

7 RECTO-VAGINAL FISTULAE

A recto-vaginal fistula (RVF) is produced only in the most prolonged episodes of obstruction, and so is usually associated with a severe vesico-vaginal fistula (VVF) which is more likely to be circumferential and more scarred. It is more likely the patient has foot drop or other neurological damage. Isolated RVFs due to obstructed labour are extremely rare, around four per thousand obstetric fistula cases. Isolated RVF cases are more likely to be caused by sexual violence in war situations or in under-age marriage and rape, or a fourth degree perineal tear that was repaired incorrectly or broke down.

Anal sphincter tear (perineal tears extending through the sphincter and anal mucosa—grade 4 perineal tear) usually occur in isolation unrelated to obstructed labour, and should not be classified as RVFs. They sometimes do occur in association with a VVF but more often than not they occur after a precipitous labour, not an obstructed one. Remember that the anal canal is about 5cm long so the tear needs to be quite extensive before it enters the rectum. Tears are dealt with in Chapter 7—Recto-Vaginal Fistulae.

Incidence

The exact incidence of RVF is difficult to determine, because some surgeons classify sphincter injuries as RVFs, where strictly the term should be reserved for a recto-vaginal communication causing a fistula, not a tear. However, a few rectal injuries do involve the lower rectum and sphincter complex to some extent. Also, if surgeons have been selective in avoiding the most difficult VVFs, the excluded cases will have a higher incidence of RVF, and so the true incidence will be underestimated.

The highest incidence is reported from the Addis Ababa Fistula Hospital, where 15% of VVF patients operated upon had an RVF as well. This was back in 1993 and the picture has since changed. An unusual incidence of isolated traumatic RVF in under-age brides has been reported from Ethiopia. In Bahr Dar, northern Ethiopia, the incidence of combined fistulae is 8.4%. The figure for Uganda is lower, at 3.3%. The difference between Ethiopia and Uganda can be explained partly by the much lower incidence of caesarean section in the Ethiopian fistula patients (15% v. 65% in the late 1990s).

Those patients who eventually deliver vaginally suffer more ischaemia than those whose obstruction is relieved by caesarean section. The average length of labour in women who sustain an RVF with a VVF is a full day longer than those who just sustain a VVF. Thus, the incidence of RVF in those delivered by caesarean section is similar in Ethiopia and Uganda at about 2%, whereas for those with fistula injury who delivered vaginally, the RVF percentage is higher, at 5.2% in Uganda and 9.3% in Ethiopia. ($p = 0.001$).

Classification

An objective classification of RVFs is based on the distance from the site of the hymen to the distal margin of the fistula, as described by Judith Goh (see Chapter 1—Classification of Obstetric Fistulae). An estimate is made of the size and the amount of scar surrounding the defect. Although type 1 RVF sounds as if it should be easier to repair, these are often the most challenging as they are high in the vagina and often stuck to the sacral promontory. They often have tight stricture making mobilisation difficult and the risk of bleeding high, whereas the low ones are much more accessible. The only concern with low ones is the patency of the anal sphincter and whether you need to repair that as well.

Assessment

It is important to recognise that scarring will distort the anatomy of the rectum. A careful assessment by rectal examination is just as important as a vaginal assessment, paying attention to the site, size and degree of scarring. It is common for a fistula felt in the mid-vagina to feel higher than expected on rectal examination. If there is difficulty, a probe should be passed through the vaginal opening to feel where it comes into the rectum. What appears to be a small hole on digital examination may be found at operation to involve almost half the circumference of the rectum. The lumen of the rectum at the level of the fistula must be assessed carefully. Narrowing may well be present often at the proximal margin of the fistula, (Figure 7.1) and this will influence the method of closure so as not to occlude the lumen. Exceptionally, the rectum is completely blocked just distal to the fistula. (Figure 7.2)

The status of the anal sphincter should be recorded. The resting tone, the squeeze pressure and the quality of the pubo-rectalis sling should be estimated.

