2 Diagnosis

History taking

The following details are required:

- **Symptoms**. It should be confirmed that the patient is wet all the time. If she is dry at night then she probably does not have a fistula (although there are exceptions – see 'Dye test' below). She should be asked whether there is any leakage of faeces as well as urine. A small hole in the bladder leaks just as much as a large one, but some patients with a rectal fistula may only be aware of soiling when they have diarrhoea.
- **Age.**
- **Parity**. If the patient is multiparous then which delivery caused the fistula?
- **How long has the patient been wet?**
- **Mode of delivery.** Was birth by vaginal delivery or caesarean section?
- **How long was she in labour?** The average is about 3 days.
- **Where did the delivery take place**? Home, maternity centre or hospital?
- **Did the child survive?** Almost all vaginal deliveries result in a stillbirth, but a few delivered by caesarean section are alive. This strongly suggests an iatrogenic injury.
- **Neurological symptoms.** Complete paralysis is rare, but minor degrees of foot drop are common.
- **Does she still menstruate?** Amenorrhoea is quite common after such a traumatic childbirth, but if the patient had a caesarean section then one should suspect a hysterectomy for a ruptured uterus. Some patients do not know that they have lost their uterus.
- **Have any attempts been made to repair the fistula**? Patients sometimes hide this information for fear that they will be turned away.
- **Social history.** The majority of patients with a long-standing fistula are single and live a very restricted life. The longer that they have had the fistula, the more likely it is that they will be alone and live a subsistence existence supported by relatives.

History taking does not help very much in selecting the easy cases. There are, however, some clues that should arouse suspicion of a serious injury:

- Neurological weakness (usually foot drop), even if it has recovered, is indicative of this.
- Rectal fistulae are usually associated with a serious bladder injury. This does not apply to anal sphincter injuries, which often occur in isolation and should not be classified as recto-vaginal fistulae.
- Fistulae following a caesarean section are often in the region of the cervix, owing to a combination of ischaemia and operative trauma.
- A fistula following hysterectomy for a ruptured uterus will usually be in the vault or due to an accidental ureteric injury.

Examination

Inspection

The abdomen

Are caesarean or other scars present? Is any swelling visible? The patient could be pregnant! Repair should generally be avoided in pregnancy unless it is the patient's only real chance of finding a skilled surgeon. Bleeding can be very troublesome during the repair.

The perineum

- Look for obvious wetness and urine dermatitis (Figure 2.1). (The dermatitis is caused by concentrated urine. The patient should be asked to drink more if it is not possible to operate immediately.)
- Can the urethral orifice be seen? In very bad fistulae, it can be completely destroyed (Figure 2.2).

Figure 2.1 Urine dermatitis.

Figure 2.2 A case with complete destruction of the urethra and the prolapsed bladder filling the vagina.

Figure 2.3 A superficial stenosis seen on inspection.

Figure 2.4 Complete dense occlusion of the vagina.

- Is there any sign of stenosis (Figures 2.3 and 2.4)?

Palpation

Begin with the abdomen in order to exclude an unexpected pregnancy or other swellings. Follow this with a vaginal examination. Use the lubricated index finger gently.

- Is the vagina of normal size and depth? Can the cervix be felt? Is there any vaginal narrowing? Smaller degrees are felt as a band of fibrous tissue around the lateral and posterior circumference at any depth in the vagina. In extreme cases, the whole vagina is stenosed. The anterior wall is frequently shortened in the presence of a fistula. Carefully palpate the posterior wall for a recto-vaginal fistula.
- Can a defect be felt in the anterior vaginal wall? This will range from a large defect where the finger immediately enters the bladder, to smaller defects that just admit a finger, to the smallest ones where no defect is felt at all. If a defect can be felt, where is it in relation to the urethra and the cervix? If a defect can be felt, consider the margins carefully. Are they soft and supple, somewhat rigid or (in the worst cases) stuck to the pubic rami?
- The anterior cervix is often torn in fistula patients. Defects in this region are often difficult to feel unless they are large. The cervix may be easily felt low down in the vagina when a large amount of anterior wall has been lost.
- Feel the posterior vaginal wall carefully for a rectal defect. Rectal fistulae are usually associated with severe vaginal scarring and a bad bladder fistula, but occasionally they are small, soft and easily overlooked or just hidden behind a posterior band of scar. If one is suspected, a rectal examination should also be performed. Look at the perineal body and anal sphincters for any tears.

