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ORIGINAL ARTICLE

Latzko repair for vesicovaginal fistula revisited in the era of minimal-access surgery

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Abstract Latzko repair is a technique described for repair of post-hysterectomy supratrigonal vesicovaginal fistulas (VVF) and is often practised by gynecologists, but it has not figured in the armamentarium of urologists the world over. Recently urologists have taken to laparoscopic repair of such fistula but laparoscopic repair is technically demanding with a steep learning curve. We reviewed our experience with the technique of Latzko repair. The study is a review of 10 patients operated by this technique between June 2000 and May 2005, with age ranging from 33 to 55 years (average 39 years). Fistula size ranged from 2 mm to 1 cm. There was no recurrence or sexual dysfunction due to shortening of vaginal length. The results were comparable with laparoscopic VVF repair in terms of morbidity, operative time, blood loss, and patient discomfort. Also, the learning curve involved is minimal. Thus this technique deserves wider adoption by the urological community and should be a benchmark for comparison with laparoscopic repair of VVF rather than the abdominal approach. Bearing in mind the simplicity of the procedure, urologists should feel encouraged to adopt this excellent age-old technique that has stood the test of time rather than exploring more-complex operations such as laparoscopic VVF repair and transurethral suture cystorrhaphy.

Keywords Hysterectomy · Laparoscopy · Partial colpocleisis · Vault fistula · Vaginal repair

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Introduction

Latzko repair [1, 2], a technique for the repair of post-hysterectomy supratrigonal vesicovaginal fistulas (VVF) described several decades ago, has not figured in the armamentarium of urologists the world over. A PUBMED search for this technique in the English-language medical literature using the search words 'Latzko repair', 'vault fistula', and 'vaginal repair' of VVF revealed only three reports of the technique in urology journals, the last published two and a half decades ago [3], although other techniques have been published in the same journals. Recently urologists have taken to laparoscopic repair of such fistulas and have compared it with open abdominal repair [4, 5]. They are exploring even more-complicated ways of managing this problem such as robotic laparoscopic repair [6] and transurethral suture cystorrhaphy [7]. We reviewed the results of Latzko repair for post-hysterectomy supratrigonal VVF in our centre.

Methods

All cases of VVF repair carried out with the Latzko technique in our institution between June 2000 and May 2005 with a minimum follow-up of two years were reviewed from case records. Preoperative evaluation included a sonogram for the kidney, ureter, and bladder, a three-swab test, and cystoscopy. Excretory urography was performed to rule out ureteric injury whenever sonogram revealed hydroureteronephrosis or an absent ureteric efflux was noted on cystoscopy. Conservative treatment, carried out for at least three months, had failed in all patients. All patients with fistula less than 1 cm from ureteric orifice and those with a stenosed vagina were excluded from the study.

The Latzko operation is basically a partial colpocleisis where the upper 2 cm of vagina around the fistula is obliterated. In the original description, Latzko did not suggest excision of the fistulous tract and simply inverted the fistulous tract towards the bladder with interrupted sutures transversely in two layers, where the second one buries the first without entering the bladder mucosa, followed by suturing together of the vaginal edges to complete the repair. Some authors later modified the procedure by adding excision of the fistulous tract and suturing of the freshened edges [8]. We, however stuck to the principles of the original procedure and, without excising the fistulous tract, inverted it towards the bladder mucosa using either two layers of interrupted antero-posterior sutures (for larger fistulae) or two layers of purse-string sutures followed by antero-posterior sutures (for smaller fistulae), thereby apposing the denuded anterior and posterior proximal vaginal walls (Fig. 1). Initially a disc of vaginal mucosa around 1–2 cm all around the fistulous opening was excised and then the fistulous tract was inverted towards the bladder by two layers of purse-string sutures without entering the bladder mucosa, followed by the antero-posterior sutures. The fistula tract was not excised as originally described by Latzko. Finally, the vaginal mucosa was closed over the repair in an interrupted fashion. A per urethral and a suprapubic catheter were placed and left for 14 days before a voiding trial. The following data were recorded: indication for hysterectomy, duration of operation, blood loss and the need for blood transfusion, postoperative analgesia, postoperative complications, days of confinement to bed, recurrence rate, and resumption of satisfactory sexual life.