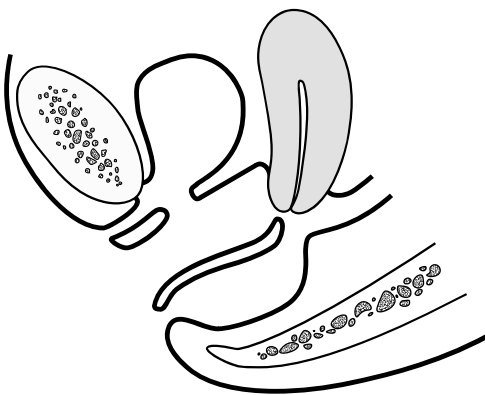


Figure 7.1
A high RVF with a band of scar on the posterior rectum, creating a stricture in the lumen.

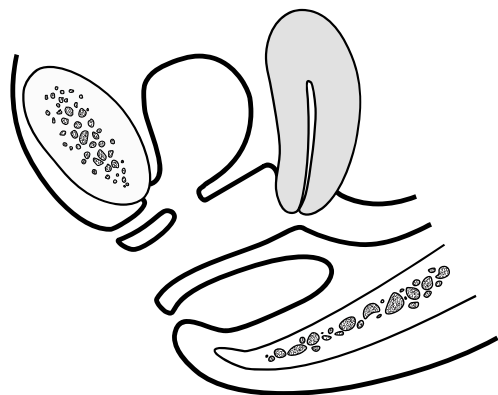


Figure 7.2
Rarely the bowel distal to a scarred fistula can be completely closed off.

Does Every RVF Need to be Closed?

Not all RVFs need to be closed. The symptoms of RVF vary from complete faecal and flatal incontinence to none. It is often surprising that some patients with a moderate-sized RVF report very little leakage unless they have diarrhoea. Some with tiny fistulae may deny any symptoms at all. There is no point embarking on a potentially difficult repair if the patient has no symptoms. These 'asymptomatic' RVFs are usually pulled tight in a band of scar on the posterior vagina. When you release the scar to gain access to repair a VVF, the RVF may spring open and the patient will be incontinent unless you repair it. If this does not happen and it is not a concern for the patient, don't repair it and run the risk of making her worse.

In spite of every care, a small RVF may be discovered unexpectedly while repairing a bladder fistula, by the appearance of bubbles from the rectum into the vagina, flatus bubbling through the urine pooled in the vagina. If the RVF is easily accessible, it can be repaired after the VVF. I have missed a high RVF a couple of times while doing a VVF repair, the symptoms only coming about after releasing the scar intra-operatively. The patient became incontinent after the operation. In both cases the VVF healed well and I repaired the RVF at a later date.

The discovery of a larger RVF during an operation is an embarrassing error of pre-operative assessment, and its management depends on its site and size and the experience of the operator. As the RVF was missed the bowel would not have been prepared properly before the operation so faecal contamination of the operation site is high. You need to stop the operation and perform an enema before proceeding.

Which Rectal Fistulae Require a Colostomy?

Colostomies are used far too often for RVFs—a decision about a colostomy should be made only by the surgeon who is going to do the repair, and they are rarely required. I often find patients who have had a colostomy in the peripheral hospitals for a very small RVF or even perineal tears. It definitely wasn't needed and just puts the patients through unnecessary operations and potential morbidity. To live with a colostomy is probably of equal misery to the patient as living with the rectal fistula, for no ultimate gain. We have all seen far too many badly made colostomies that have prolapsed, adding even more to the patient's distress.

Provided that the surgeon believes that the fistula can be closed securely with healthy mobile margins, preferably in two layers, there is no need for a colostomy.

Experienced surgeons recognise that some RVFs that are high, large and surrounded by scar are going to be very difficult to close securely, and feel happier if a colostomy has been made. Colostomies do not increase the chance of healing—they simply lessen post-operative complications of sepsis or peritonitis should a major breakdown occur. I have only performed two colostomies for RVF patients in the last 10 to 12 years. Both were for very high injuries stuck to the sacral promontory and with tight strictures.

