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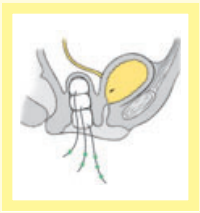

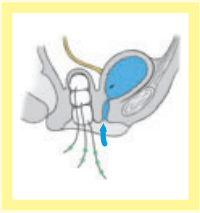

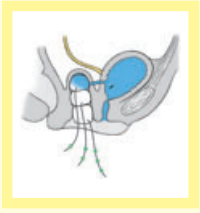

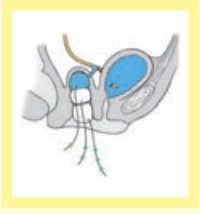

Surgical Atlas

Vesico-vaginal fistula

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ILLUSTRATIONS by STEPHAN SPITZER, www.spitzer-illustration.com

INTRODUCTION

Worldwide, the commonest cause of vesicovaginal fistulation (VVF) is obstructed childbirth, but, in obstetrically developed countries this is usually a complication of pelvic surgery, most commonly hysterectomy. It is almost always technically possible to close a VVF, even when the local tissue healing is compromised by irradiation changes but, in any particular case, a satisfactory functional result naturally depends on the competence of the residual sphincter mechanisms. To achieve primary closure of any fistula reliably, the surgeon must be equally experienced in both the vaginal and the various abdominal approaches: the distinction between a 'simple' and a 'complex' fistula is critical to selecting the one that is most appropriate.

The healing quality of the tissue margins of a 'simple' fistula are virtually normal so these can be reliably resolved by a simple, meticulously sutured, layer-closure; however, where appropriate local tissue is readily available, the additional interposition of a pedicled flap of this between the suture lines can virtually guarantee the expected success of the procedure. Failure to close a simple fistula reclassifies it as 'complex': in appropriately experienced hands, this should be a very rare event.

The resolution of a 'complex' fistula is generally very much more difficult and the result less reliable; success almost always depends on the interposition of a well-vascularised tissue layer. A vaginal fistula may be regarded as 'complex' for various reasons, amongst them extensive tissue loss, developmental deficiencies, the impaired healing potential of its margins, and all fistulae that involve the sphincter mechanism, post-obstetric and urethro-vaginal.

This short summary can offer no more than an outline of the various principles, considerations and procedures involved in the repair of VVF; we have recorded further details of all of these elsewhere [1].

PLANNING AND PREPARATION

The most important single factor in avoiding any postoperative complication or surgical injury to the lower urinary tract is a real awareness of the possibility that it can easily happen and every reasonable precaution must be taken to avoid it. Prevention is therefore far better than cure, and it is essential that, in addition to meticulous surgical technique, the surgeon should have an accurate knowledge of the relevant surgical anatomy of the ureters and the anatomical relationships of the base of the bladder, in particular its relationship to the vascular pedicles of the uterus and vagina. Appropriate surgical access is critically important, to overcome the confines of the pelvic cavity that naturally restrict this. Careful positioning of the patient and planning of the approach are essential,

together with an efficient retractor system.

INDICATIONS

It is relatively uncommon for even smaller VVF to close in response to conservative treatment by simple catheter drainage of the bladder. Early and effective definitive closure is therefore strongly advocated. Traditionally, the repair of VVF used to be deferred for 2–3 months to ensure that the initial local tissue healing reaction had settled beforehand. In recent years a major advance in managing postoperative fistula has been immediate repair, unless specifically contraindicated, e.g. because of massive haematoma or infection. The development of a urinary fistula after a pelvic surgical procedure should be regarded as a diagnostic and urological emergency. Immediate specialist referral is important because a 'hopeful delay' is likely to result in missing the optimum 'window of opportunity' for an early repair, with all its consequences, medical, psychological and medicolegal. After 2–3 weeks the local tissue reaction may make a repair more difficult and precarious, so it may be then advisable to defer definitive repair for 2–3 months or more to ensure that this has settled.

SPECIFIC EQUIPMENT/MATERIALS

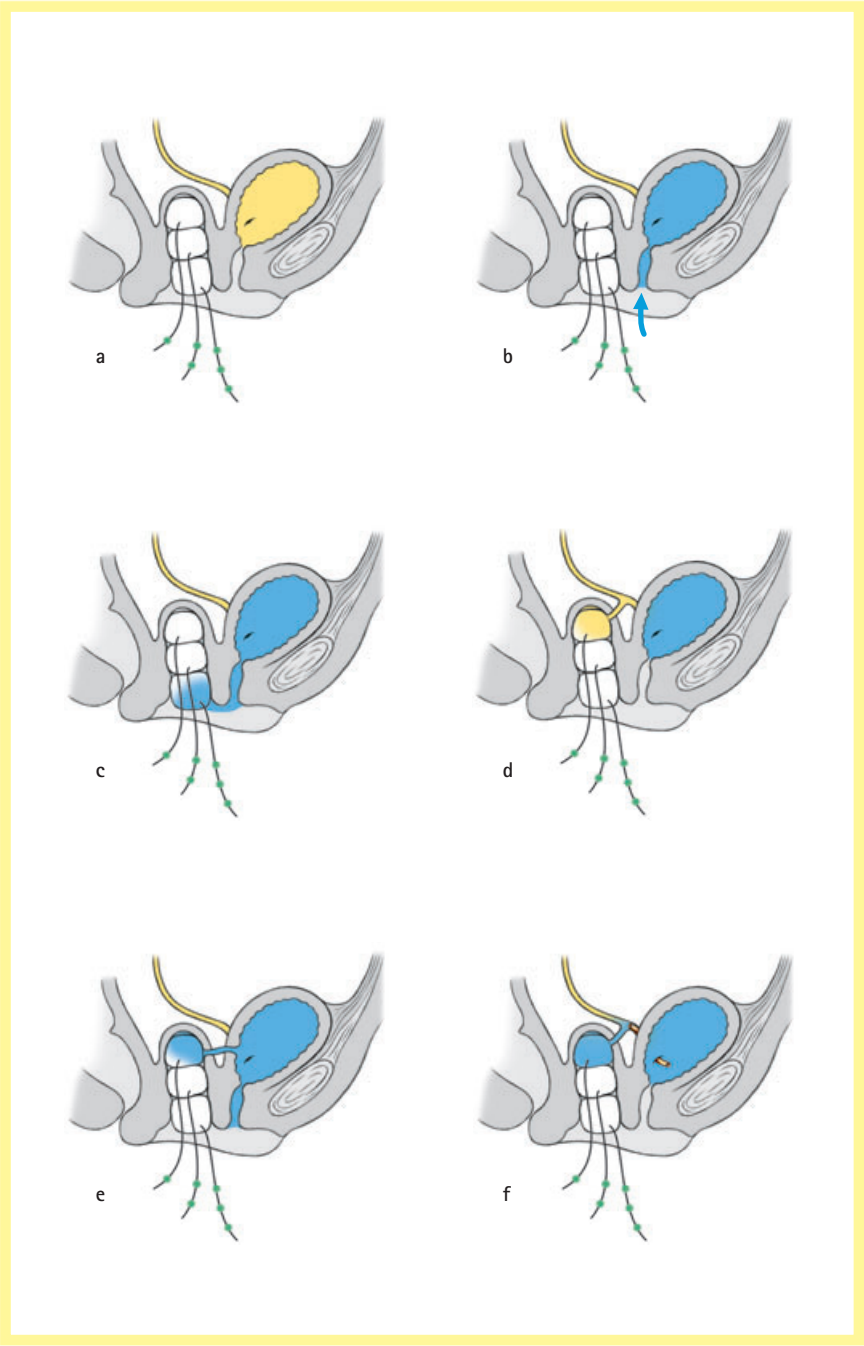
Appropriate instrumentation can greatly facilitate fistula repair. A ring retractor is recommended, along with a variety of fixed and malleable copper blades.

- An additional self-retaining retractor for vaginal surgery, e.g. Parkes anal retractor
- Curved needle holders (Turner Warwick)
- Additional targeted lighting, delivered either with the aid of a fibre-light 'sucker' or an appropriate headlamp.
- Cysto-urethroscope with a ureteric catheterization bridge (30° telescope).
- Ureteric catheters
- 16 F silicone Foley catheters
- Standard operating instruments at the preference of the surgeon.

THE DIAGNOSIS OF A VVF

Most VVF are easy to identify; those associated with thin-walled bladders, in the midline above the trigone, may be large enough to feel with the tip of a finger in the vagina. Conversely, a long-established 'pin hole' fistula at the base of the bladder is not associated with the use 'tell-tale' hyperaemia around its margins, and it may be difficult to identify endoscopically. If the appearance is equivocal it may be helpful to distend the bladder with irrigation fluid, with the patient in the lithotomy position, and to observe the anterior vaginal wall for a jet or a drip leakage, using a speculum in the vagina and a fibre-light sucker. Alternatively, examination of both the bladder and the vagina with a cystoscope, with gentle probing of suspicious areas with a guidewire, can also be extremely helpful, as catheterization of a fistula which might not be easy to detect can suddenly make the situation much clearer. It is important to remember that there may be more than one fistulous track, especially after the failure of a previous repair procedure.

Figure 1



The 'three-sponge' test can be helpful as an adjunct to bladder examination in identifying the source of a small urinary VVF that is difficult to locate. This simply involves placing three separate and suitably sized gauze sponges to gently fill the vagina, one above the other (Fig. 1a). Coloured fluid, e.g. aqueous methylene blue, is then introduced into the bladder with a catheter (Fig. 1b), and the three sponges removed after ≈10 min. Remember to remove the urethral catheter after filling the bladder, to avoid masking a urethro-vaginal fistula.

(1) If only the lower-most sponge is coloured, it suggests that the leakage has come down the urethra, indicating either a low urethral fistula or simply urethral incontinence back-tracking into the introitus (Fig. 1c).

(2) If both the lower sponges are unstained and the top sponge is wet with unstained urine it generally indicates a uretero-vaginal fistula (Fig. 1d).

(3) If only the upper sponge is stained it suggests a VVF (Fig. 1e). Very occasionally dye staining of the uppermost sponge can result from reflux of the dye from the bladder into the ureter and its leakage from a uretero-vaginal fistula (Fig. 1f).

The number of knots in the draw-string of each of the sponges indicates their level in the vagina after their removal.

