5 In Theatre

The anaesthetic

Spinal anaesthesia is the preferred method for all fistula cases (Figure 5.1). Many surgeons give spinal anaesthesia themselves. Bupivacaine 0.5% in glucose (Marcain Heavy) is ideal as the longest-acting anaesthetic, although lidocaine 5% in glucose 7.5% can have its duration extended by the addition of adrenaline (epinephrine). The technique favoured by some is to draw up adrenaline 1 in 1000 into the syringe, expel it and then draw up the lidocaine. The wetting of the inside of the syringe provides enough adrenaline.

Figure 5.1 The ideal position in which to administer spinal anaesthesia. (Photograph taken at Katsina, courtesy of Kees Waaldijk.)

Figure 5.2 A slight head-up position with the head on a pillow is maintained for 10 minutes after the injection. (Photograph taken at Katsina, courtesy of Kees Waaldijk.)

The usual dose is 2 cm^3 of lidocaine 5% in glucose 7.5% or 2 cm^3 of Marcain Heavy. Some surgeons sit the patient up for 5 minutes; others lie the patient down, slightly head-up, for 5 minutes before putting the legs up; yet others lay the patient down and put the legs up in stirrups right away. The critical step is that there should be *no head-down tilt for at least 10 minutes* until all the anaesthetic has been fixed – otherwise paralysis of the respiratory centre may be fatal (Figure 5.2).

Both Kees Waaldijk and Andrew Browning, through force of circumstances, operate without any anaesthetic back-up, and can finish their operation before the spinal anaesthetic wears off. However, neither is able to perform any abdominal operations. Less experienced surgeons would not feel comfortable operating without anaesthetic help. Some patients require pethidine or occasionally ketamine to complete the operation, and unexpected emergencies can arise at any time.

Other surgeons, including myself, prefer the option of occasionally changing to an abdominal approach after assessment vaginally under spinal anaesthesia. If the patient was lying flat initially for 5 minutes, the spinal anaesthesia should be high enough to allow a lower abdominal approach, but it is essential to have anaesthetic back-up in case of difficulties during an abdominal operation.

Antibiotics

Some surgeons give no antibiotics, whereas a few prescribe them throughout the postoperative period.

It is well known that infection usually results from contamination during the operation, so it is our practice to give a single intravenous dose of gentamicin 160 mg at the start of surgery.

We would continue with antibiotics for 24 hours only if there has been accidental faecal contamination of a repair or if a rectal repair has also been performed. Our choice would be intramuscular gentamicin 80 mg and intravenous metronidazole 500 mg 8-hourly.

Instruments

Basic instruments

For simple fistulae, the following instruments are needed (Figure 5.3):

- Auvard speculum
- high-quality dissecting scissors
- toothed dissecting forceps
- Allis tissue forceps
- artery forceps

Figure 5.3 Basic instruments for a simple repair.

- metal catheter
- small probe
- no. 15 blade (not illustrated).

Additional instruments

For the full range of fistula surgery, some more specialized instruments are helpful.

Retractors

- Sims speculum for exposing the interior of the bladder
- small Langenbeck retractor for access to the vaginal fornices
- Auvard speculum – ideally, this should be available with short and long vaginal blades and with different angulations.

Scissors

Most surgeons have their favourite scissors; ours are the following (Figure 5.4):

- Boyd–Stille tonsil scissors for fine dissection
- Thorek scissors, sharply curved at the tip
- Stille–Matarasso fistula scissors for cutting through scar.

(See Appendix A for suppliers.)

Sutures and needles (Figure 5.5)

Non-absorbable sutures must never be used, because a stone may later form in the bladder.

Figure 5.4 Scissors: (*a*) Boyd–Stille; (*b*) Thorek; (*c*) Stille–Matarasso.

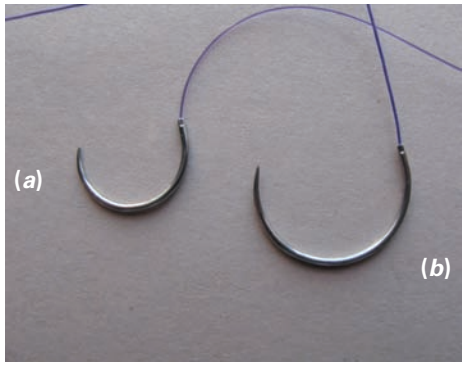

Figure 5.5 Our favourite needles for special situations: (*a*) 3-0 Monocryl on a 5/8-circle 26 mm round-bodied needle; (*b*) 2-0 Vicryl on a 5/8-circle 36 mm round-bodied needle. Both needles are very strong. (See Appendix A for suppliers.)

The choice of suture may be determined by what is available. Some stocks of chromic catgut are unreliable, and we prefer to avoid its use. Vicryl or Dexon, 0, 2/0 and 3/0, would be the first choice of most surgeons, if available. Newer monofilament absorbable sutures are very nice to use.

For closure of the bladder, half-circle, 26 mm, strong, round-bodied needles are best. For more advanced fistula work, eyed J-needles are a great help.

The perfect needle for a suture is a ready-mounted 5/8-circle 26 mm needle, but this is expensive. We reserve it for suturing in difficult corners and deep situations. Once you have used 5/8-circle needles, you will never want to use anything else!

A larger cutting needle is used for suturing vaginal mucosa.

Operating table

An operating table that tilts to at least 50° and has shoulder rests is advisable for the full range of surgery (Figure 5.6). Simpler fistula repairs can be carried out with a more modest tilt and without shoulder rests.

Figure 5.6 A tilting table.

Lighting

A simple spotlight is sufficient for easy cases (Figure 5.7). In situations where the electricity supply is erratic, it may be necessary to operate by daylight (Figure 5.8) – position the table close to a large window. On the other hand, in some hospitals, a full range of lighting equipment may be available (Figure 5.9).

As we operate in a variety of hospitals with unpredictable lighting (Figure 5.10), we prefer to have our own independent lighting source (Figure 5.11). The clip-on lamp can be used on one's own spectacles or supplied attached to a neutral spectacle frame. The rechargeable battery can be switched on and off through a sterile gown and provides brilliant spot illumination for 4 hours (see Appendix A for suppliers).

Figure 5.7 A simple spotlight.

Figure 5.8 Kees Waaldijk operating by daylight in Katsina.

Figure 5.9 A sophisticated lighting set-up in the Addis Ababa Fistula Hospital.

Figure 5.10 Faulty lighting equipment – a common situation in African hospitals.

Figure 5.11 (*a*) Andrew Browning wearing a portable headlight. (*b*) Operating with the headlight.

Position on the table

The steeper the head-down position, the better (Figure 5.12). However, very high-quality shoulder rests are essential for this. If these are not available then it is important that the patient's buttocks be well over the end of the table and the thighs well flexed over the abdomen (Figure 5.13).

Surgeon's position

The surgeon should be in a comfortable position (Figures 5.15 and 5.16).

Figure 5.12 John Kelly demonstrating the correct head-down position of the patient.

Figure 5.13 If there are no shoulder rests, the patient's buttocks must be well over the end of the table and the thighs well flexed over the abdomen to prevent her from slipping down.

Figure 5.14 In this operating theatre, the old table will not tilt much, but the patient's buttocks are over the edge and her legs are supported high up out of the way, giving clear vision to the assistant and scrub nurse.

Figure 5.15 This surgeon is most uncomfortable – the table is too low.

Figure 5.16 The operating field should be at eye level.