A strategy that Brian Hancock found to work for the high difficult fistula is to do as much as possible of the mobilisation trans-vaginally and then to open the abdomen and complete the repair from above. It is then much easier to perform an accurate two-layer closure, for which it is no longer necessary to perform a colostomy. I do these repairs from below and prefer to have a colostomy to prevent faecal spillage into the peritoneal cavity during the operation. As the injury is so high, the peritoneum is routinely entered and if there is a leak in the suture line, faecal matter would then enter the peritoneal cavity directly.

On the rare occasions when a colostomy is considered, it should be performed about 2 weeks before planned closure, but may exceptionally be done at the time of the repair if unexpected difficulties occur. (See Chapter 13—An Injured Rectum)

Sometimes, a patient is seen very soon after her birth trauma, and examination reveals a large sloughing VVF and rectal defect. These patients are often unable to walk because of nerve damage. It is controversial whether a colostomy is advisable in this situation. It has been traditional to perform one in the hope that this will make it easier to care for the patient. However, as colostomy bags are usually not available, it will not make any difference. When the time comes to perform the repair, the rectal fistula may be much smaller—and thus it turns out that a colostomy would not have been necessary. Many colostomies performed in these circumstances in the rural areas may never be closed and as colostomy bags are often not available it makes the woman even more miserable. Unpleasant as it is to leak faeces from the vagina, leaking from the abdomen without proper colostomy bags is not that much better. The patient just needs to clean regularly and have the RVF closed as soon as possible.

Performing a Colostomy

If a colostomy is necessary, the preference is that it be made with the sigmoid colon. Make a small oblique incision left of the umbilicus on a line made between the anterior superior iliac crest and the umbilicus. Make the incision on that line just on the lateral margin of the rectus sheath and muscle. This minimises the risk of colostomy prolapse. In the cases that we have seen, the main reasons for prolapse are that the transverse colon has been used or that the stoma has been brought out through too large a hole lateral in the rectus muscle.

To minimise the risk of prolapse, we recommend the following steps:

1. Use the sigmoid colon.
2. Choose the proximal sigmoid colon where it is not too mobile.
3. Bring a loop out through a small defect that comes through the lateral rectus muscle. The defect in the skin and rectus sheath (the rectus fibres are split) should be just enough to admit two thumbs comfortably.
4. The bowel loop should be secured in position incising about 5cm longitudinally through the teania coli and everting the edge of the bowel to itself and securing it to the skin.

A massive prolapsed colostomy is a disaster. (Figure 7.3)



Figure 7.3
a) and b). Two examples of massively prolapsed colostomies causing the patients much distress.

Strategy for Repair of a Double Fistula

Most of the time the RVF and VVF should be repaired at the same sitting in the operation theatre. It doesn't really matter which you repair first, the VVF or RVF. Most surgeons start with the VVF and then do the RVF. If you repair the RVF first then you will probably be retracting on the RVF with an Auvards or Sims speculum while you repair the VVF, which may damage it.

Most double fistulae have significant scarring and vaginal stenosis which needs relaxing incisions and/or episiotomies to gain access to the repair. In the more severe double case there is often a deficiency of vaginal skin making covering the vagina, either anteriorly, posteriorly or both, difficult. When the cases are this severe I am now leaning towards staging the operation, doing the RVF and a posterior vaginal reconstruction first and then doing the VVF some weeks or months later. I do get better success doing it like this than doing too many flaps to get the bladder, bowel, anterior and posterior vagina closed in one sitting. Many flaps can put a strain on the blood supply and perhaps lead to sloughing of the distal margins of the flaps. This of course leads to a repair breakdown, so I err on the side of caution and do it in two stages. If I do stage the operation I always do the RVF first to make the patient continent of faeces and thus keep potentially infective faecal matter away from the healing VVF.