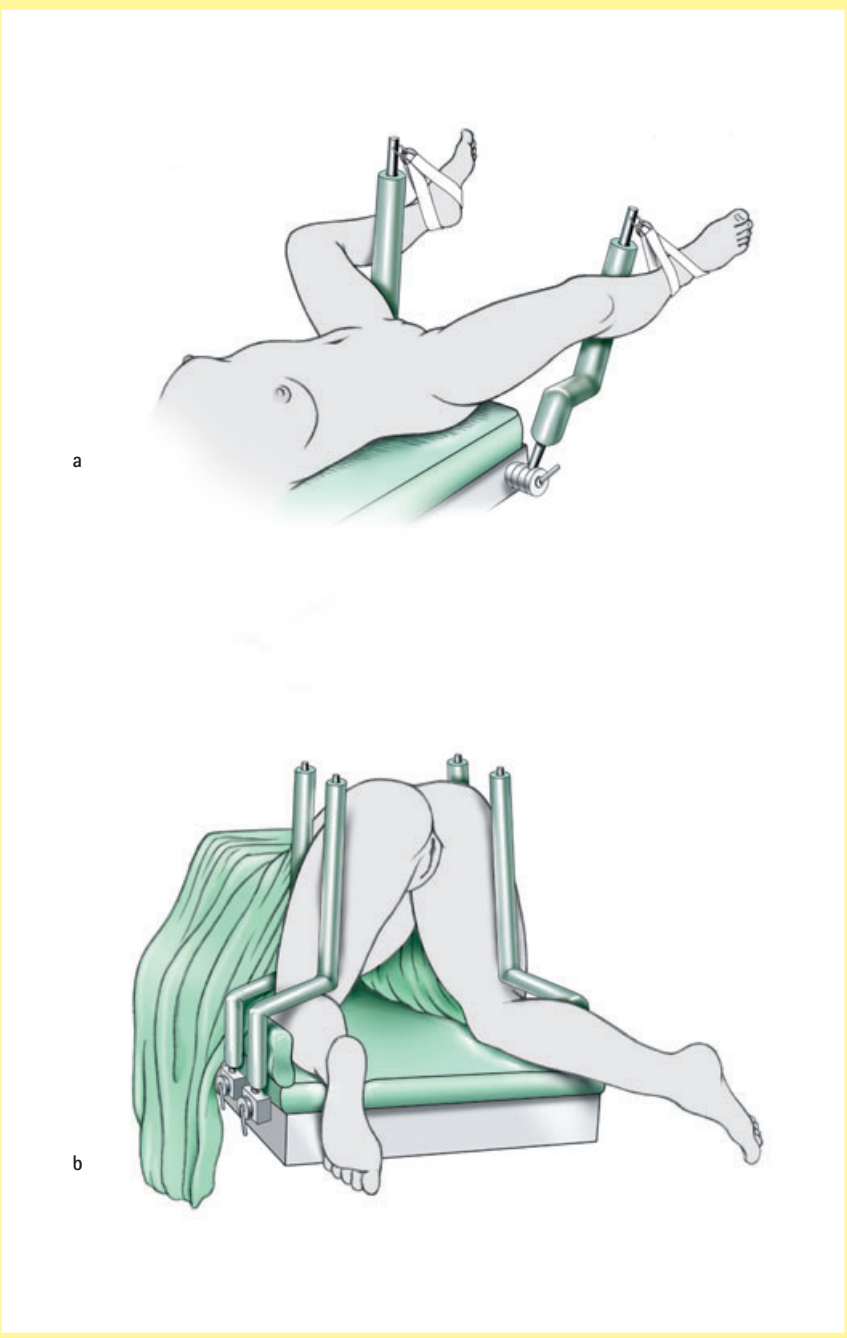


Figure 2

The options for the open surgical repair of a VVF are:

A vaginal approach. The positioning for a vaginal approach can either be with the patient in the standard lithotomy position (Fig. 2a) or in the modified Sims position (Fig. 2b).

An abdominal approach. A synchronous perineo-abdominal approach (PAPA); when operating via an abdominal approach it is also sensible to have the patient in the perineo-abdominal position so that manipulation of the vagina is easy and progression to a PAPA facilitated. We do not use the standard 'legs together' supine position when operating in the pelvis.

Irrespective of whether the primarily intended approach for a fistula repair is vaginal or abdominal, the perineum and abdomen are prepared and draped in a single sterile operating field for a synchronous procedure. When appropriate, mild additional flexion of the hips can be used for a vaginal approach in the PAPA position, because this is easily flattened in the event of a need for a synchronous abdominal approach. However, care must be taken to avoid the complication of the anterior compartment syndrome that can result from calf-pressure supports, such as the Lloyd-Davies, during prolonged operations [1].

During a definitive abdominal approach the synchronous vaginal access provided by the single sterile perineo-abdominal operating field of the PAPA position has particular advantages for VVF repair.

(1) It enables the placing of a finger in the vagina to guide the separation of the fused vesico-vaginal tissue layers around the fistula.

(2) Bleeding that develops low in the abdomino-perineal interposition tunnel is often controllable by vaginal finger pressure until definitive haemostasis is secured.

(3) It facilitates urethral catheterization and manipulation.

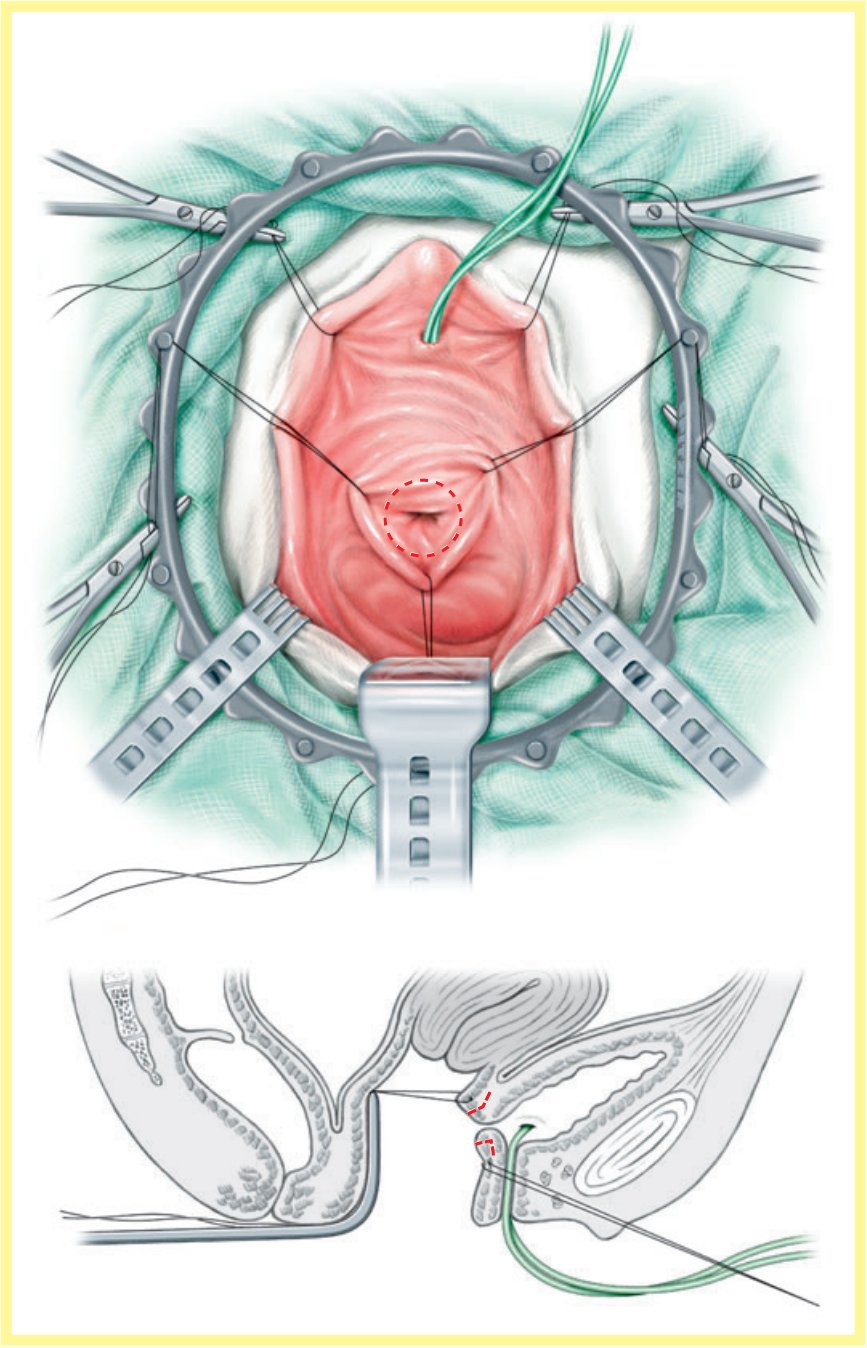
(4) Synchronous peroperative endoscopy and instrumentation procedures are occasionally helpful.

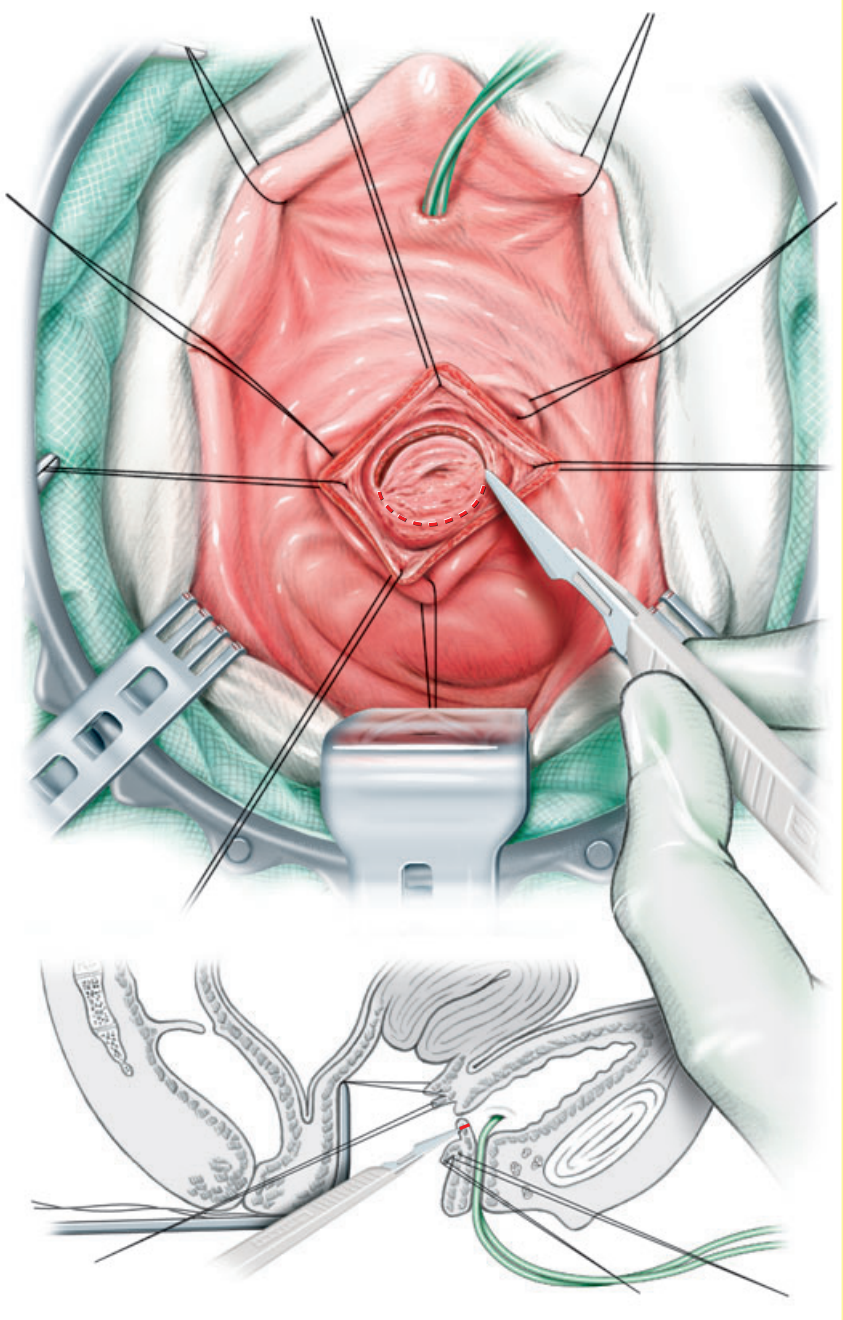
Figure 3

Ureteric catheters facilitate the identification of the ureteric orifices and the extravesical location of the terminal ureteric segments while repairing bladder-base fistulae.