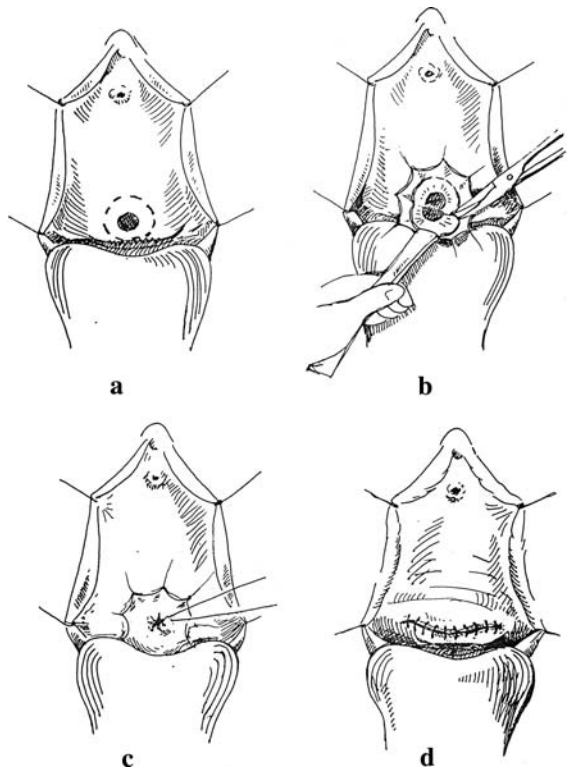

Fig. 1 (**a**) Post-hysterectomy vault fistula with circumferential incision over vaginal mucosa, (**b**) Disc of vaginal mucosa around the fistula being raised, (**c**) Purse string suture being tied around the fistula, (**d**) Completed repair

Results

A total of 10 patients were operated, with age ranging from 33 to 55 years (average age 39 years). The indications for hysterectomy included dysfunctional uterine bleeding (DUB) and fibroid uterus. Duration of operation ranged from 1.5 to 3 h, blood loss ranged between 100 ml and 300 ml (average 240 ml) and none of the patients required blood transfusion. All patients required narcotic analgesics only in the first 24 h after surgery and were shifted to oral nonsteroidal anti-inflammatory drugs the next day along with anticholinergics and stool softeners. All patients were ambulatory and were allowed orally from the first postoperative day. Urethral catheter was

removed after two days and suprapubic catheter after two weeks following a voiding trial. Postoperative complications included fever and urinary tract infection in one patient, which was managed with antibiotics based on urine culture and sensitivity. All patients were advised abstinence for two months. There was no recurrence. Out of 10 patients, eight who were living with their spouse had resumed sexual activity without any discomfort.

Discussion

Latzko repair was described in 1914 [1]. In 1942 Latzko [2] reported 29 cures out of 31 patients operated by this technique. Many others have reported satisfactory results since then. Though the repair does not follow the basic principles of fistula surgery, namely separation of all layers, excision of fistula tract, freshening of margins, non-overlapping suture lines and tissue interposition, it still provides excellent results because the vaginal subepithelial layer, which is inverted towards the bladder using a series of inverting sutures, helps to provide the necessary support [9]. Also the characteristics of post-hysterectomy vault fistula, usually being single supratrigonal and away from the ureteric orifices and with a constant vaginal position on the vault with the posterior edge of the fistulous opening corresponding to the vault scar, help prevent, respectively, the inclusion of ureters during suturing without opening the bladder and maintaining vaginal depth even after partial colpocleisis. Apart from being comparable with laparoscopic repair in terms of morbidity, operative time, blood loss, and patient discomfort, the learning curve involved with Latzko repair is minimal. The lack of major operative complications based on historic reports of the technique [3] is a definite advantage over laparoscopic repair, in which life-threatening operative complications such as bowel injury leading to enterocutaneous fistula [4] and trocar-induced epigastric artery injury requiring reexploration [5] have been described. The lack of postoperative abdominal wounds to be managed is an additional advantage. The shortening of the vagina causes no functional disability [3]. Because of the small number of cases we did not encounter any failures, although the literature describes a failure rate of less than 10%, and the resulting fistula is similar to the original; a secondary Latzko operation is reported to have an equal chance of success as the primary operation [3]. Although the hospital stay was more than two weeks as it was the hospital policy to discharge the patient after catheter removal, in a motivated and compliant patient who can take care of her catheter and report catheter block immediately, early discharge should be feasible.

Most urologists, being familiar with pelvic anatomy, are more inclined to treat supratrigonal VVF by the abdominal route. Vaginal repair by separating the bladder and vagina with tissue interposition for supratrigonal fistulas is sometimes difficult in the depths of vagina. This technique is often practised only by those urologists who have an interest and expertise in urogynecology. However the simplicity of the Latzko technique makes it easy for any urologist to adopt.

As in developed countries, with improving standards of obstetrics care, obstetric VVFs are also on the decline in India, especially in urban areas. Thus the relative rate of postoperative VVFs is increasing. This calls for the resurgence of this technique. In view of all the above discussed points this technique deserves wider adoption by the urological community and should be a benchmark for comparison with laparoscopic repair of VVF rather than the abdominal approach; bearing in mind the simplicity of the procedure, urologists should feel encouraged to adopt this excellent age-old technique that has stood the test of time rather than exploring more-complex operations such as robotic laparoscopic VVF repair and transurethral suture cystorrhaphy.

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