

## 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) and neurological damage. Isolated RVFs due to obstructed labour are extremely rare, but may be caused by sexual violence in war situations or in under-age marriage.

Anal sphincter tears usually occur in isolation unrelated to obstructed labour, and should not be classified as RVFs unless there is significant extension into the rectum.

Incompletely repaired sphincter tears are another source of low RVF.

### 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 above the level of the sphincter. However, a few 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 have an RVF as well.<sup>1</sup> An unusual incidence of isolated traumatic RVF in under-age brides has been reported from Ethiopia.<sup>2</sup> 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 partly explained by the much lower incidence of caesarean section in the Ethiopian fistula patients (15% vs 65%)

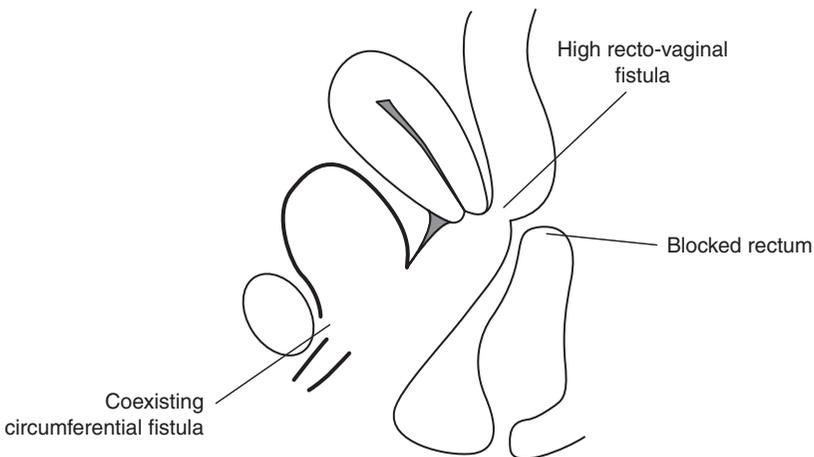
Those patients who eventually deliver vaginally suffer more ischaemia than those whose obstruction is relieved by caesarean section. Thus, the incidence of RVF in those delivered by caesarean section is similar in the two countries at about 2%, whereas for those delivering vaginally, the percentage increases to 5.2% in Uganda but is still significantly below that in Ethiopia at 9.3% ( $p = 0.001$ ).

### 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.<sup>3</sup> In practice, most people describe RVFs as low, high or intermediate. An estimate is made of the size and the amount of scar surrounding the defect.

## Assessment

It is important to recognize 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 carefully assessed. Narrowing may well be present, 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 7.1).



**Figure 7.1** A completely stenosed rectum.

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.

### Does every RVF need to be closed?

Not all RVFs need to be closed. The symptoms of RVF vary from complete faecal 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 few symptoms.

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. If the RVF is easily accessible, it can be repaired after the VVF, but, if it is high and potentially difficult,

it can be safely ignored. I have on four occasions not closed a small RVF after repairing the VVF. This did not compromise the bladder repair.

The discovery of a larger RVF during an operation is an embarrassing error of preoperative assessment, and its management depends on its site and size and the experience of the operator.

### Which rectal fistulae require a colostomy?

We believe that 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 are rarely required. A colostomy should never be performed by a general surgeon in the vague hope that someone can be found to repair the fistula later. To live with a colostomy is probably of equal misery for the patient as the rectal fistula. We have seen far too many badly made colostomies that have prolapsed, adding 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, and the lower bowel is empty, there is no need for a colostomy.

Experienced surgeons recognize 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 preliminary colostomy has been made. Colostomies are not going to increase the chance of healing – they simply lessen the postoperative complications of sepsis or peritonitis should a major breakdown occur.

A strategy that I have found to work for the high difficult fistula is to do as much as possible of the mobilization 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.

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).

Sometimes, a patient is seen very soon after her birth trauma, and examination reveals a large sloughing VVF and rectal defect. These patients are usually 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 may never be closed.

We now hardly ever perform colostomies, although we still see some that were done elsewhere before the patient came to us.