The vaginal orifice of the fistula is identified. Two stay-sutures are inserted into the vaginal wall anterolateral to it and directional traction on these, anchored in relation to the appropriate guide-knobs of the perineal ring retractor, effectively draw the fistula down to the introitus. The traction on these stay-sutures is generally preferable to the alternative procedure of traction on a balloon catheter passed through the fistula, because this has to be removed before layered closure of the bladder.

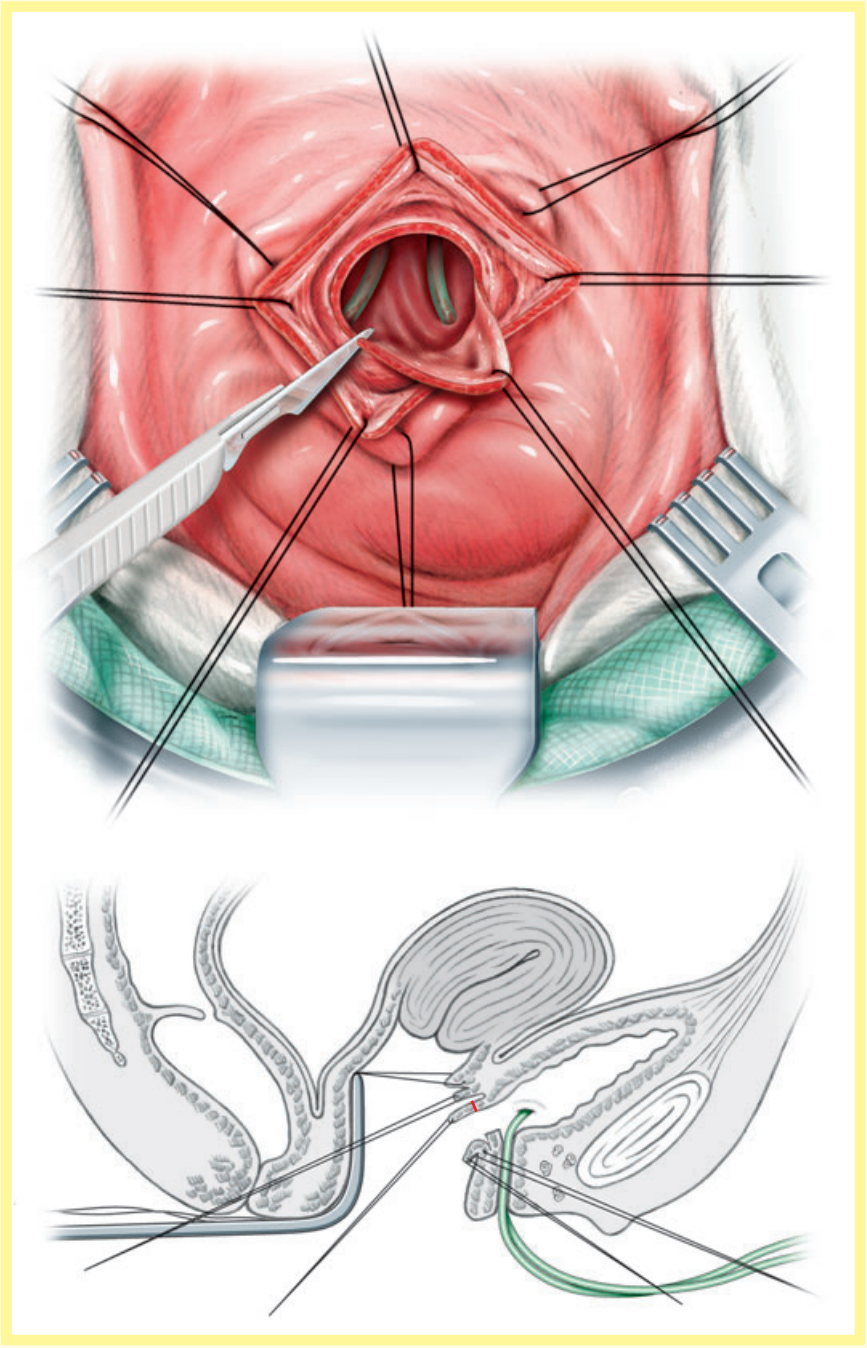
A third stay-suture is inserted into the vaginal wall in the mid-line above the fistula to stabilise its retraction. If laxity of the anterior vaginal wall does not allow this to be drawn down effectively to the introitus, it can be usefully retracted posteriorly using the guide-locating notch in the distal margin of the posterior vaginal blade of the ring retractors, with appropriate tension-anchorage at the ring margin.





Figures 4 and 5

The margin of the fistula is circumcised (dotted line); the excision of the peri-fistula scarring is facilitated by traction on additionally inserted stay-sutures. The layer between the vaginal wall and the bladder wall is developed.



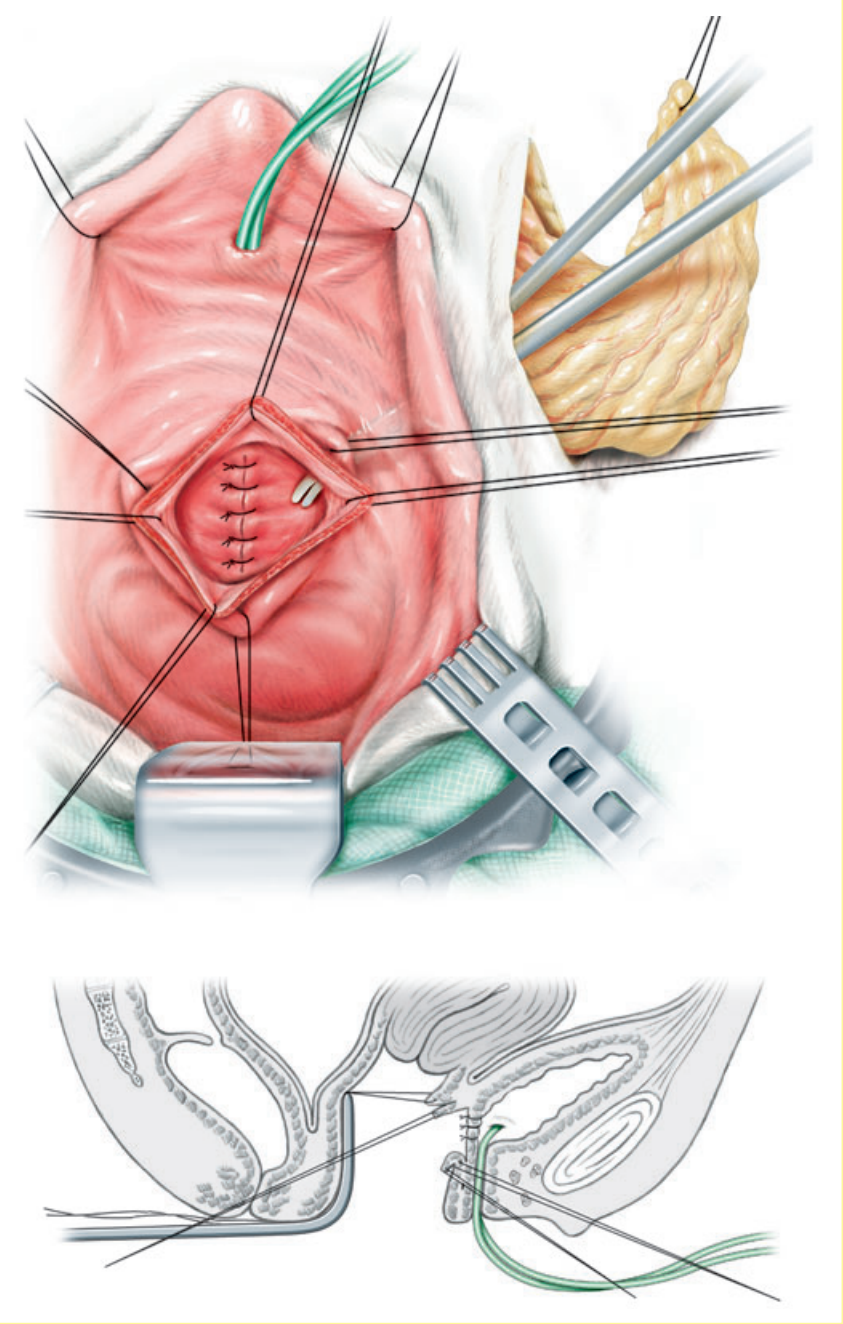
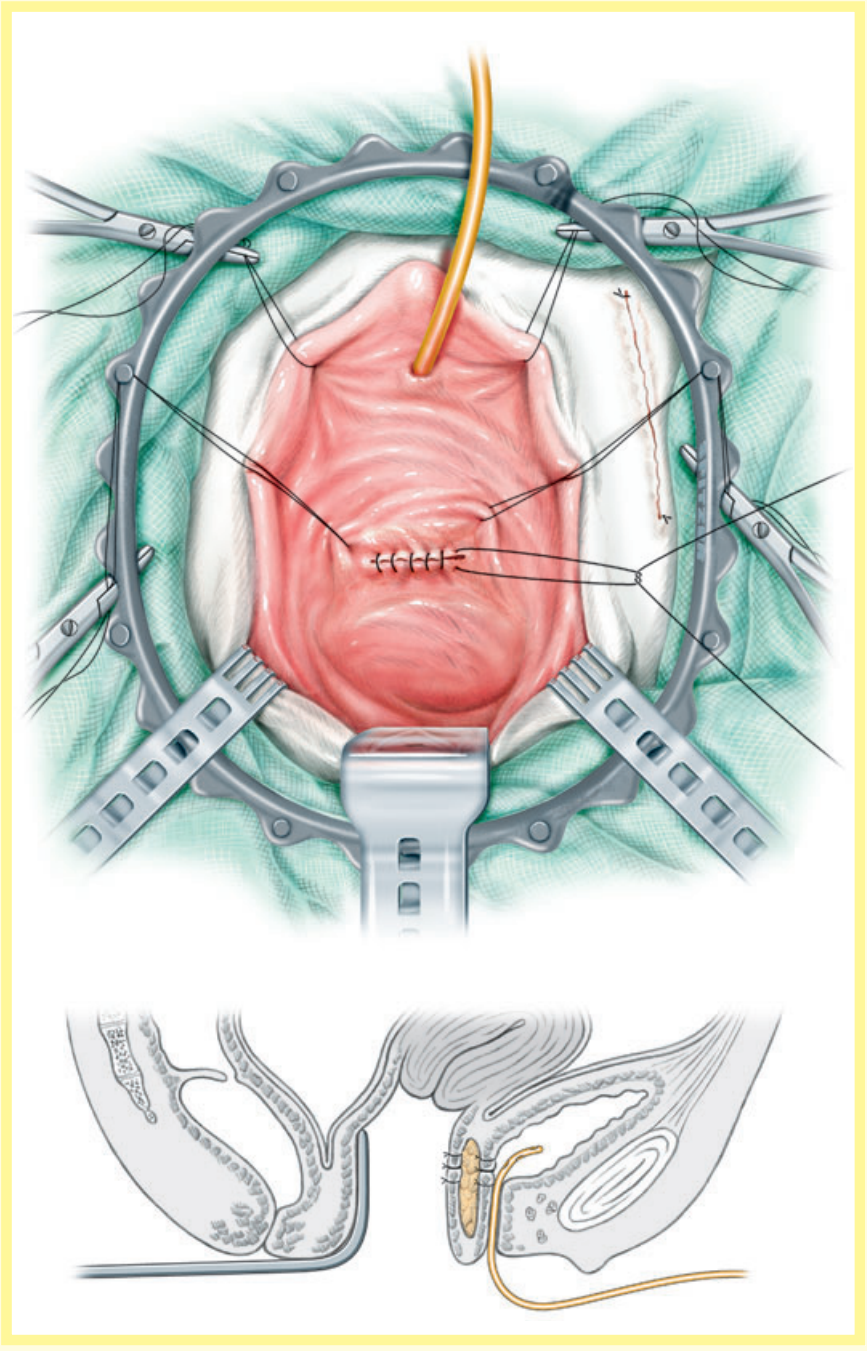


