

THE TRANSPERITONEAL, TRANSVESICAL REPAIR OF VESICOVAGINAL FISTULA*

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My article, *The Transperitoneal, Transvesical Repair of the Vesicovaginal Fistula*, published in the October 1950 number of the *American Journal of Surgery*, was a brain child of desperation, born in 1946 of adversity. Today, my purpose will be to present to you this transperitoneal, transvesical technic for the repair of the vesicovaginal fistula following total hysterectomy.

My first patient was an obese Polish peasant woman who spoke only her mother tongue. She had undergone a total abdominal hysterectomy with a resulting vesicovaginal fistula. In due and proper time, she was operated on again for the correction of the fistula by her original gynecologist and a urologist, operating simultaneously by vaginal and transvesical routes without success. When I examined the patient she was totally incontinent, and I could insert my index finger through the vaginal opening of the fistula into

* Paper Presented at 2nd Congress of Urological Association of South Africa (M.A.S.A.), Cape Town, July 1958.

the bladder with ease. My suggestion that a ureterosigmoid anastomosis be performed was rejected promptly and in no uncertain terms through the interpreter. I was told to attempt another repair to achieve a normal functioning bladder, and the closing remark by the patient, 'Cure or kill', resulted in my brain child which I am presenting to you today.

This procedure should be reserved for those cases which have been unsuccessfully repaired by the vaginal approach. Under these conditions the fistula calls for maximum exposure under direct vision, with minimal tension of the tissues used in the repair of the defect. The dictum, 'If you can see it you can do it', is basic to the management of the complicated vesicovaginal fistula.

Panhysterectomy, which is advocated for the prophylaxis of carcinoma in the cervical stump, confronts the surgeon with the possible risk of a complicating vesicovaginal fistula. Such fistulae, in contrast to those following obstetric procedures, are usually unsuitable for repair through the vagina.

Their location above the interureteric ridge and the absence of the cervix for use as a tractor make vaginal accessibility very difficult. The abdominal approach is more suitable for repair of these fistulae and is usually more successful.

It is interesting to note that the decline in incidence of vesicovaginal fistulae, because of improved obstetrics, has been balanced by an increased occurrence after radical gynecological surgery.

In evaluating the accepted methods of suprapubic repairs, the transperitoneal, transvesical route has the following advantages: First, better exposure is obtained, because the bladder is opened wide in the mid-line since there are no tissue folds to obscure the vision. Secondly, operative procedures through the peritoneal cavity allow much greater freedom of movement than through the anterior wall of the bladder. The bladder can be dissected more easily from the vagina from this perspective, and the epithelized fistulous tract can be excised under direct vision. Finally, as the bladder is open the ureters can be visualized, and catheterized if cystoscopic catheterization did not precede surgery.

THE OPERATION

Preparation. After a complete diagnostic urological work-up, the patient's chemical, nutritional and hematological defects are corrected. Multi-vitamins in large quantities, estrogens and broad-spectrum antibiotics are given in addition to the usual pre-operative bowel preparation.

After the patient is anesthetized, cystoscopy is performed and No. 5 ureteral catheters are inserted and left *in situ*. The vagina is prepared chemically and carefully packed with sterile gauze to gently distend the entire vaginal vault. The end of the packing is allowed to dangle over the patient's thigh; this will allow an outside assistant to remove the packing easily upon demand during the course of the operation. A Foley bag catheter is inserted *per urethra* and

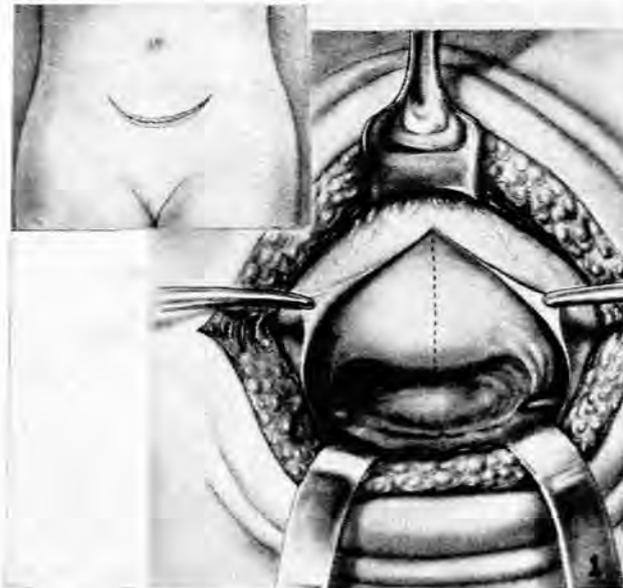


Fig. 1. Dotted line indicating line of incision of posterior bladder wall after intraperitoneal mobilization of bladder. Inset: Pfannensteil incision of abdomen.

attached to an irrigating container of sterile methylene-blue solution.