## Performing a colostomy

If a colostomy is necessary, I prefer that it be made with the pelvic colon. It should be performed through a lower midline laparotomy, bringing the proximal pelvic colon out through a small defect to the left of the umbilicus, just through the lateral rectus sheath. This minimizes the risk of colostomy prolapse. In the cases that we have seen performed by other surgeons in Africa, 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 to the rectus muscle.

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

1. Use the pelvic colon.
2. Make a separate lower midline incision.
3. Choose the proximal pelvic colon where it is not too mobile.
4. Bring a loop out through a small defect that comes through the rectus muscle. The defect in the skin and rectus sheath (the rectus fibres are split) should be just enough to admit two thumbs comfortably.
5. The bowel loop should be secured in position over a firm plastic rod, and the bowel should be opened transversely and immediately sutured to skin. The rod is removed after 10 days.

A massive prolapsed colostomy is a disaster (Figure 7.2). If the RVF cannot be closed, the only solution is to close the transverse colostomy and perform a definitive end-pelvic colostomy.

## Strategy for repair of a double fistula

Whenever possible, the RVF and the VVF should be repaired at the same visit to the operating theatre. It does not matter which is repaired first. Probably, most surgeons start with the bladder repair, but there is no reason why the RVF should not be done



**Figure 7.2** (a, b) Two cases of massive colostomy prolapse.

first. If this proves demanding, the bladder repair can be deferred. Most double fistulae will have a degree of vaginal stenosis, so wide relaxing incisions and episiotomies are needed. There may be difficulty in covering either of the defects, so the final decision about closure of the vagina may be left until both have been repaired.

## 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 as well. An oral purgative such as sodium picosulphate (Picolax) or mannitol is very helpful. Before the anaesthetic is administered, a check should be made that the rectum is empty – if it is not then the operation should be deferred.

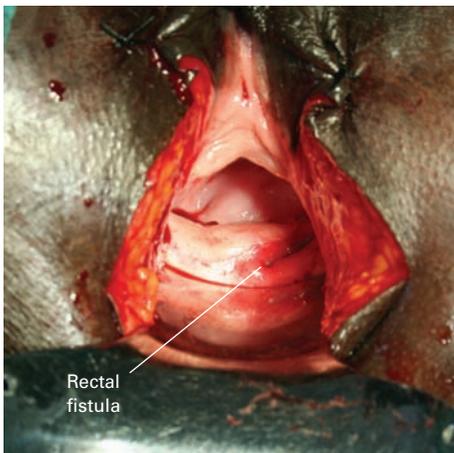
## Technique

As for VVF repair, the first essential is very good exposure (Figure 7.3).

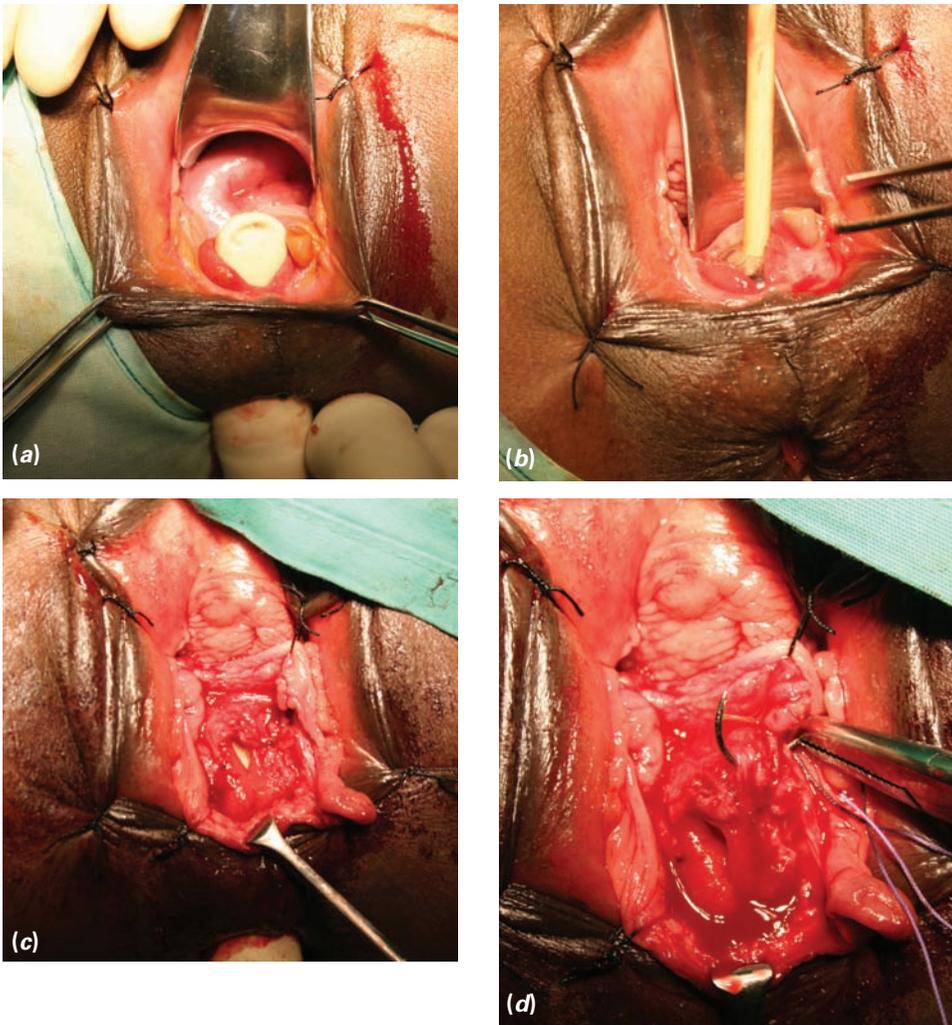
The repair of a simple low RVF is illustrated in Figure 7.4. This was caused by trauma in an under-age marriage.