Figure 6

The bladder wall is closed with an interrupted 4/0 polyglycolic acid (PGA) suture, the knots being tied on the lumen until the last two or three sutures are inserted. A Martius interposition flap is raised and tunnelled through to the fistula closure site.

Figure 7

The vaginal wall is closed; the Martius labial incision is occluded with 3/0 PGA dead-space-encircling sutures. Both a suprapubic catheter and a urethral catheter are positioned. When the prone position is used for a vaginal repair the suprapubic catheter is inserted with the patient supine before they are turned prone.



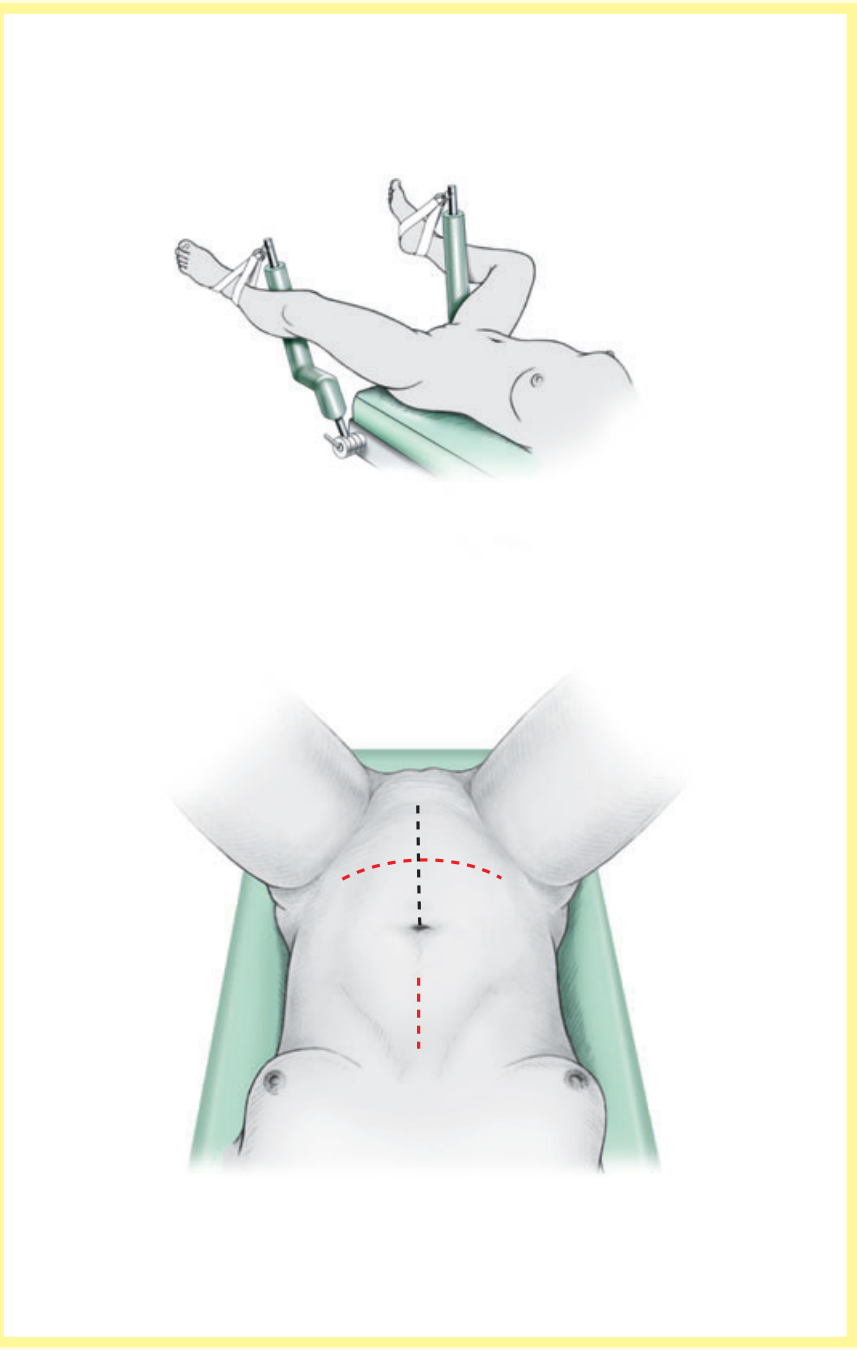


Figure 8

The 'supra-pubic cross' incision.

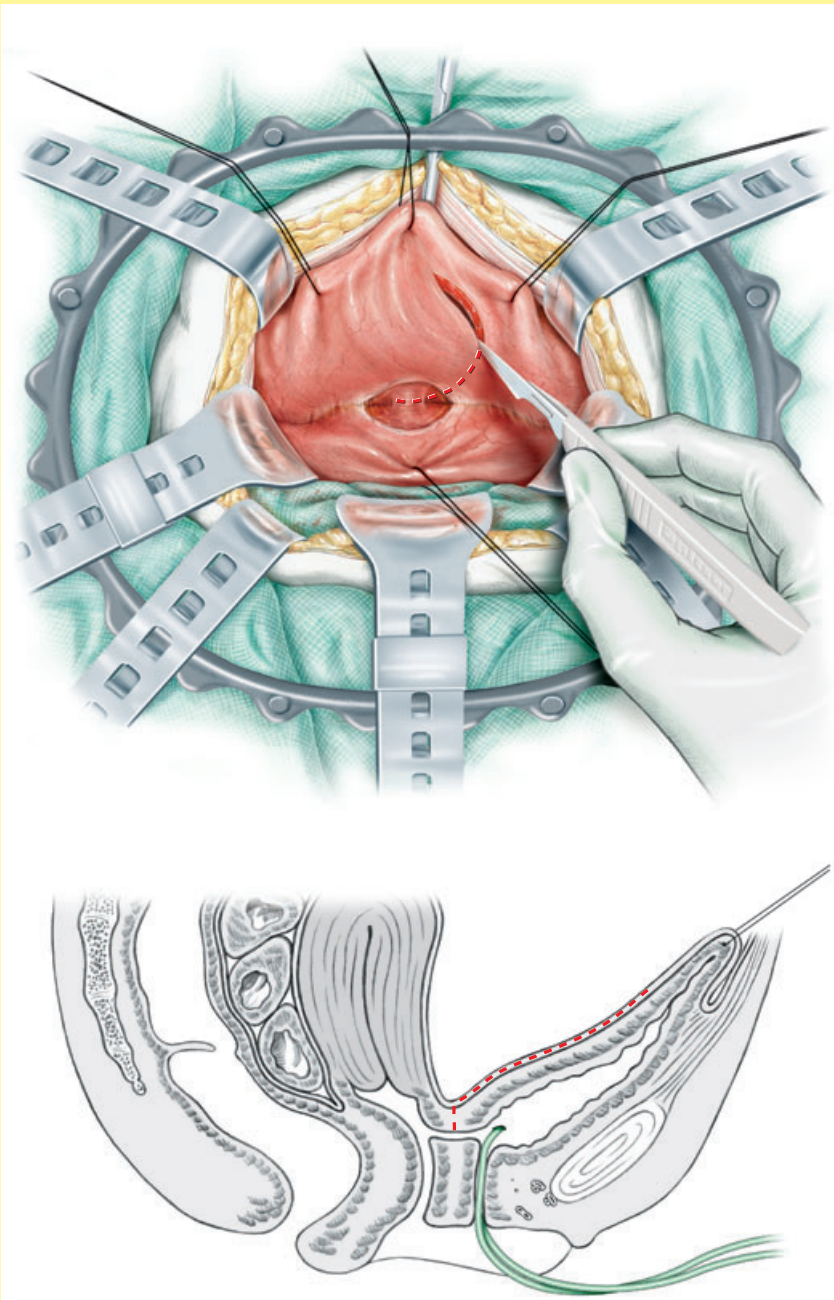
A midline incision can be performed in a cosmetic fashion via a Pfannenstiel skin incision followed by elevation of the skin and subcutaneous tissues up to the umbilicus.

This is important as many of these patients will have already had a Pfannenstiel incision at the time of a prior hysterectomy.