Preoperative Preparation

It is desirable that both the rectum and left colon be empty. My practice is to allow fluids only on the day before operation and to give an enema morning and night the day before. An oral purgative such as sodium picosulphate (picolax) or mannitol is very helpful but not always available so a simple soap and water rectal enema is commonly used. Before the anaesthetic is administered, a check should be made that the rectum is empty. If it is not the operation should be deferred or the patient asked to go and empty her bowels or perform an enema in theatre. It is not uncommon to find faecal spillage when you start the operation. Always stop and

perform a good enema on the operation table, scrub again and proceed if there has been faecal contamination. It is a good idea to continue the antibiotics for 24–48 hours in addition to the intra-operative doses.

Technique

As for VVF repair, the first essential is very good exposure. (Figure 7.4)



Figure 7.4

A bilateral episiotomy was needed to gain access. The vagina was almost completely occluded by scar making access very difficult. The episiotomies bring the RVF into clear view.

The repair of a simple low RVF is illustrated in Figure 7.5. This was caused by trauma in an under-age marriage.

If available, suction is helpful, as blood (and urine) accumulates in the operative field. It also helps to reduce the Trendelenberg tilt for RVE, to bring the posterior vagina into view.

When adequate exposure has been achieved, an incision is made around the fistula and laterally from each angle, similar to the incisions made for a VVF. As with a VVF, the mobility is obtained from the proximal dissection rather than distally.

Not all RVFs are as simple as the one in Figure 7.5. Most are involved with thick scar. The lateral margins are the most difficult to mobilise, as they are frequently bound by scar. (Figure 7.6) Generous cutting through scar lateral to the fistula and aiming posteriorly may lead one into the para-rectal space just lateral to the fistula. Bold cutting with strong scissors is required to free up scar, and it helps to insert a finger frequently into the lumen of the rectum through the anus to guide the dissection and ensure you are not entering the rectum. Often there is thick scar around the fistula. Excise this to free the soft rectal and anal muscle and mucosa beneath. More mobility is obtained once the scar is removed.