If preferred, the fistula can be inspected. This is best done with the patient in the lithotomy position using a Sims speculum, although some surgeons prefer the left lateral position with the right leg supported.

What should be done if the patient says that she is wet but it is not possible to see any wetness or feel a fistula?

In this situation, the patient should be asked to drink plenty and then be re-examined. (It should be remembered that many patients drink very little, especially if they know that they are going to be examined.) If it is then confirmed that the patient is wet but the fistula cannot be felt, proceed as follows:

- With the patient in the left lateral position, use a Sims speculum to expose the anterior vaginal wall (Figure 2.5). Ask the patient to cough. A small fistula may be readily visible.
- Alternatively, perform a dye test in this position or the position shown in Figure 2.6.

Dye test (Figure 2.6)
Dilute methylene blue (or gentian violet) should be used – if it is too concentrated, it will stain everything, making interpretation of the test difficult.

1. Insert a catheter.
2. Fill the catheter balloon with dye and have two or three moist swabs ready to put into the vagina.
3. Insert the swabs well into the vagina.
4. Slowly instil about 60 cm^3 of dye.

Figure 2.5 Exposure of the anterior vaginal wall.

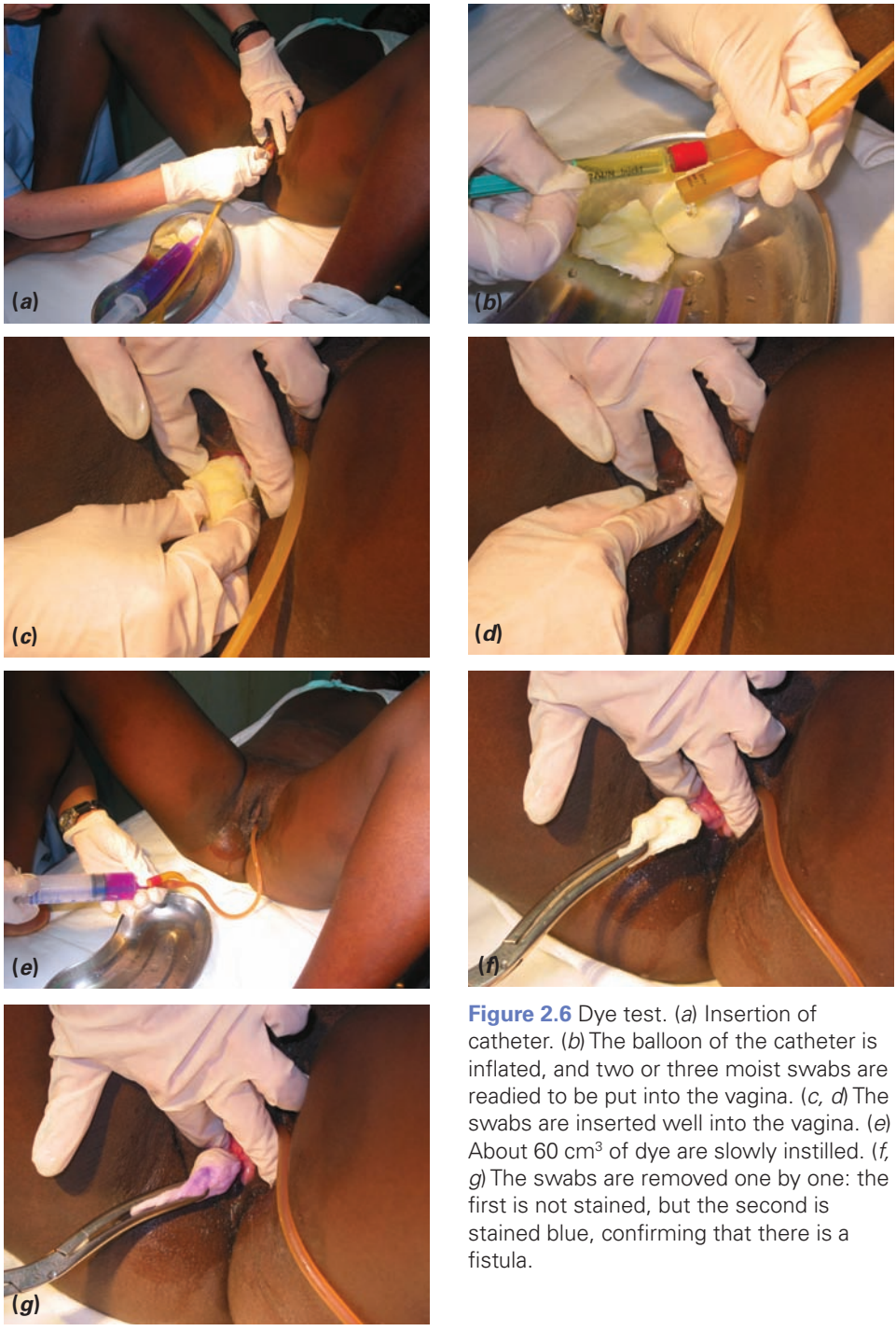

Figure 2.6 Dye test. (*a*) Insertion of catheter. (*b*) The balloon of the catheter is inflated, and two or three moist swabs are readied to be put into the vagina. (*c, d*) The swabs are inserted well into the vagina. (*e*) About 60 cm^3 of dye are slowly instilled. (*f, g*) The swabs are removed one by one: the first is not stained, but the second is stained blue, confirming that there is a fistula.

5. After 1 minute, ask the patient to cough.
6. Remove the swabs one by one.
7. If any of the swabs are stained, this indicates the presence of a fistula.
8. If none of the swabs is stained, there could still be a fistula. Repeat the test using up to 200 cm^3 of dye. The patient should walk around for 20 minutes while the dye is in the bladder. Sometimes the hole is very small, especially if it is between the cervix and the bladder. It is easy to overlook a tiny fistula.
9. If this second test is negative but the swab is wet with urine, there is a ureteric fistula.