Very occasionally an additional short epigastric skin incision enables an upward extension of the midline incision to provide access for mobilisation of the omental pedicle.

Figure 9

The suprapubic cross incision is retracted with an abdominal ring retractor. The bladder and the vaginal vault are elevated up into the wound by suspension stay-sutures retained over the margin of the ring retractor. The elevated bladder is opened by a laterally curved vertical incision to facilitate its eventual closure. The bladder incision is extended down into the fistula itself (dotted line) and its lateral margins are retracted by elevating stay-sutures to expose the bladder base widely.



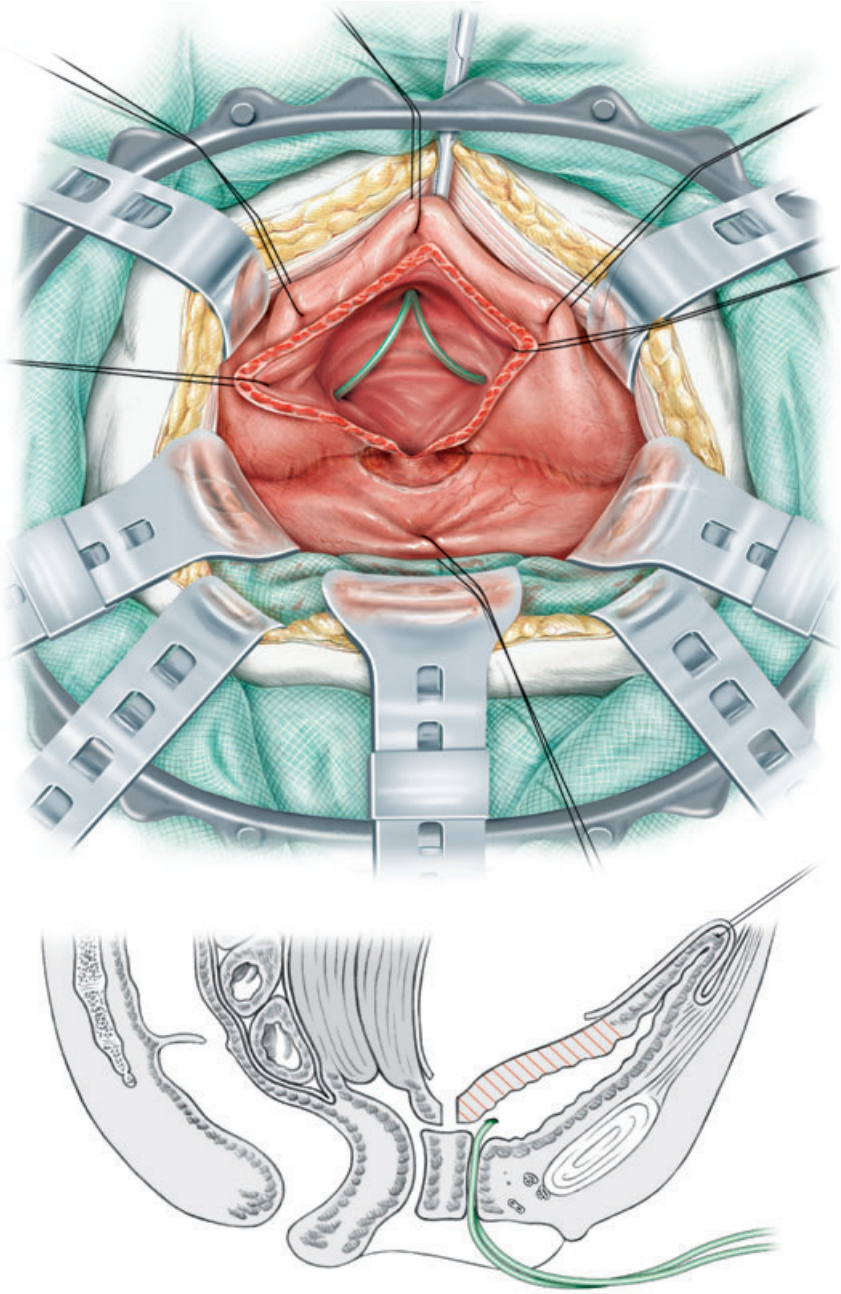
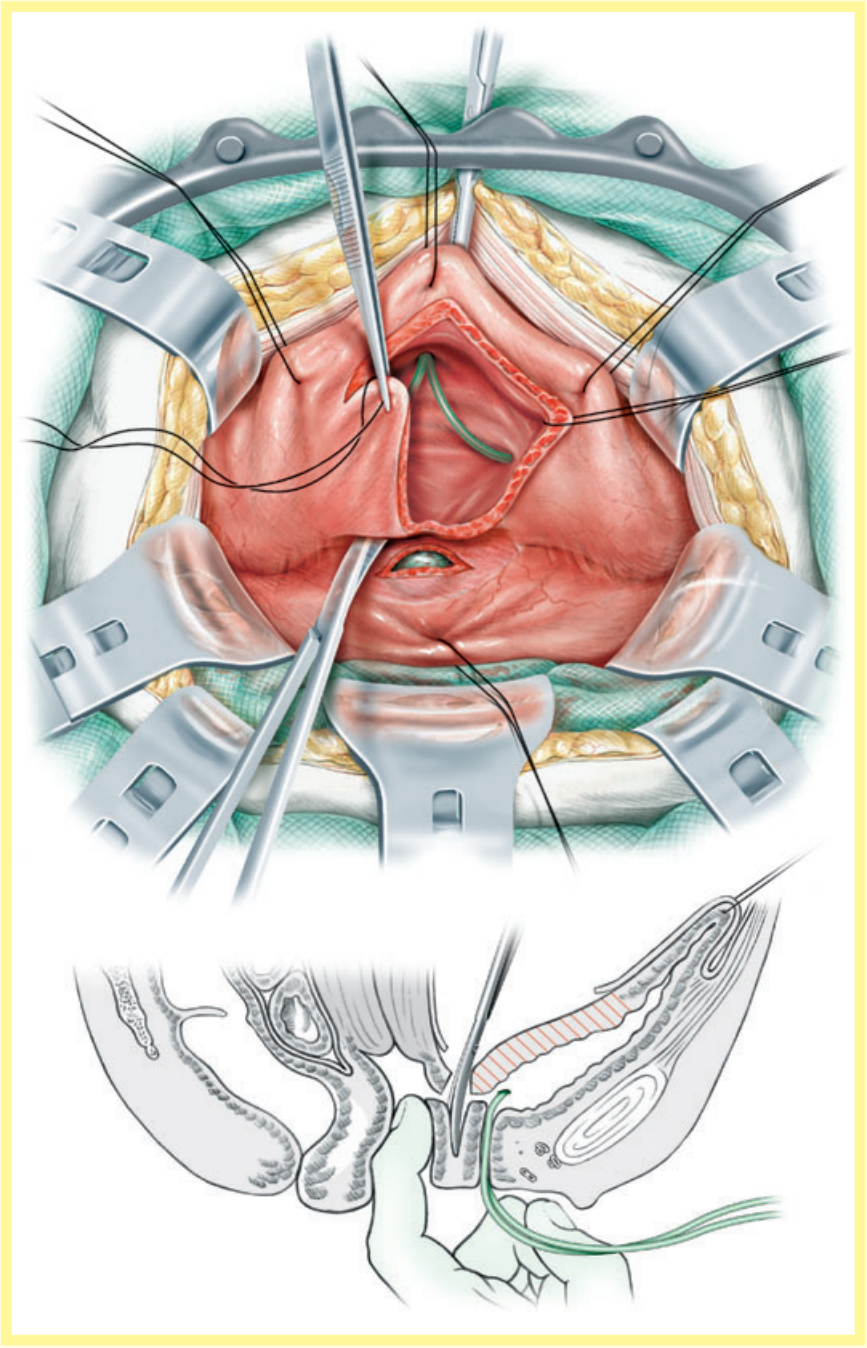


Figure 10

The ureteric orifices are identified; ureteric catheters are passed up to the kidney on either side and the distal ends exteriorised through the urethra into the sterile perineal-approach access of the PAPA position. These catheters can be passed endoscopically during the preliminary examination, but they are equally easy to pass during the operation. When the bladder is open and the ureteric orifices are obscured by inflammatory changes on the bladder base, they are more easily identified by observing the almost immediate efflux of clear urine generated by the intravenous injection of a diuretic, rather than by waiting for the relatively delayed excretion of an intravenously administered coloured dye such as indigo carmine.

Figure 11

The separation of the fused layers of the bladder and the vagina at the margin of the fistula is greatly facilitated by scissor-tip dissection guided by the tip of the surgeon's finger in the vagina. Even when the adhesion is dense and extensive it is remarkably easy to define it by this sharp scissor-tip cutting at a level ≈3 mm from the fingertip, the thickness of the vaginal wall. This is simply estimated by finger tip sensation until the natural intervening tissue plane opens up.



