

OPTIC GUIDED VAGINAL REPAIR OF VESICOVAGINAL FISTULA: TECHNIQUE AND PRELIMINARY RESULTS

Hypothesis / aims of study

Various surgical techniques have been proposed for VVF repair, depending on the location, severity and the cause of the fistula and surgeon's experience. Two main approaches include transvaginal and transabdominal routes and the latter has further options as transperitoneal, extraperitoneal, laparoscopic and robotic surgery.(1-3) Transvaginal approach can sometimes be challenging due to the relative lack of familiarity of the vaginal cuff anatomy to many urologists and the difficulty in exposing high or retracted fistulae located near the vaginal cuff, especially in deep, narrow vaginas (1). To overcome these issues, we described a simple technique with the use of endoscopic optics that most of the urologists are familiar with.

Study design, materials and methods

Three women with constant urinary drainage per vagina after total abdominal hysterectomy admitted to our department after referral from secondary care centers where they were diagnosed as VVF. All patients were consecutive cases who were operated between December 2012 and January 2013. Assessment with a clinical examination, imaging (computed tomography cystograms and magnetic resonance imaging), and cystoscopy confirmed the diagnosis of VVF.

The operations were conducted under spinal anesthesia with the patients in the lithotomy position. After sterilization and draping, a weighted retractor and a Lone Star retractor were placed at the vaginal introitus to optimize vaginal exposure. Cystoscopy was performed and ureteral catheterization and retrograde pyelography ruled out any ureteral damage or fistula. A 10-12F Foley catheter was inserted into the fistula over a cystoscopically inserted guide wire. From this point, operation was proceeded with optic vision, mimicking laparoscopic dissection and suturing techniques using a standard 30⁰ optic lens, a surgical monitor and open surgical instruments. The fistula was circumferentially incised and widely mobilized from the surrounding tissues and closed without tension in 2 layers (bladder, 3-0 monofilament absorbable, horizontal; vaginal wall, 2-0 absorbable monofilament, vertical). After closure of the first layer the presence of leakage by filling the bladder was evaluated with 200 cc of saline. A urethral Foley catheter was inserted and maintained for 14 days. The vagina was packed with gauze soaked with povidoneiodine at the end of the operation which was removed on the morning of postoperative first day.

Results

The patients' characteristics, history, and surgical data are summarized in Table 1. The mean operative time was 70 (range 60–80) minutes. Estimated blood loss was minimal for all of the patients. Narcotic analgesics were not needed and postoperative pain was controlled with diclofenac sodium. All patients were discharged from hospital at the postoperative first day. No minor or major complications were observed. At postoperative first and third month follow-up visits, all patients were voiding without any urinary leakage or complaints.

Interpretation of results

The use of endoscopic optics facilitates vaginal approach. Although the study group is has a limited number of patients, our aim was to describe a surgical technique with its preliminary results rather than reporting the outcomes in a series of patients. Our technique has favorable results in the short term with reasonable operative time and minimal blood loss. Postoperative pain is minimal and hospital stay is about 24 hours.

Optic guidance has most of the advantages of laparoscopic surgery while it excludes most of the disadvantages. The most useful advantage is the magnification of the surgical field leading the surgeon making a more delicate dissection. Another advantage is to provide an ergonomic posture for the surgeon without bending to see the surgical field optimally. We also recommend this technique for the education of residents in training centers since it is always difficult for the residents or assisting staff to see the surgical field in vaginal surgery especially in deep and narrow vaginas.

Concluding message

The use of optics in vaginal repair of VVF is a useful technique. Optic guidance facilitates surgical vision, dissection and hemostasis. It is also excellent for surgeon comfort, ergonomics and resident training. In the beginning, instrument overlapping may cause some difficulty and dissection and suturing may be challenging if the surgeon is inexperienced with 2-dimensional view.

	PATIENT 1	PATIENT 2	PATIENT 3
AGE	55	52	43
ETIOLOGY	Total Abdominal Hysterectomy for Myoma Uteri	Total Abdominal Hysterectomy for Dysfunctional Bleeding	Total Abdominal Hysterectomy for Myoma Uteri
CONCOMITANT DISEASES	None	None	None
VVF SITE	Near Vaginal Cuff	Near Vaginal Cuff	Near Vaginal Cuff
CYSTOSCOPIC VIEW	Supratrigonal single fistula	Supratrigonal 2 adjacent fistulas separated with a septum	Supratrigonal single fistula
VVF DIAMETER	<1 cm	<1 cm	2.5 cm

TIME TO SURGERY	13 months	6 months	4 months
OPERATION TIME	70 minutes	60 minutes	80 minutes
BLOOD LOSS	Minimal	Minimal	Minimal



Figure-1. External and endoscopic scenes from the operation

References

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2. Rutman, M. P., Rodríguez, L. V., Raz, S.: Vesicovaginal Fistula: Vaginal Approach. In: Female Urology, Third Edition ed. Edited by L. V. Rodríguez and S. Raz. Philadelphia, PA: Saunders Elsevier, vol. 1, pp. 794-801, 2008
3. Drutz, H. P., Baker, K. R.: Vesicovaginal Fistula. In: Female Pelvic Medicine and Reconstructive Pelvic Surgery. Edited by H. P. Drutz, S. Herschorn, N. E. Diamant. Great Britain: Springer-Verlag London Limited, vol. 1, pp. 471-479, 2003

Disclosures

Funding: None **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** A standart surgical technique which was modified with the aid of endoscopic optics was applied to the patients. The main aim was to describe a surgical technique with its preliminary results rather than reporting the outcomes of a clinical trial including a series of patients. **Helsinki:** Yes **Informed Consent:** Yes