Operation Technic

Fig. 1. An 8-inch Pfannensteil incision is made 1 finger-breadth above the pubic symphysis and carried down to the fascia. The skin and the subcutaneous tissues are dissected superiorly. The anterior rectus sheath is incised transversely, and the muscles are separated and retracted in the mid-line. The peritoneum is divided longitudinally under the usual precautions, and a Balfour self-retaining retractor is inserted. The intestinal contents are packed into the upper abdomen with laparotomy pads.

Fig. 2. The bladder is now identified and opened at the superior attachment of the peritoneum. The incision is carried downward through all coats of the bladder, including

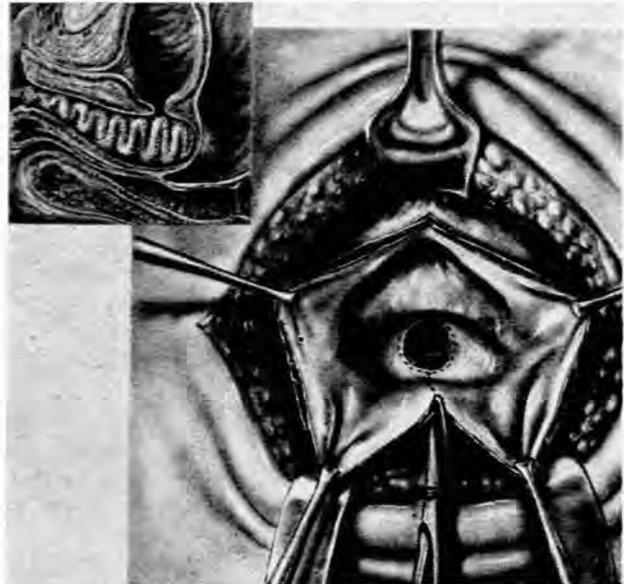


Fig. 2. Vagina packed with gauze to elevate floor of bladder. Bladder opened; incision being carried down to fistula. Inset: Sagittal view.

the peritoneum. The cut edges of the bladder are grasped with Allis clamps and held aside. This allows visualization of the fistula and ureteral orifices within its cavity. Under such vision, the incision is carried down to the fistula and the bladder is now pulled toward the pubic symphysis.

Fig. 3. Thus, if the surgeon works from within the peritoneal cavity he may separate the bladder from the vagina at the site of the fistula by merely opening the Metzenbaum scissors in the septum between these organs. At this point, the lining of the fistulous tract is trimmed off and the edges of the vagina are grasped with Allis clamps. The bladder and vagina are further separated by sharp dissection in order to obtain laxity of the tissues for closure. At this point, extreme caution should be taken not to injure the ureters. It is imperative at this time, if cystoscopic catheterization has not been employed, to pass ureteral catheters before any extensive dissection is performed. An outside assistant is then requested to remove the vaginal pack.

Fig. 4. The edges of the vagina are approximated with interrupted sutures of No. 00 chromic atraumatic catgut on

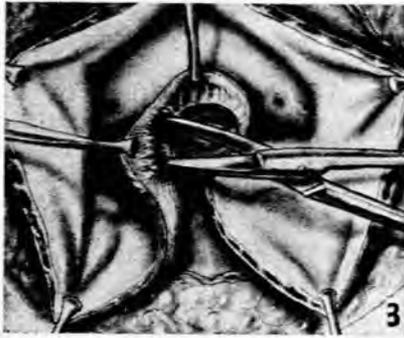


Fig. 3. Epithelized fistulous tract being completely excised; bladder musculature dissected from vagina.

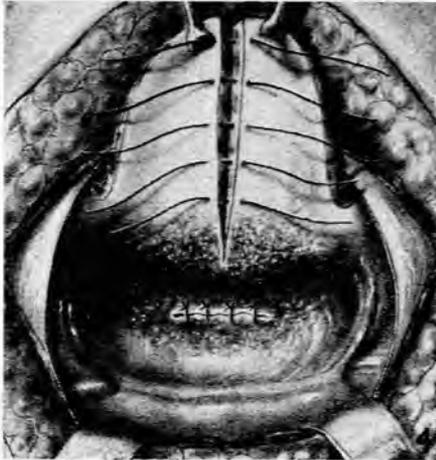


Fig. 4. Vaginal opening closed with interrupted atraumatic chromic sutures in transverse direction; bladder muscles sutured in linear direction with interrupted atraumatic catgut.

a No. 6 Martin needle. If it is feasible, this row of sutures should be made at right-angles to the closure of the bladder. This closure is optional, because the question of dead-space infection is eliminated by leaving it open for dependent drainage through the vagina. As the bladder edges are drawn forward and upward, the muscular layer is closed with interrupted sutures of No. 0 chromic catgut inserted from the peritoneal surface. This closure is made from the floor to the mid-portion of the peritoneal surface of the bladder. Then from within the bladder interrupted sutures of No. 00 atraumatic plain catgut are used to draw the urothelium together gently over the previous defect.