At the Addis Ababa Fistula Hospital, where the surgeons have the greatest experience of RVF, the operative field is kept clear by swabbing by an assistant, but I find that suction is helpful, as blood accumulates in the operative field. It also helps to reduce the Trendelenberg tilt for the high fistulae.

When adequate exposure has been achieved, an incision is made around the fistula. For a small mobile fistula, it is useful to pass a Foley catheter through the defect, blow up the balloon and pull on it to bring the fistula margins into view. However, many RVFs are surrounded by varying degrees of scarring, and this approach does not work. It may be helpful to add T extensions (Figure 7.5) to the lateral margins so that a large inferior and superior flap of vaginal skin can be developed.



**Figure 7.3** A bilateral episiotomy has been used to expose this RVF in the mid-vagina.

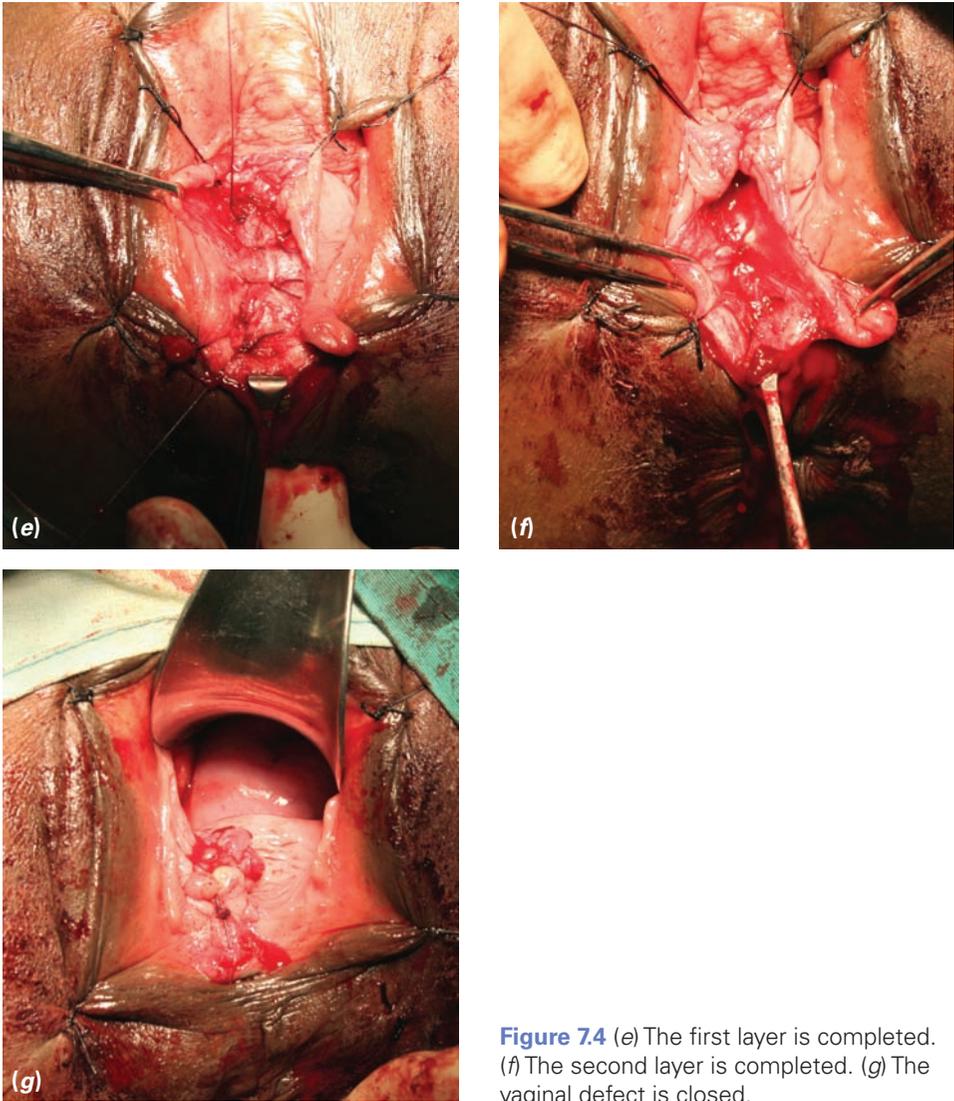