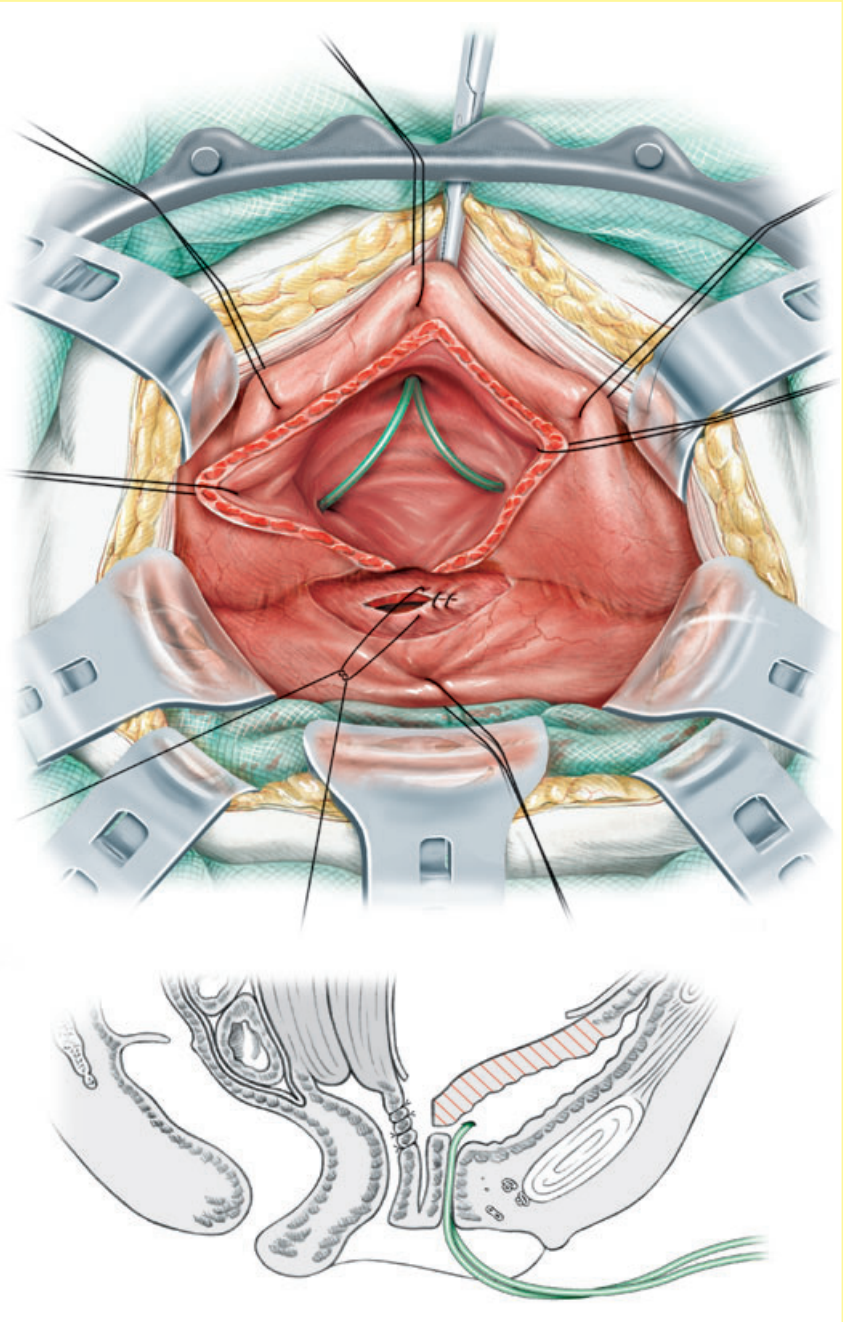
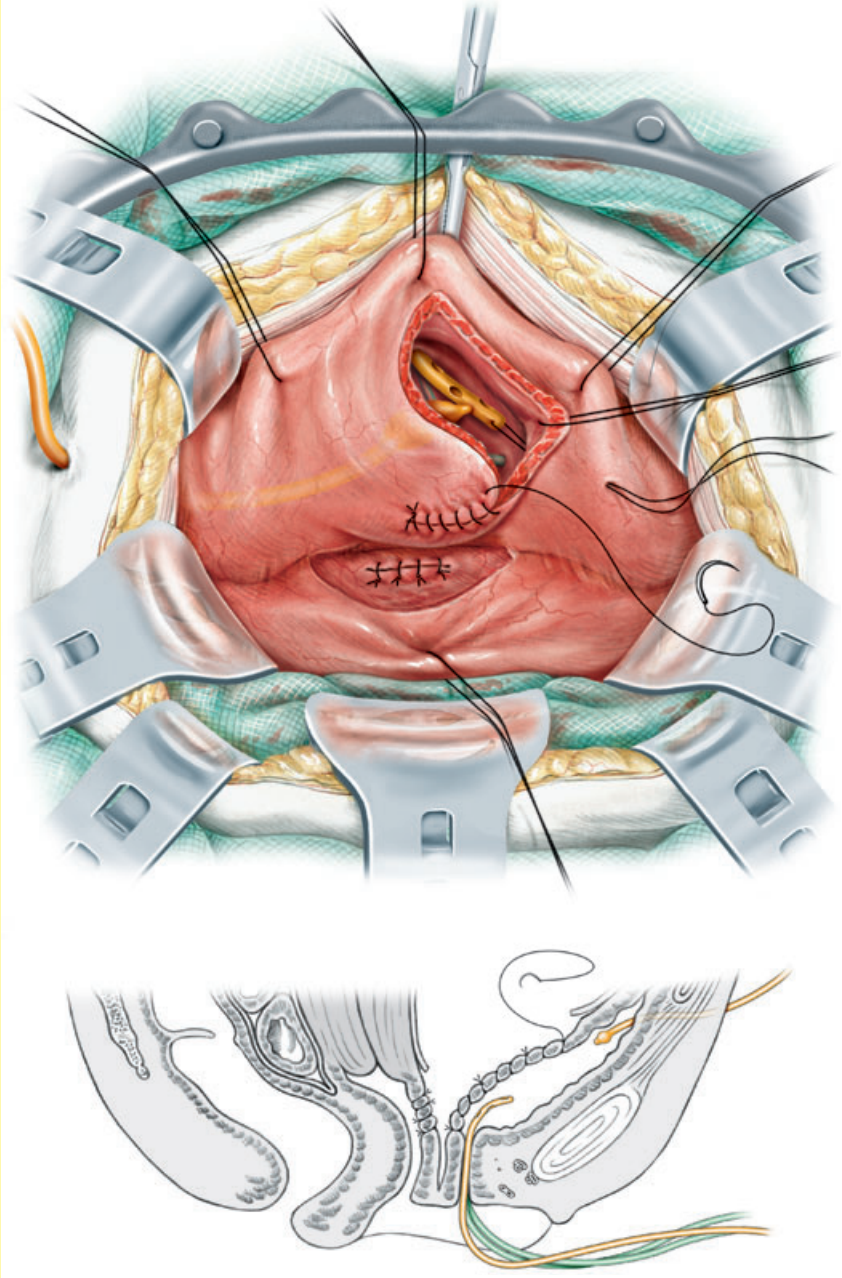


Figure 12

The margins of the vaginal opening of the fistula are excised and it is closed by interrupted short runs of 3/0 PGA sutures.

Figure 13

Both a suprapubic catheter and a urethral catheter are inserted. The curved incision in the bladder is easily closed by simple rotation of its inherent flap using interrupted runs of 3/0 PGA sutures.



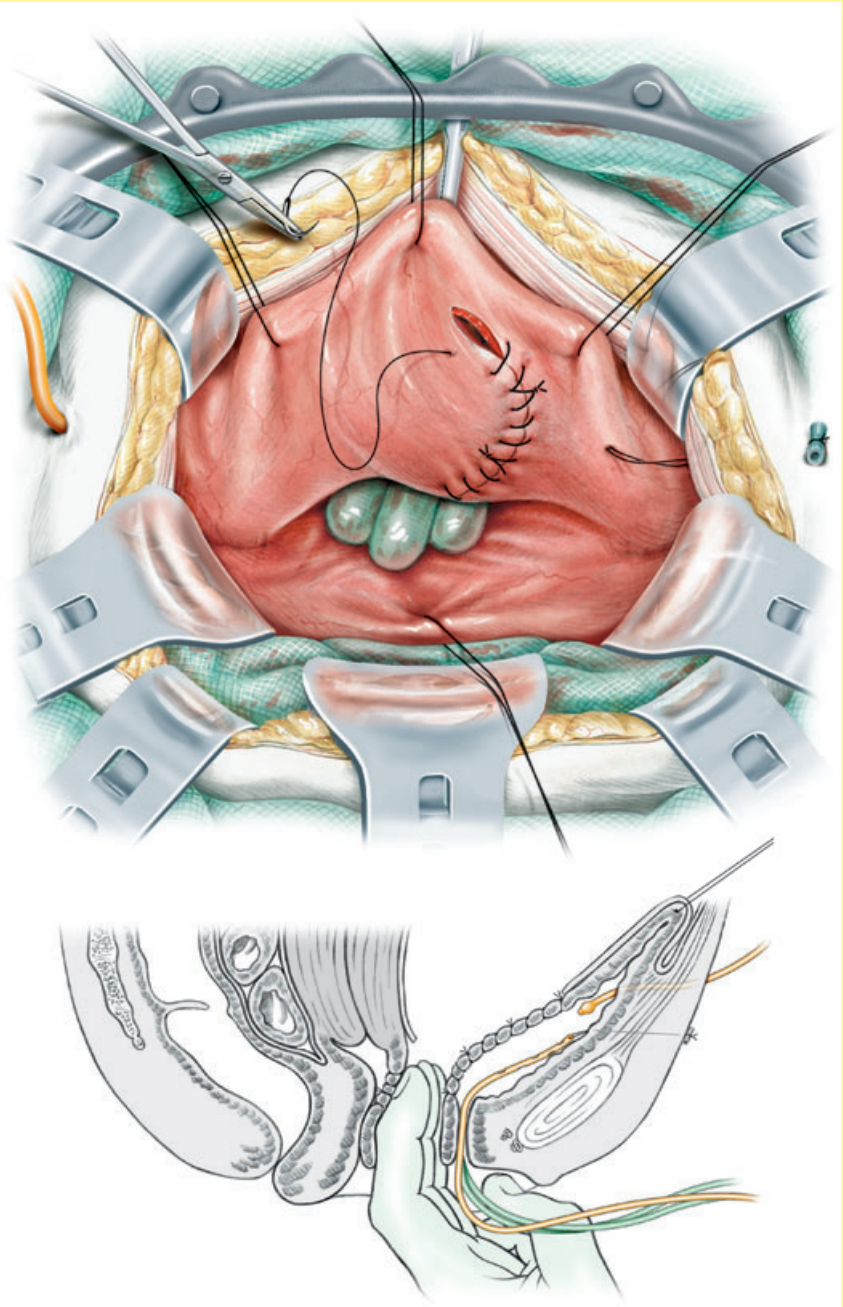
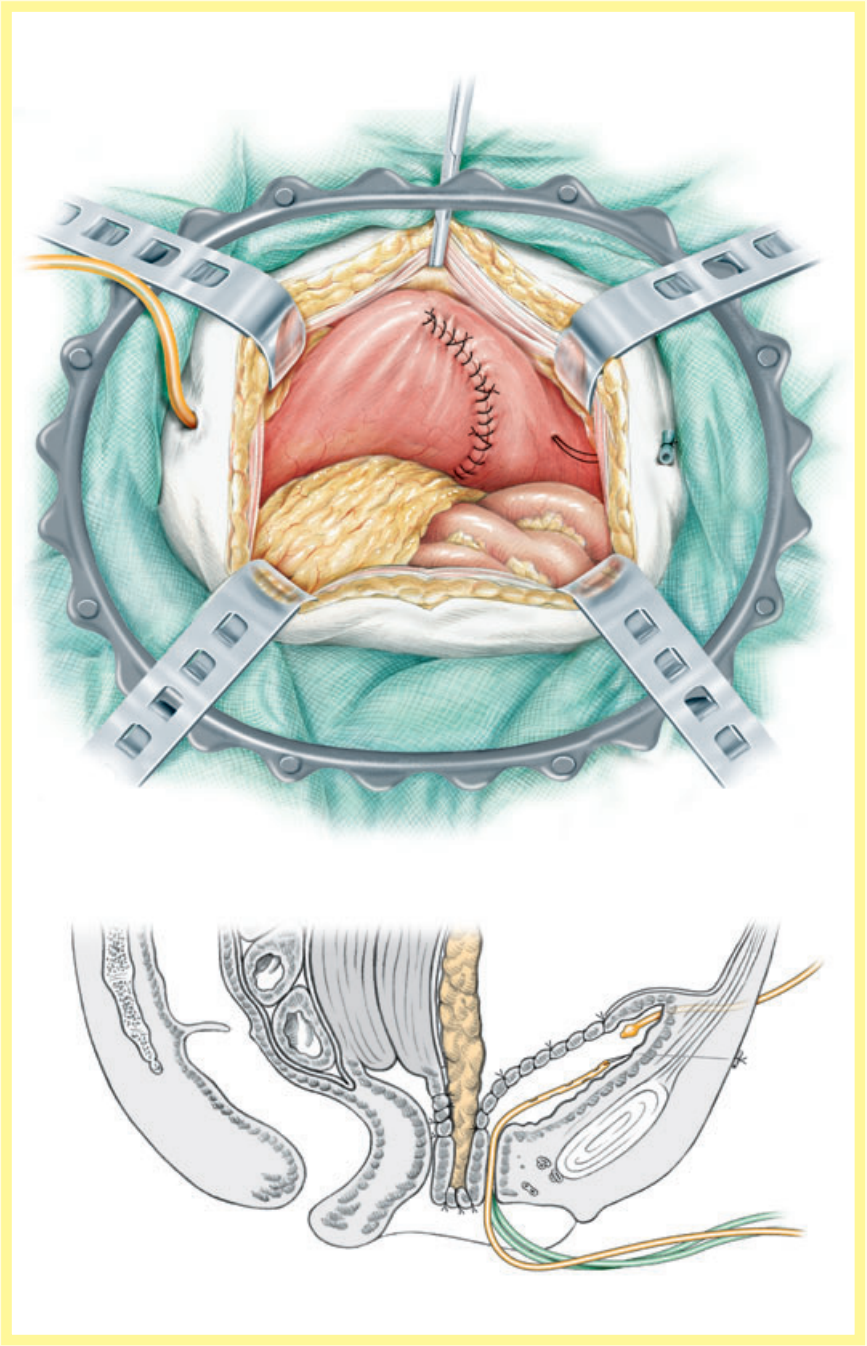


