SUCCESSFUL REPAIR OF A LARGE VESICO-VAGINAL FISTULA

by

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Urinary fistula is the worst type of an affliction that a woman can suffer from. With incessant dribbling of urine per vaginam, constant wetting of the clothes and the awful stink, she is most miserable and retires into self-pity, solitude and suspicion. Such a misery although uncommon in the West today, is not infrequent in our country. In developed countries, urinary fistula is usually the result of a radical pelvic surgery or therapeutic irradiation; while in this part of the world obstetrical misadventure is still the commonest cause.

The purpose of this communication is to report an unusual case of urinary incontenence and its successful surgical repair. There was an extensive damage to the bladder base, the posterior surface of bladder in the region of ureteric orifices and in the area above it.

Case History

Mrs. S. K. C., a 28 year old housewife, was first seen on 6th June 1968, with continuous dribbling of urine since the last delivery elsewhere, 8 months ago. History revealed that the first three confinements were normal and the present trouble arose during the fourth delivery of twins. Birth of the first baby was spontaneous, but the second had to be delivered by a lower segment caesarean section at the end of a prolonged labour for an impacted, neglected, shoulder presentation. She noticed incontinence of urine on the 8th—postoperative day and had a stormy convalescence. In spite of four deliveries, she had only one living child, eight years old.

Preoperative Assessment

An examination under anaesthesia revealed that almost the whole of the bladder base was deficient, there being actually two large openings in its place separated by a bar of bladder tissue (Figs. 1 and 2). Each opening was about 4 cm. wide and no trace of cervix was seen, probably the whole of it had sloughed away following the last labour. The body of the uterus was felt in the anterior fornix and was smaller than normal in size. Cystoscopy revealed two big rents in the posterior wall of bladder and only a dimple in place of the right ureteric orifice. Usual spurt of urine was situated in the vagina very near the edge of the fistula on the left side. Thus both the ureteric openings were lying in the vagina very near the margins of the fistula.

The right kindney was totally atrophic and the left kidney showed a fair amount of function, as evidenced by the following investigations: (1) Small kidney shadow on the right side and almost normal on the left on a plain X-ray of the abdomen; (2) on intravenous pyelography there was no excretion of the dye on the right side and good excretion of dye on the left side, revealing a mild hydronephrosis and hydroureter on the same side (Fig. 3); (3) No kidney shadow on the right side and a slightly enlarged kidney shadow on left side on a nephrogram (Fig. 4); (4) Very small right renal artery and normal left renal artery on a renal angiogram (Fig. 5). On ascending pyelography, the ureteric catheter could only be passed up to one inch

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distance on right side. Thus it appeared that there was a total obstruction of the right ureter which probably brought about renal atrophy. The left ureter was patent as there was normal excretion of methylene blue within six minutes of intravenous injection. Although patent, the left ureter was slightly kinked in its course as the ureteric catheter could not be passed up very easily.

Interesting Features

Thus, this patient had many interesting features which posed some surgical problems. Firstly, there was not only one, but there were two large gaps in the posterior wall of the bladder, so much so that almost the whole of the base of the bladder along with part of the superior surface were destroyed (Fig. 6). It was too large a gap to be bridged up ordinarily. The fleshy bar of bladder tissue dividing the two openings in the bladder extended from one ureteric orifice to the other. It was difficult to decide whether to sacrifice this tissue or preserve it. If it was excised the side stumps were too near the ureteric orifices and also they were fairly fleshy and therefore would probably cause undue haemorrhage. Further, the union of the two rents resulting thereby would surely be too large for closure by any means. Secondly, there was only one functioning kidney which was also affected with mild changes of hydronephrosis. That the ureteric orifice of this kidney was very near the posterior edge of the fistula and any damage to that area or to the ureter would be disastrous. Thirdly, that she was a young person and therefore it was pertinent to keep the patency of the vagina and if possible also preserve her childbearing function, as she had only one living child.

