months follow up.

The Patient is Dry, but Voids Frequent Small Volumes

This is very common immediately after catheter removal and can be due to urinary retention, an irritated bladder or a small bladder. All patients should have 2–3 residual volumes measured after removing the catheter. If a high residual volume is undetected and untreated, the patient

will develop overflow incontinence and be predisposed to chronic urine infections. The condition usually resolves spontaneously if the bladder is regularly emptied with clean intermittent self catheterisation (see Chapter 9—Management of Retention). An irritated bladder will hopefully settle with time. Often it's the urethra that is irritated after having a catheter in place for 10 or more days. Check for an infection but most of the time this will settle. Do encourage the patients to drink plenty to keep the urine clean and flowing. The most difficult to manage are those patients with a small bladder. We have seen some bladders stretch remarkably with time, but more often than not they don't unless as they are often incapable of holding larger volumes of urine.

Failure of Repair

A leak requires a dye test unless gentle irrigation demonstrates leakage around the catheter. A leak from the vagina on dye test indicates a failure, but all is not necessarily lost.

Early Leak - in the First Week

This is bad news, and usually means the repair has failed. Early leakage should be rare after easy repairs, but is more of a problem in difficult cases. If more urine is draining through the catheter than through the vagina, it is worth keeping the catheter in for as long as this is the case, in the hope that healing might occur.

Late Leak - in the Second Week or Later

Occasionally, even simple repairs develop a leak during the second week. This may be a secondary breakdown due to infection. In these cases, as the fistula margins are not under tension and have good blood supply, there is every chance that the defect will close with prolonged bladder drainage. The catheter should be kept in for up to 3–4 weeks in total, as long as the leak is diminishing. If the patient does become dry with prolonged catheterisation, then leave the catheter on free drainage for another week before removing it.

The Later the Leak, the Better the Prognosis

It may help to keep the patient in bed, lying and sleeping face down. (Figure 11.12) In this position, the hole in the base of the bladder will be uppermost and the catheter tip will be below it, i.e. there is sump drainage. This makes sense but we have no evidence that it's beneficial. I leave the catheter in until she is completely dry again then leave the catheter on free drainage for one more week (as above). If the leakage is not decreasing after an additional 7–10 days of catheter drainage I remove the catheter, as it is very unlikely to heal.

Timing of Discharge Home

Although, in most cases, the catheter is removed on day 10, we strongly recommend that the patient does not leave the hospital for at least another three to four days. We have seen several

patients who were said to be dry after catheter removal, and have gone home the next day or two and become wet within days, usually saying that they were going home on a long, rough bus journey with a full bladder. They felt a 'pop' and became wet. If they had been able to return immediately and have further catheter drainage, they would probably be healed. They were subsequently found to have very localised breakdown that was easily amenable to a second repair.

Is it advisable to let patients who have had major surgery go home over long distances in crowded taxis, on the back of a bike or by a long walk? It is not surprising that some secondary breakdowns occur. The other advantage of retaining the patient for a week or longer is that one can often see early stress incontinence improving over a matter of days. Also, those with incomplete emptying (urinary retention) or urine infections requiring treatment may be recognised.

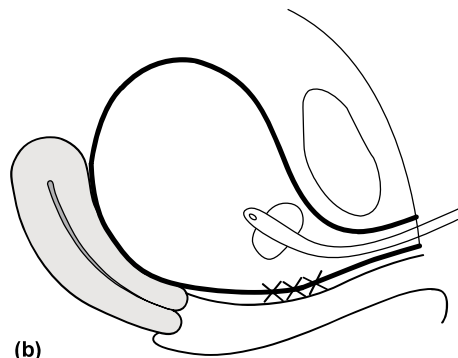
All patients must be told to return at once if they become wet after going home, and they should be encouraged that the bus fare will be reimbursed if they do so. Many places now have 'mobile money' making transfer of money for bus fares over the mobile phone network possible for such cases.

They should also be advised to avoid strenuous activity and sexual intercourse for three months. Patients need to be taught to come to hospital for a delivery by caesarean if they become pregnant.

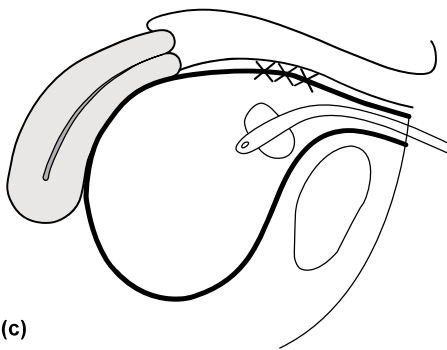
The patient should be given a card describing her treatment and giving the operation date to aid later identification and to advise caesarean section should she present pregnant to another hospital.



(a)



(b)



(c)

Figure 11.12

(a) One alternative to care for a patient with a breakdown of repair is to nurse the patient in a prone position while draining the bladder. In theory the urine should be draining more easily through a broken fistula in the supine position (b). In the prone position, the urine will now collect in the anterior bladder, be drained by the catheter, and hence not leak through the broken fistula, enabling it to heal (c). Like with most things in fistula surgery, this is dictated by common sense but the evidence that it works is lacking.