Figure 14

The space for omental interposition support of the suture line can be created either by simple lateral development of the space between the bladder base closure and the vaginal closure from above, or by the synchronous development of an abdomino-perineal tunnel, ≈5–8 cm wide that opens distally at the margin of the introitus behind the urethral meatus. In most cases it is not necessary to create a full abdomino-perineal tunnel of this sort.

Figure 15

The mobilised omentum is introduced into the interpositional space. An abdominal omental interposition is anchored at the upper margin of the interposition space, an abdomino-perineal tunnel interposition is fixed by including the distal margin of the apron with the sutures closing the introital incision at its lower end.



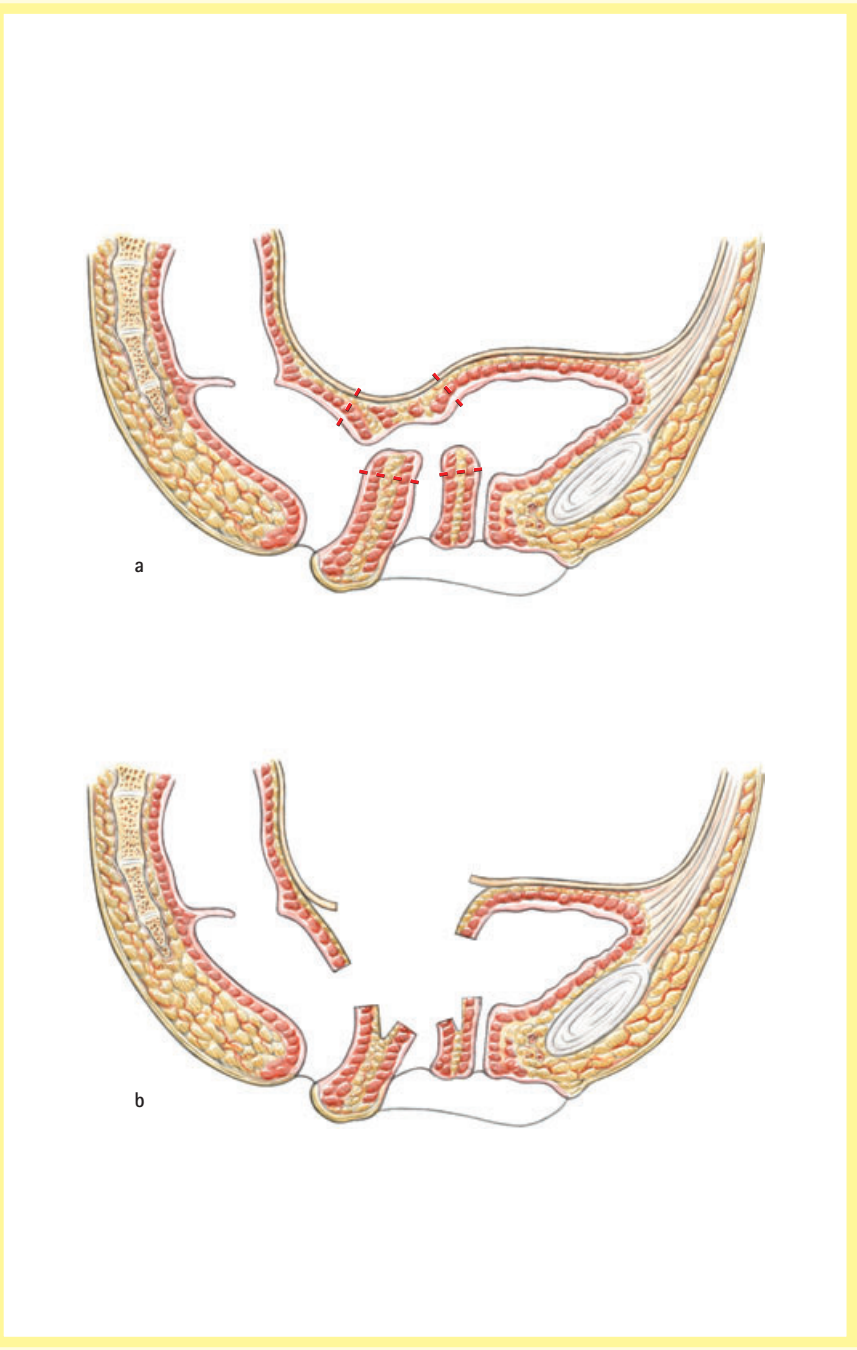


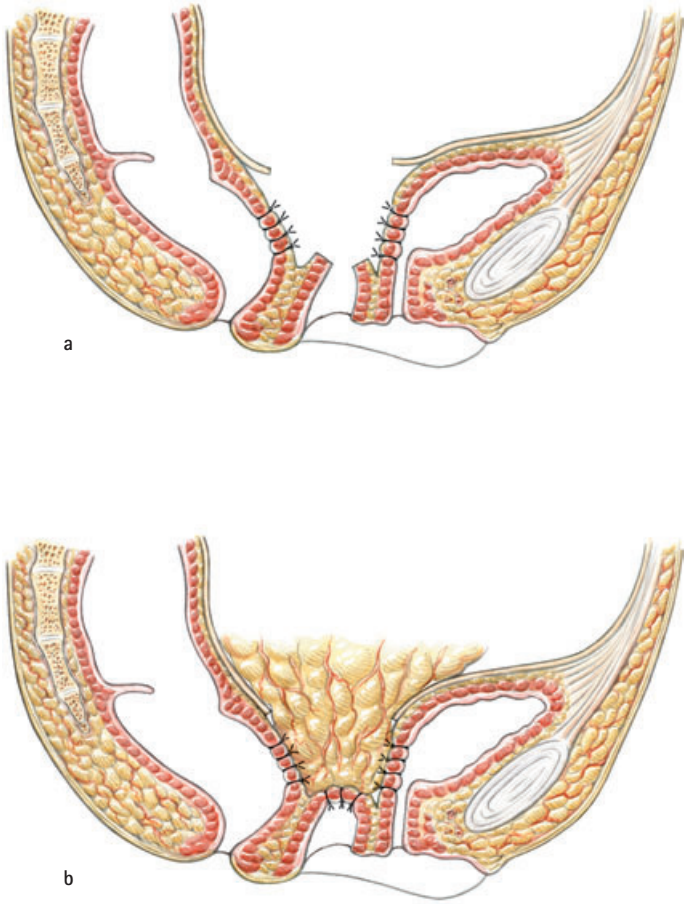
Figure 16

Complex vesico-vagino rectal fistula.

With the patient in the perineo-abdominal progression position the fistula is opened from above, separating the rectum from the back of the bladder. The stenotic vault of an irradiated vagina is excised. After its separation from the rectal wall posteriorly and the vesico-urethral wall anteriorly, the vaginal wall is circumcised transvaginally at the upper limit of its preservable viability and calibre.

Figure 17

Both a suprapubic and urethral catheter are positioned. The rectal and bladder walls are closed. The omental apron is mobilised to fill the sizeable gap between the bladder and the rectum, and its distal margin is included in the vaginal closure sutures. If a bowel-substitution vaginoplasty is indicated it can be done either as an immediate or a deferred procedure.



SURGICAL STEPS

BASIC PRINCIPLES

Absorbable suture materials should be used; interrupted sutures have been established to ensure the best possible vascularization of the tissue between the tissue 'bites' but the advantage accruing from this can be compromised by inflammatory reaction at the site of knots, and a rational comprise is the use of interrupted short runs. The routine use of effective prophylactic postoperative antibiotic cover is important. Adequate postoperative drainage of the bladder via both a urethral and a suprapubic catheter is recommended, as if one of these blocks the other would hopefully be patent, thereby protecting the bladder repair. This should be maintained after surgery until it has served its intended function; this depends upon the surgeon's judgement. As a general rule, if there is any doubt it is usually better to maintain catheter drainage a little longer rather than removing it too early, based on the principle of 'there should be no such thing as brave surgeons, just brave patients'.

TISSUE-INTERPOSITION SUPPORT

The principles of the layered closure of a fistula are well established. The adjuvant use of an additional supporting tissue is a generally advisable routine after a layered closure, whenever this is easily available. However, when the healing potential of the tissue around a fistula is compromised for any reason (e.g. diabetes, infection, infestation, the failure of previous repairs or irradiation) the reliability of a simple layered closure procedure diminishes and the failure rate rapidly increases unless a definitive well-vascularized transposition graft is interposed.

FLAPS OF LOCAL PERITONEUM

The transposition of a flap of pelvic peritoneum was described more than 100 years ago; this is sometimes useful as a simple adjuvant support of the layered closure of a 'simple' fistula, but its vascularization is not particularly good and it is quite inadequate when positive support is required as a result of significant local pathology that is likely to compromise healing (apart from it being itself commonly compromised by this local tissue abnormality).