Approach to her problems

As the surviving kidney showed fairly good functoin it was decided to give her at least one chance of surgical repair, realising fully the risk involved. The next problem was how best to tackle her? Before undertaking any repair procedure for the fistula, it was decided to remove the uterus for the following reasons: (a) apart from the fistula, childbearing would not be easy in this patient as the whole of cervix had sloughed out, she was still not menstruating and the communication between the uterine canal and the vagina was not obvious; (b) even if she could conceive, the subsequent childbearing would jeopardize the success of a difficult repair, and (c) while repairing this fistula, if we felt at any stage that the primary closure was impossible then a colpocleisis as a method of dealing with incurable cases could be attempted as a last resort. The removal of uterus is a prerequisite for such an operation.

Operative Management

The patient was taken up for surgical repair on 17-7-1968 under spinal anaesthesia. On opening the abdomen the bladder was found adherent to uterus and was separated by sharp dissection. In so doing, one soon entered the anterior opening of the fistula. The uterus was removed and the peritoneum of pouch of Douglas was stitched to the peritoneum over the bladder. Abdomnial wound was covered with moist packs and the patient was put in the lithotomy position. The labia minora were stitched away and a Sims' speculum exposed the fistula. High Trendelenberg position facilitated the exposure of the fistula and working at high depths. The fistula was closed by conventional flap-splitting technique of Mackenrodt. As the tissue loss was too great, one wanted to preserve as much tissue as possible and therefore the use of traction forceps on the edges were minimised as much as possible. No tissue was excised at any stage. A circular incision was taken all around the fistula 2 mm. away from its margins with a tonsil knife (as shown in Fig. 7) except that near the left ureteric orifice it was taken as far as 5 to 6 mm. away from the edges. The bar of bladder tissue extending between the two ureteric orifices was preserved. It was incised all along its length horizontally. The vaginal mucosa was carefully dissected away for a varying distance all around till it was felt that there would be no tension on the suture line. The margins of the fistula were not pared for two reasons- one, to avoid troublesome oozing not only during the operation but also during the postoperative period and secondly for conserving as much tissue as possible. Since there was already a very large gap, one did

not wish to enlarge it further by cutting away. The anterior rent was bridged by suturing the anterior edge of the fistula to the anterior margin of the bladder tissue on the horizontal bar with 00 chromic catgut. The sutures were passed through muscularis of bladder and avoiding the mucosa as far as possible (Fig. 8). Similarly, the posterior gap was bridged up by suturing the posterior edge of the fistula to the posterior margin of the incision on the fleshy bar. However, the closure of the gap near the left ureteric orifice was so accomplished that the opening of the ureter was included in the cavity of the bladder. Integrity of this suture line was tested by passage of saline per urethra. It was found leaking on the left side. A second layer of sutures were taken with the help of available vesico-vaginal fascia and bladder muscularis. Thereafter there was no leak. The edges of the vagina were undermined still further out at this stage to the extent that the vagina could be closed without tension (Fig. 9). Fortunately, there was not much scar tissue around and this was possible without difficulty. The resulting suture line was U-shaped as shown in Fig. 9. Before closing the vagina a drain was kept beneath its suture line and brought out through a stab wound in posterior vaginal mucosa. A self-retaining Malecot catheter was introduced per urethra and the vagina was lightly packed with gauze. Abdominal incision closed and a drain kept in retrovesical space. Bladder was also drained by suprapubic cystostomy.

Post-operatively the patient was put on continuous suction drainage and received urinary antiseptics. The drains in retropubic space and in vagina were removed after 48 hours. The suprapubic catheter was removed on 10th day. After two weeks the continuous drainage per urethra was changed to intermittent release of catheter in the beginning at frequent intervals and later gradually increased till the catheter was removed totally after 3 weeks. The bladder capacity was then 30 ml. and she could hold urine for about 3 to 4 hours. The patient has done well since then.

Comments

The most striking feature about the successful outcome in this case was that not only was there an anatomical closure of the fistula but also a functionally successful result. One encounters a number of cases of beautifully repaired large fistulae but often presenting themselves with stress incontinence. As I look back, the reason why this patient had no stress incontinence was the preservation of that bladder tissue—which was probably the region of interureteric ridge, and therefore the part of the trigone. It need not be emphasised too well how important is the integrity of trigonal area of the bladder for its normal functioning.

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See Figs. on Art Paper II-III-IV