Ureteric fistulae

A ureter can be damaged accidentally during a caesarean section, but injury is more likely during an emergency hysterectomy for a ruptured uterus. The ureter may be ligated and included in the lower-segment repair. Later, urine starts leaking through the cervix. After hysterectomy, urine may leak into the pelvis, and some days later finds a way out between the sutures in the vaginal vault. Although ureteric fistulae are uncommon, it is very important to recognize them, because they can be easily repaired by an abdominal operation (see Chapter 6).

To exclude a ureteric fistula, empty the bladder and insert a dry swab into the vagina. Ask the patient to drink and walk about. Re-examine her after half an hour. If the swab is wet then there is a ureteric fistula. On questioning, the patient should admit to being able to empty her bladder, as the other ureter should be functioning normally.

Postpartum stress and chronic retention

Postpartum stress is occasionally troublesome, and can be mistaken for a fistula. Following the dye test, take the catheter out, leaving the dye inside. Watch to see if it dribbles out of the urethra, and then ask the patient to cough. If there is significant stress, dye will come out. Then check her residual urine after voiding. Management is conservative with pelvic floor exercises, but surgery is occasionally needed after at least 6 months of conservative management.

Another uncommon cause of incontinence is the postpartum atonic bladder leading to overflow incontinence. Bladder function is disturbed by prolonged labour. This condition should be managed prophylactically by continuous bladder drainage post delivery for at least 8–10 days. If this is not done, chronic retention may result and be diagnosed much later when it is hard to treat. It may settle after a period of continuous catheter drainage, although a better option is to teach the patient intermittent self-catheterization.

Investigations

These include the following:

- Haemoglobin.
- Ultrasound scan. If available, this should be used more often, especially for bad cases. It is useful to be forewarned of a dilated renal tract.
- Intravenous urograms. These are rarely available, but can give useful information about the function of the kidneys when ureteric involvement is suspected.