PEDICLED FLAPS OF SKELETAL MUSCLE

Skeletal muscle has some inherent limitations as a supporting tissue: (i) Its 'resting' vascularization is minimal; this is only maximally augmented during muscular exercise. (ii) It is relatively poorly adapted to resist infection, thus it can disintegrate when repositioned into the severely infected surroundings of some complex fistulae. (iii) It is not especially adapted to resolve inflammation, so that it can contribute little to the local tissue healing when this is severely impaired. (iv) Inactivity of a muscle eventually results in disuse atrophy and it is largely replaced by fibrous tissue unless it is regularly exercised. However, a muscle flap that is adequately vascularized is most useful when the reconstructive requirement is a sizeable bulk of viable interposition tissue in a situation that is not grossly infected.

THE MARTIUS LABIAL ROTATION FLAP

A Martius flap provides useful vagino-urethral interposition support after a vaginal-approach layered closure of a fistula, and it was originally developed for this purpose. Its particular advantage is that it is locally available during a perineal approach with no synchronous abdominal approach. It requires careful mobilisation and redeployment [1].

It is a simple fat pad, which provides a thin, but reasonably well-vascularized tissue bulk. It has no special healing qualities, so it is by no means comparable to the omentum.

OMENTAL SUPPORT

The omentum is unique, as it is the only body tissue that is specifically developed for resolving inflammation. It has excellent vascularization and this must be preserved during its mobilisation; it is also capable of rapid augmentation in response to inflammation. It has an abundant lymphatic drainage which is so good that it can rapidly re-absorb macromolecular inflammatory exudates, the accumulation of which can otherwise create purulent collections that compromise the healing of a repair. Unlike the retroperitoneal and retropubic fat, the omentum regains its suppleness after an inflammatory response has settled, so it provides a unique mobile support that is fundamentally important to the reliable success of many functional reconstructions.

Appropriately used, the omentum can almost guarantee the closure of the most complex VVF. It is the basis of 'salvage surgical procedures' after irradiation, and the success of these is often entirely dependent on the availability, and the meticulous transposition, of the vascular pedicle of the omental apron.

TRANSABDOMINAL FISTULA REPAIR

Technically, in terms of access and versatility, the supravesical abdominal approach provides superior access for the repair of many VVF; it is suitable for all such fistulae in all locations, down to and including the bladder neck and the proximal urethra. However, a vaginal-approach repair is a less extensive surgical procedure so this is naturally preferable when the circumstances are appropriate for it.

THE INCISION

A midline abdominal wall incision is essential to provide appropriate access for mobilising the full length of the vascular pedicle of the omentum from the stomach; this is necessary in about a third of cases in which omental interposition is required for the reliable repair of a complex VVF. The need for such an extensive mobilisation of the omentum cannot be predicted before surgery. A common clinical problem is that many of the patients who require repair of a VVF have just had hysterectomy using a Pfannenstiel incision approach, with a horizontal skin incision. An additional vertical midline skin incision for an omental fistula repair results in a scar that is a lasting reminder of the complication, and is best avoided.

THE 'SUPRA-PUBIC CROSS' INCISION

The 'supra-pubic cross' incision was specifically developed to enable the great majority of fistula repairs after a Pfannenstiel-approach hysterectomy to be completed through the original skin incision. After a slight lateral extension of this horizontal skin incision, the upper and lower skin and subcutaneous tissue flaps are separated from the rectus fascia, upwards and downwards, sufficiently to enable a midline abdominal wall incision to be made up to the level of the umbilicus and leaving the original horizontal Pfannenstiel rectus sheath closure intact. Suture reinforcement of the margins of

the previous horizontal sheath closure transected by the midline incision is generally advisable.

In the event that an upper abdominal access is required to mobilise the vascular pedicle of a short apron omentum (30–40% of cases) this can be achieved by a short additional midline epigastric skin incision and a supra-umbilical extension of the midline incision in the abdominal wall, which is in continuity under the wide skin bridge between these incisions. Thus an additional mid-line skin incision is avoided in most patients who require a postoperative fistula repair procedure, without compromising the option of an extension for full mobilisation of the omental pedicle when this is necessary to ensure success.

INCREASING THE MIDLINE INCISIONAL ACCESS TO THE RETROPUBIC SPACE

A distal pre-pubic extension of the midline incision into the pre-pubic aponeurosis, and its reflection off the surface of the pubic bone, results in a remarkably effective increase in exposure of the retropubic space [1]. The access to the lower recesses of the retropubic space can be further increased by a partial resection of the pubic bone, but this additional exposure is rarely necessary in the female.

THE PROCEDURE FOR TRANSABDOMINAL VVF REPAIR

The transperitoneal supravesical approach provides the best exposure for the abdominal repair of a VVF. The traditional anterior transvesical approach for closing a VVF, originally described by Trendelenburg, provides a very limited exposure through which only a simple layered closure of a fistula is possible; this is no longer advocated for this purpose. To take advantage of the special features of this approach a PAPA position is essential to provide synchronous perineal access.

The patient is placed on the operating table in the perineo-abdominal position with an appropriate degree of head-down tilt to reduce venous pressure bleeding in the pelvis.

A mid-line abdominal incision is essential to enable the full length of the right gastro-epiploic pedicle of the omentum to be mobilised to support the fistula repair, if needed. For a simple fistula after hysterectomy, the initial lower mid-line incision may be made by the lower element of the suprapubic cross incision so that, when omental interposition support is required, it can usually be achieved using a simple horizontal Pfannenstiel-type skin incision with no need for an epigastric extension.

TIPS AND TRICKS FOR THE SUPRAVESICAL REPAIR OF VVF

(1) A guiding finger in the vagina greatly facilitates the separation of the back of the bladder and the urethra from the vaginal wall at the margins of the fistula.

(2) Bleeding deep in the pelvis is often controllable by simple vaginal finger-pressure while definitive haemostasis is being secured.

(3) The exposure of the bladder base, the lateral paravesical space and the retrovesical/vaginal plane enables the ureter to be mobilised and re-implanted into the bladder by a reflux-preventing procedure when this is indicated, most commonly as a result of its involvement in the margin of the fistula.

(4) When a vesical fistula extends down to or through the bladder neck, a definitive synchronous perineo-abdominal reconstruction of the sphincter mechanism can be achieved using a pre-vaginal abdomino-perineal tunnel. The separation of the urethra from the vagina is continued down to a peri-introital incision to create a pre-vaginal abdomino-perineal tunnel, 5–8 cm wide (three finger-breadths), to accept an effective bulk of omentum.

(5) Omentum can be interposed using the supravesical abdominal approach alone, creating an intervening space for it by a downward and lateral extension of the separation of the bladder base and the urethra from the anterior vaginal wall of the vagina. The failure of an omental interposition repair should be a very unusual event; it is important to avoid three potential surgical shortcomings: (i) Inadequate size of the abdomino-perineal interposition tunnel, because this results in an insufficiency of the lateral tissue overlap. The omentum should not be used as a 'simple plug'. (ii) Failure to mobilise a sufficient bulk of omentum to fill the appropriately sized inter-position tunnel. (iii) Impairment of the vascularity of the mobilised omentum resulting from an inappropriate mobilisation procedure or from poor vascular surgical technique.

USE OF A LATERALLY CURVED INCISION IN THE POSTERIOR WALL OF THE BLADDER

If a vertical mid-line incision in the bladder is used to achieve a supravesical approach to a VVF it can be difficult, and sometimes impossible, to achieve side-to-side closure when the bladder wall and the lateral paravesical pelvic tissues are indurated (as they often are as a result of previous surgery, inflammatory fibrosis and especially after irradiation). It is generally advisable to curve the incision in the posterior wall of the bladder laterally because this creates an eccentric laterally based flap of the bladder wall that enables closure to be achieved by its simple rotation.

THE OPERATIVE PROCEDURE FOR VESICO-VAGINO-RECTAL FISTULA REPAIR

The procedure for a vesico-vagino-rectal fistula closure is an extended development of the abdomino-perineal closure of a complex VVF by omental interposition. A simple loop-ileostomy preliminary bowel diversion is preferred to a traditional loop colostomy, because it is easier for the surgeon to make, for the patient to manage and for the surgeon to close.

POSTOPERATIVE CARE

The patients have an occlusive wound dressing applied and are left with suprapubic and urethral catheters. All patients are continued on full antibiotic prophylaxis for 10 days, when a cystogram is taken, and provided that there is no leak from the bladder, the urethral catheter is removed and the suprapubic catheter clamped. Provided the patient is able to void without significant problems the suprapubic catheter is then removed. They are advised to avoid excessive activity for 4–6 weeks and then to gradually mobilise towards normal by 2–3 months.

FROM SURGEON TO SURGEON

We have tried to include helpful tips wherever possible as we have described these

techniques. In our experience, with a combination of self-retracting instruments, adequate exposure and good lighting, it is possible to close most VVF. Basic surgical principles of excising avascular tissue, avoiding 'dead space', creating tension-free anastomoses and draining urine, and where appropriate diverting the urinary stream, all combine to ensure a successful outcome.

The most surgically challenging situation; the so-called 'frozen pelvis'; this occasionally results from pelvic irradiation and is associated with an extensive fibrosis of the interstitial tissue that largely fills the pelvis. This is usually associated with extensive irradiation changes in the bladder, the ureters and the rectum. Sometimes after the treatment of a carcinoma of the cervix, there is a fistulating radio-necrotic cavity in the vaginal vault area. Traditionally, such a 'frozen pelvis' was treated by a double abdominal-surface urostomy and colostomy diversion, but this does not relieve the unfortunate patient of an offensive purulent discharge from a radio-necrotic cavity, the avascular walls of which are incapable of generating the proliferative granulation tissue required for its occlusive healing. The surgical resolution of a 'frozen pelvis' used to be widely regarded as an inoperable situation; however, after a subtotal exenteration that leaves the potentially salvageable elements *in situ* (the bladder base, the lower vagina and the anorectal mechanism) a functional reconstruction of some or all of these is often possible, especially if a sufficiency of transposable omentum is available, combined if necessary with a vaginoplasty to help fill 'dead space'.

In any patients with a fistula it is advisable to obtain support from a colleague with expertise in this area, as the closure of apparently simple VVF should be regarded as a specialist procedure. Often the surgeon who creates a fistula is not the one who is best qualified to repair it, although the temptation to attempt this may be great. From the patient's, the medical and the medicolegal perspectives, it is important that a postoperative fistula is repaired both expeditiously and successfully at the first attempt. The difficulty of fistula repair can escalate when the situation becomes complex but this should rarely be the result of a previous surgical failure.

REFERENCE

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Abbreviations: **VVF**, vesico-vaginal fistula; **PAPA**, perineo-abdominal approach.