**Figure 74** (a) A simple low recto-vaginal fistula. (b) A Foley catheter is used to expose the mobile fistula. (c) The vagina is separated from the rectum. (d) Full-thickness bites of rectal wall are taken, avoiding the rectal mucosa.

*Continued*

The lateral margins are the most difficult to mobilize, as they are frequently bound by scar. Generous vaginotomies may lead one into the pararectal space just below 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.

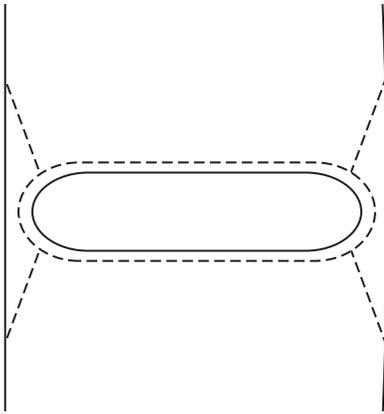
As the posterior vaginal wall is shortened, the pouch of Douglas is often opened during the superior dissection. This is an advantage, as the rectum becomes more mobile and assessable. Significant bleeding during a rectal dissection indicates that one has strayed into the rectal wall.



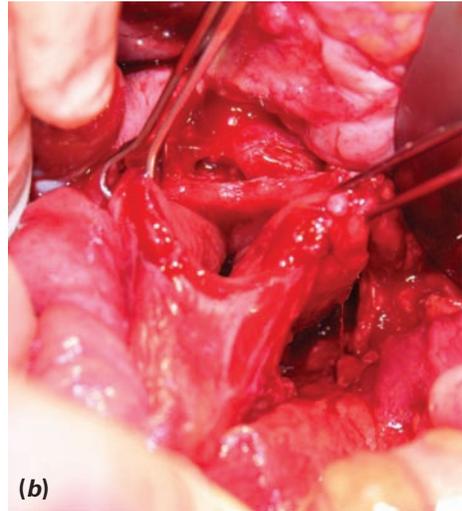
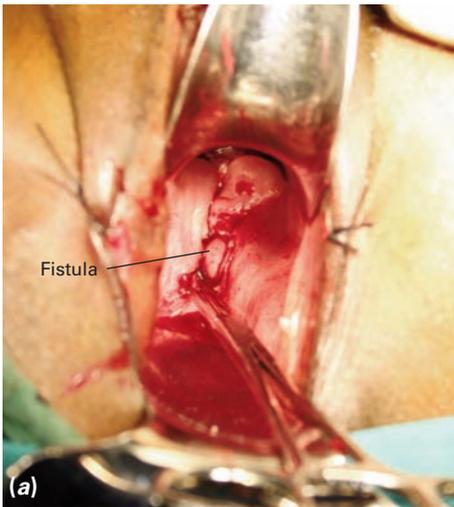
**Figure 74** (e) The first layer is completed. (f) The second layer is completed. (g) The vaginal defect is closed.