Fig. 5. Following the closure of the bladder musculature from the outside, the peritoneal coat of the bladder is next imbricated with a continuous suture of No. 00 chromic catgut. Irrigation of urethral catheter is then performed by the outside assistant to check for leaks of the methylene-blue irrigating solution. The laparotomy pads are removed, the intestinal contents are replaced, and the peritoneum is closed with or without drainage, according to the surgeon's judgement, by using a running No. 00 atraumatic chromic catgut suture.

Fig. 6. The extraperitoneal portion of the dome of the bladder is incised and a No. 36 Pezzer tube is inserted. The opening is closed tightly about the tube with interrupted

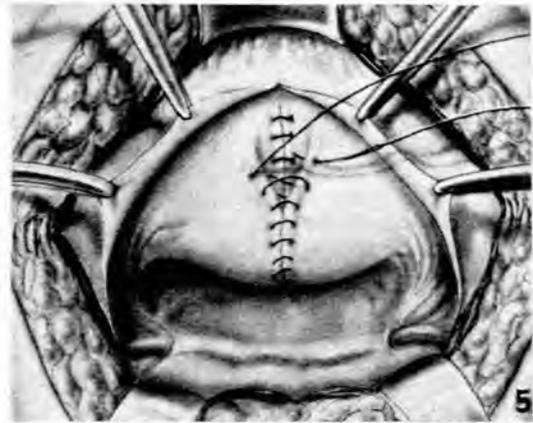


Fig. 5. Imbrication suture line of peritoneal coat of bladder with continuous atraumatic catgut.

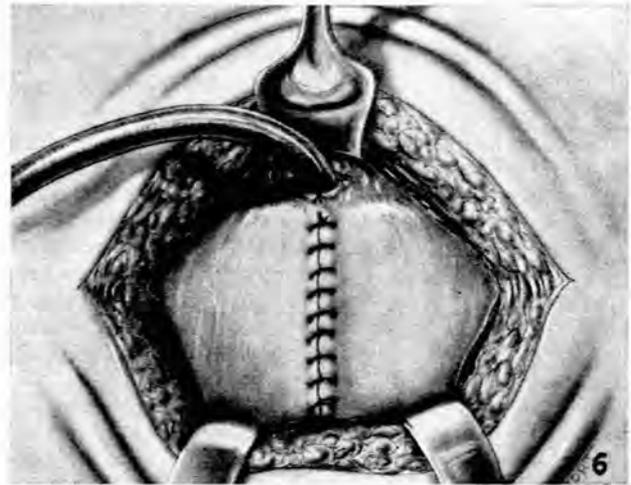


Fig. 6. Peritoneum closed; suprapubic drain inserted into extraperitoneal portion of bladder.

No. 0 chromic catgut. The wound is closed in layers. Plain catgut is used for muscle and chromic is employed for fascia. Interrupted sutures of plain gut are used subcutaneously, and the skin is approximated with interrupted vertical mattress sutures of black silk. The Pezzer tube is brought out through the center of the wound and a black silk suture is placed through the skin and the tube as an anchor. The urethral catheter again is irrigated with sterile methylene-blue solution to be sure of free flow of fluid through the Pezzer tube.

Post-operative Care

Upon return to bed, the patient is given continuous bladder irrigation with sterile normal saline, which flows through the urethral catheter and out the Pezzer tube. Vital signs are charted at frequent intervals for the first 24 hours. The patient is moved hourly in bed and lies supine. Broad-spectrum antibiotics are continued and demerol is used for post-operative pain. Transfusion and infusions are given to maintain fluid and electrolytic balance. Nothing is given by mouth for the first 24 hours. The tendency to

abdominal distension is anticipated by routine use of prostigmine, Harris drip and, if necessary, naso-gastric suction intubation.

Forty-eight hours after the operation the irrigation is discontinued and both tubes placed on dependent drainage. On the 5th post-operative day the patient is allowed to dangle her legs, and she is gradually mobilized on succeeding days. After 1 week the antibiotics are discontinued or decreased in dosage and the skin sutures are removed. The Pezzer tube is removed 10-14 days after the operation. The urethral catheter, although changed, remains *in situ* until the cystotomy and vaginal wounds are healed. The bladder is filled with saline through the catheter and the cystotomy and vaginal wounds are checked for leaks. If there is no leakage the catheter is removed.

The average stay in the hospital is about 3 weeks.

COMMENTS

I have performed this operation 16 times in cases where vaginal procedures were tried unsuccessfully, or where the fistula was high in the vagina or large. Of these, 15 have been successful in one attempt. One case required a second procedure, which was successful, but the patient developed a left uretero-vaginal fistula, complicated by septic pyonephrosis which required nephrectomy. This was my third case, and before routine cystoscopic ureteral catheterization became mandatory and not elective.

I hope you will never have cause to use this approach. However, if the situation should arise, I am certain that you will find, as I have done, that this technic provides a very satisfactory surgical exposure. It gives adequate and direct vision of the epithelized sinus tract, which must be completely excised if a favourable and permanent result is to be obtained.