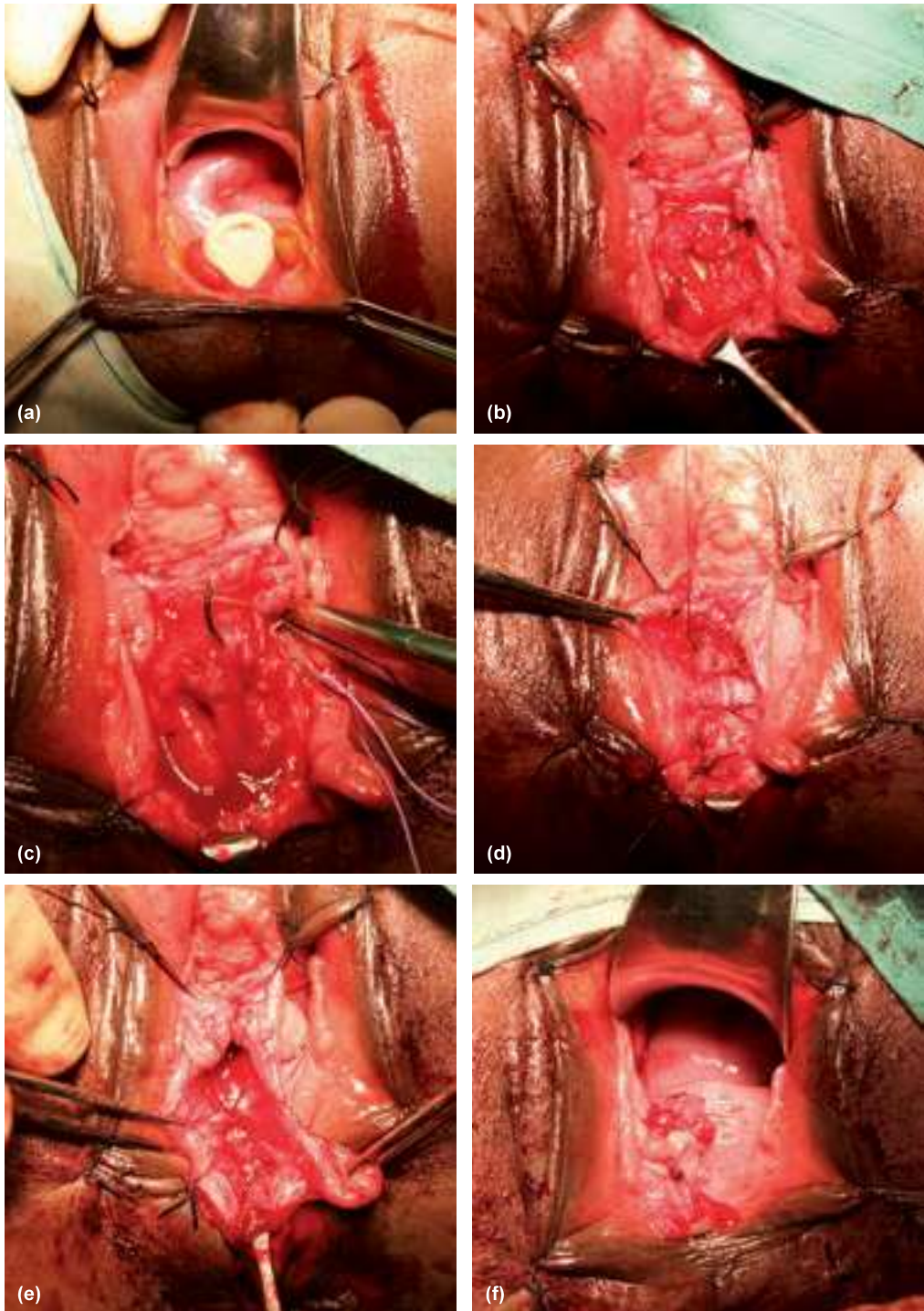


Figure 7.5

a) Low RVF just above the sphincter. b) The RVF has been mobilised. c) Repair with interrupted sutures taking full thickness bites of the muscularis, excluding the mucosa. d) The first layer is completed. e) The second layer. f) The vagina is repaired.



Figure 7.6

Note the bilateral episiotomies to gain access (and note absent urethra). The RVF is seen stretched to each side of the pelvis where it is adherent in dense scar. This needs to be freed adequately and the thick scar excised to repair healthy tissue in two layers.

As the posterior vaginal wall is shortened, the pouch of Douglas is often opened during the superior dissection. This is an advantage, as the rectum becomes more mobile and assessable. Significant bleeding during a rectal dissection indicates that one has strayed into the rectal wall. If the peritoneum is entered I tend to close it as soon as enough mobility is obtained. The patient is often in slight Trendelenburg tilt and the blood and urine draining into the vagina then drain into the peritoneal cavity where they can cause a prolonged ileus after the operation. Worse still is if there is faecal spillage into the peritoneal cavity.

It is usually appropriate to close the rectal defect transversely, and it is probably best to aim for two layers. Placing sutures accurately in a difficult RVF is not easy, so the second layer will give extra security (5/8-circle needles are most helpful). If a colostomy is present then a good single layer is sufficient.

After the repair has been completed, it is essential to check that the lumen is adequate by palpation per rectum. As the rectum is a capacious organ, a degree of narrowing is acceptable, provided that it will admit two fingers. Exceptionally, the rectum is so stenosed on initial assessment that it requires a complete resection and end-to-end anastomosis. (Figure 7.2) A few surgeons have developed the skill of performing this resection entirely trans-vaginally. This is very demanding, and few can do it confidently.

Some surgeons would consider a purely abdominal approach. For an experienced colorectal surgeon working in ideal conditions, a resection and end-to-end anastomosis is not difficult. However, in the average rural operating theatre with suboptimal lighting and instruments, this is quite another matter. It is important to appreciate that the usual bloodless fascial plane that is used to dissect the rectum and mesorectum out of the pelvis will be obliterated by scar at the site of the fistula. There is a real risk of opening the rectum where it is densely adherent to the sacrum, or of entering the presacral veins during this dissection. (The emergency management of presacral bleeding is to use a sterile drawing pin. It is pushed through the bleeder into the sacrum—it will do no harm. Failing this, one has to pack and come out.)