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. One surgeon at the Addis Ababa Fistula Hospital has



**Figure 7.5** The incision around the fistula is shown by the dashed line. T extensions are made at each end.



**Figure 7.6** (a) An isolated high RVF seen vaginally. (b) The defect has been exposed by an abdominal approach, and is ready for suture.

developed the skill of performing this resection entirely trans-vaginally. This is very demanding, and this surgeon's particular skill has been developed only through much experience following from referrals of most of the serious RVF cases.

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 African operating theatre, 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.)

Given the conditions that exist in many African hospitals, an abdominal approach is not recommended as the first line. The exception was at the Addis Ababa Fistula Hospital, where I have seen two exceptional case of isolated very high fistulae adherent to the sacral promontory. These were out of reach vaginally, but were quite easily closed by an abdominal approach, which also allowed simultaneous closure of the pre-existing colostomies (Figure 7.6).

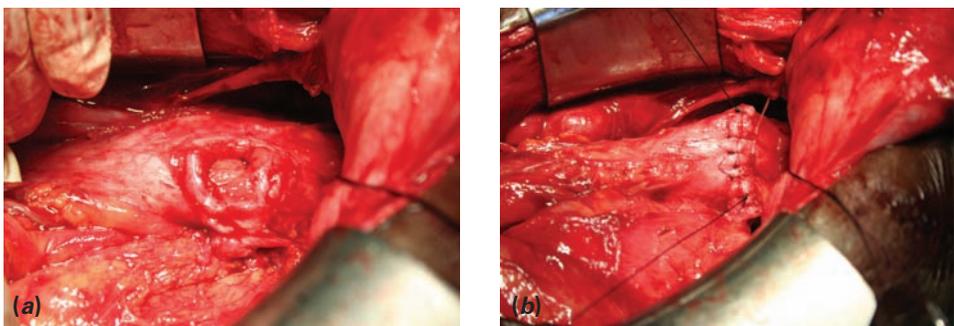
There are occasions where I have found a combined approach very helpful. In spite of persistent mobilization from below, I have not felt able to close a defect high in the rectum securely. After opening the abdomen, it was quite easy to complete the repair from above, as most of the mobilization had already been done (Figure 7.7).

### Results of rectal repairs

It is most surgeons' experience that the results of repair are good, although we do not know how many cases are turned down because of severe injury. Exceptionally, I see a patient with an RVF and bladder injuries so bad that I consider them inoperable. Given ideal operating conditions, I might have been able to operate on some of these patients.

I classify one-third of RVFs as high, and prefer to repair these first, sometimes deferring the VVF repair to a later date. Of these high cases, I close half vaginally and the other half by a combined approach. In the Addis Ababa Fistula Hospital, I have closed five specially selected cases entirely from the abdomen.

In cases with a low- to mid-level RVF, I almost always close the bladder defect at the same visit to the operating theatre. Of my 47 rectal repairs, only 2 required a second repair, and 1 was so bad that she was left with a permanent colostomy.



**Figure 7.7** (a) A high RVF started from below and completed from above. The fistula margins are trimmed and ready for suture. (b) The defect has been closed with a single layer of inverting sutures.

The success rate for the concomitant bladder repair was much worse. Less than 50% were discharged dry. These poor results reflect the severe injury in the region of the bladder neck that so often accompanies an RVF. It is rare to find a juxta-cervical fistula in association with an RVF.

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

## References

1. Kelly J, Kwast BE. Epidemiological study of vesico-vaginal fistula in Ethiopia. *Int Urogynaecol J* 1993; **4**: 278–81.
2. Muleta M, Williams G. Post coital injuries treated at the Addis Ababa Fistula hospital 1991–1997. *Lancet* 1999; **354**: 2051–2.
3. Goh J, Krause H. *Female Genital Tract Fistula*. Brisbane: University of Queensland Press, 2004.