A Cautionary Tale

A patient set off on a 200 mile journey home 3 days after removal of a catheter. She claimed to be voiding well. She had a 5 hour ride in a crowded taxi, which did not stop on its way. She felt a full bladder, but was too embarrassed to ask the driver to stop. She became wet and, hoping that it was a temporary problem, continued home. Finding herself wet all the time, she was too far to return immediately, and anyway had no money. She later returned. A small, high, very difficult intra-cervical fistula was repaired successfully. If only this patient could have delayed setting off home or returned immediately for further catheter drainage, this situation could have been prevented.

Pre-Discharge Advice

Counselling

Before discharge, the patient and her family must receive advice so that they understand why the fistula occurred and how it can be prevented in future. Many patients come with traditional beliefs about the cause of the fistula—for example, that it was a punishment for adultery or that someone has cast a spell or that they were cursed. These and other false ideas must be gently corrected. Once home, she must become an advocate in her community for prevention. It does take a while for the message to sink in and regular education is needed and built upon.

Abstinence from Sexual Activity and Heavy Work

Occasionally, we see patients who went home dry but report a leak developing after a few weeks. Several have admitted to having intercourse or doing heavy work in the fields, feeling a 'pop' and then becoming wet. To prevent this it is essential that they abstain for at least three months.

Caesarean Section for all Future Pregnancies

It is essential to discuss family planning issues, including tubal ligation where relevant. The surest way to maintain a cure is to have no more deliveries! Future pregnancies must be delivered by caesarean section. If the obstructed labour was due to a malpresentation, the patient could possibly deliver vaginally in future, but, as skilled obstetric care is rarely available, it is best to insist on a caesarean section for all subsequent deliveries. From time to time, we do see patients with recurrence of fistulae because they have not been able to get to hospital in time, or because they were given a trial of labour instead of an elective caesarean section.

Over some years working in northern Ethiopia, we had over 200 women return to us pregnant after a fistula repair. All of them had a caesarean at term. We lost one baby due to a congenital abnormality and one due to prematurity. There was no recurrence of fistula. During the same time period we had 53 women come back having tried to deliver at home; maybe they didn't tell their new husbands they had had fistulae before, or their community didn't allow them to come to hospital for their delivery. All of them had a stillbirth and all had a fistula recurrence.

We also heard of some women who died trying to have another baby at home. We don't know how many women did deliver at home successfully, but the number and severity of complications certainly doesn't justify the risk. All women should return for a caesarean at term.

Return for Follow-Up Consultation

Because it is so important for surgeons to know their results, patients should be given every encouragement to return. One surgeon forbids resumption of sex until the patient has been seen for follow up. He gets a high return!

Possible Late Problems

Urinary Infections

With our regime of a single dose of gentamicin 160mg in theatre and a high urine flow, infected urine is uncommon. A late post-operative infection could be caused by a stricture with retention or even a missed bladder stone. Where limited laboratory facilities exist, inspection of the urine should be enough to make the diagnosis. It is very difficult to diagnose a urinary tract infection with a dipstick when a patient has a fistula or soon after the operation. The urine sample will always be contaminated when she has a fistula and after the operation there will always be contamination from the operative site.

Ongoing Incontinence Despite a Closed Fistula

This frequent and troublesome problem is discussed in Chapter 9. If the patient remains wet there is still a high chance of depression and even suicide. These patients need special attention, counselling and reassurance and each one should stay at the hospital until well educated, with a plan and hope for further management.

Stricture

Any patient who had a stricture of the proximal urethra at the time of repair is at risk of post-operative stenosis. You should excise the stricture at the operation to minimise the chance of this. Circumferential fistula repairs have the highest chance of stricture formation. I get an 8% stricture rate at 6 months follow up. Treating strictures is difficult as they invariably recur. Some dilate them, for example with Hegar dilators. I prefer to cut them at 5 and 7 o'clock by inserting a fine pair of scissors through the urethra, rolling the scissor off the stricture, opening the blades, advancing gently and cutting the stricture. To prevent recurrence, the patient should be taught how to self dilate the stricture with a stiff short catheter every day or two. She will insert it into her bladder, leave it there 10 minutes then remove it. If she is wet after cutting of the stricture, the urethral plug (if available) will work both to keep the patient dry and to prevent the stricture recurring.

Sexual Difficulties

In spite of a good repair without any vaginal stenosis, some women are reluctant to resume sexual relations. There may be a number of reasons, and sensitive enquiry and examination are required to reassure them. Others with genuine dyspareunia due to vaginal stenosis may be helped by a vaginotomy or vaginoplasty especially if the narrowing is localised.

Re-Integration

Much has been written about counselling and helping to re-integrate fistula patients into the community. Many patients are very poor and certainly appreciate financial help; however, in practice, if the patient is dry, she will re-integrate and, if she is wet, she may not.

As already mentioned, patients who are cured must be educated about the cause of their fistula and understand how fistulae should be prevented. They can become educators for their own community.

Further Reading

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