There are occasions where the combined vaginal and abdominal approach is very helpful. In spite of persistent mobilisation from below, it is sometimes not possible to close a very high defect in the rectum securely. After opening the abdomen, it is often easy to complete the repair from above, most of the mobilisation already having been done. (Figure 7.7)

Recto-vaginal fistulae are usually involved with more vaginal scarring and after releasing and sometimes excising the scar tissue there might be very little vaginal tissue to reconstruct the posterior vaginal wall. Flaps such as rotational gluteal and Singapore flaps can be used. If not well covered the scar tissue will contract up again, stenosing the vagina causing dyspareunia or even apareunia.

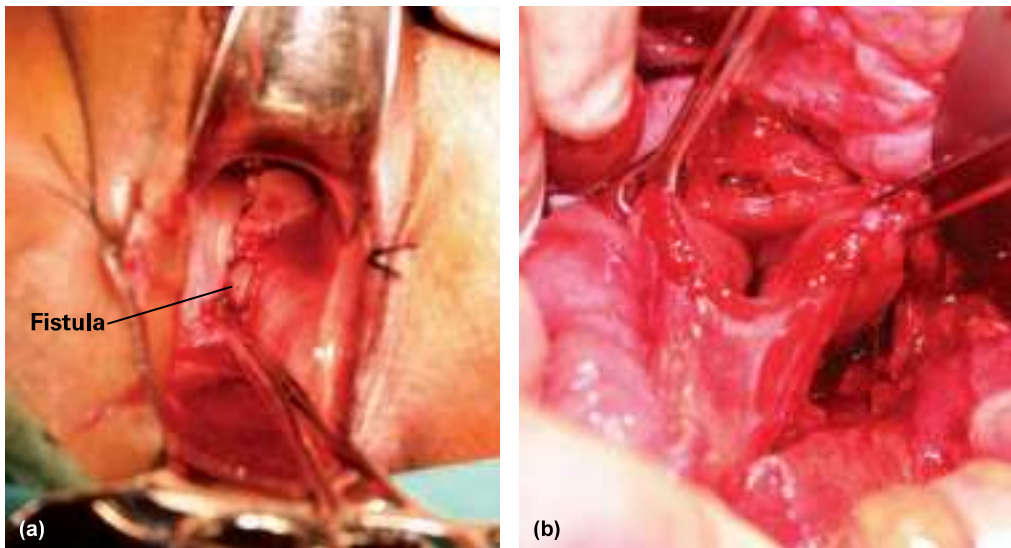


Figure 7.7

a) A high RVF. The distal end could be mobilised vaginally but the proximal end was difficult to reach. b) It was readily exposed by the abdominal route. This was easier because the distal margin had already been mobilised vaginally.

Results of Rectal Repairs

It is most surgeons' experience that the results of repair are good, although it is not known how many cases are turned down because of severe injury. In a series of over 100 RVF patients (found in over 1,000 consecutive obstetric fistula patients), 98% successful closure and continence was recorded at the first operation.

The success rate for the concomitant bladder repair with the RVF is much worse. Less than 50% are discharged dry from the associated VVF as an RVF is usually associated with a scarred, circumferential VVF involving the urethra, which has a poor prognosis. It is rare to find a juxtacervical fistula in association with an RVF.

Finally, it must be emphasised that surgery for high RVF is demanding, and should not be undertaken lightly by inexperienced surgeons. Only the low fistulae are relatively easy.

Further Reading

Browning A, Whiteside S. Characteristics, management, and outcomes of repair of rectovaginal fistula among 1100 consecutive cases of female genital tract fistula in Ethiopia. *Int J Gynaecol Obstet* 2015 Oct;**131**(1):70–3.

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Kelly J, Kwast BE. Epidemiological study of vesico-vaginal fistula in Ethiopia. *Int Urogynaecol J* 1993; **4**: 278–1.

Muleta M, Williams G. Post coital injuries treated at the Addis Ababa Fistula hospital 1991–1997. *Lancet* 1999; **354**: 2051–2.