

# Endoscopic Repair of Vesicovaginal Fistula

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**Abstract:** *Background:* Vesicovaginal fistulas is the most frequent kind of urinary fistula in women. Treatment of vesicovaginal fistula (VVF) has been considered a significant clinical problem. We present a special technique and precautions were taken during the treatment of a small VVF using cystoscopic electrocoagulation using a Bugbee electrode to freshen the fistula margins. Postoperative follow-up period was uneventful. Endoscopic management of VVF is an effective and simple alternative to major and invasive reconstructive surgeries. *Materials and Methods:* Twenty women with VVF were offered transvesicoscopic repair of fistula. The procedure done underspinal (12 cases) or general anesthesia (8 cases). In lithotomy position, cystoscope had been performed. Electrocoagulation using a Bugbee electrode to freshen fistula margins for fistulas less than 1 cm. Patient was kept on Foleys catheter and anticholinergic drugs for three weeks postoperatively. *Results:* Twenty women with vesicovaginal fistulas, twelve cause by abdominal hysterectomy, seven by cesarean section, and one case cause by foreign body, underwent this surgical procedure. The procedure time range from 20 to 30 minutes. The procedure was uneventful, with promising success rate of 95%. *Conclusions:* Transvesicoscopic correction of vesicovaginal fistula is safe, feasible, cost effective, with lower morbidity and results in earlier recovery.

**Keywords:** VVF, vasic ovaginal fistula

## 1. Introduction

Urinary fistula is an abnormal opening between urinary tract organs that process urine and carry it out of the body (kidneys, ureter, bladder, and urethra). Urinary fistulas can also form an abnormal connection between a urinary tract organ and another nearby organ such as the vagina or colon<sup>(1)</sup>.

Vesicovaginal fistulas is the most frequent kind of urinary fistula in women. In the developing countries, the commonest cause is obstructed Labor, in the developed countries the primary cause is pelvic surgeries, were abdominal hysterectomy was the most common cause, or radiotherapy<sup>(2, 3)</sup>. Other causes of vesicovaginal fistulas include infection, trauma, foreign bodies, anti-incontinence procedure, and malignancy<sup>(3)</sup>

Vesicovaginal fistula has been a personal, social and surgical issue. Several surgical techniques developed for correction of vesicovaginal fistula, including: transvaginal, transabdominal, and endoscopic approaches. The choice of intervention depend on the surgeon experience and type of fistula<sup>(4)</sup>. Endoscopic intervention had become more popular in urology, reducing the period of recovery and invasiveness of treatment<sup>(5)</sup>. I report my results of endoscopic approach for vesicovaginal fistula repair.

## 2. Materials and Methods

Twenty Patients were enrolled in this study from April 2012 to march 2017. All cases had VVF following abdominal hysterectomy. Patient included in this study are those with fistula size less than 1cm. Ultrasonography, Intravenous urogram and voiding cystourethrography were done in all patients. VVF repair was done at least 4 months following its occurrence. The operations done under spinal or general anesthesia and in lithotomy position cystoscopy was performed to recognize the fistula position, size, and surroundings. Stent was passed throughout the fistula opening in the bladder then fistula's margin traumatized by electrocoagulation using a Bugbee electrode to freshen the fistula margins. Foley's catheter inserted and was

maintain for three weeks. The procedure time range from 20-30 minutes. Patient discharge within 12 hours-2 days on antibiotic and anticholinergic drugs.

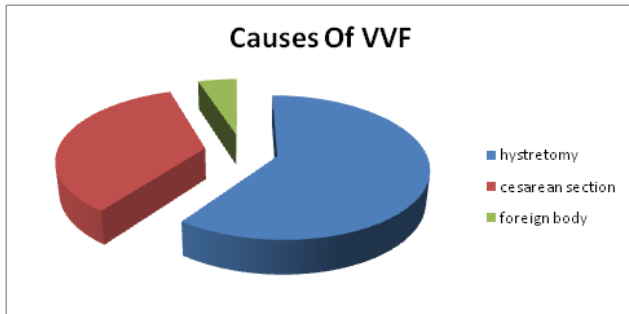
Three weeks after intervention, voiding cystourethrography performed to evaluate patient, if voiding negative Foleys catheter removed and patient evaluated for any leak of urine for 24 hours.

Re-evaluation with history and vaginal examination done one month and three months after Foleys catheter removal.

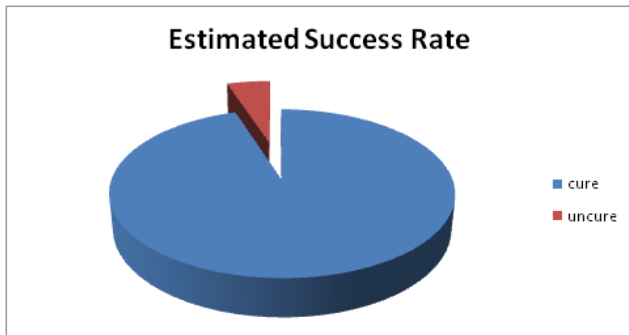
## 3. Results

Twenty patients with VVF following gynecological procedures were enrolled in this study. Their ages were ranged from 38 years to 60 years. Twelve cases of vasicovaginal fistulas were caused by abdominal hysterectomy (60%), while seven cases were resulted from cesarean section (35%), and one resulted from foreign body (IUCD) (5%), figure (1). The procedure done under spinal (12 cases) or general anesthesia (8 cases). All fistulas were away from trigone and ureteric orifices, all fistulas size was less than one cm, no blood loss during operation and no obvious complications were noted at immediate postoperative time. At three weeks and three months follow-up, nineteen patients was considered clinically cured with normal transvaginal examination and cystography, and all were satisfy with their surgical outcome. Only one patient had urine leak on voiding cryptogram (5%). Success rate was estimated to be 95% figure (2).

None of the patients in this study developed voiding dysfunction, urine retention or urinary tract infection.



**Figure 1:** causes of vesicovaginal fistula



**Figure 2:** show success rate of endoscopic electrocauterization

#### 4. Discussion

Closure of a vesicovaginal fistulas are rarely achieve with catheter drainage only<sup>(6)</sup>. Cystoscopic management offers the chance of cure with minimally invasive approach. Bugbee electrodes had been employed for the fulguration of small VVF tracts with a various levels of success<sup>(7)</sup>. We present VVF fulguration and catheter drainage as a treatment option for VVF smaller than 1cm. With the introduction of bioglues and tissue adhesives, further options have become available for minimal invasive treatment of VVF. Muto et al.<sup>(8)</sup> had been reported a successful management of two out of three cases of VVF using endoscopic application of cyanoacrylic glue with guidance of anendovaginal scope. Fistula size reported was 7, 10, and 15 mm. The 15mm VVF had been failed to cure. He also reported that VVF dimensions was the most significant contributing factor for successful management with this technique; short, wide, and ischemic fistulas are most difficult to be treated defectively with this modality; superior success is achieved with long and narrow VVFs<sup>(11)</sup>.

Cystoscopic electro-coagulation enhances fistula closure through fulguration of tract epithelium, improvement of tissue revascularization, and decrease hemorrhage<sup>(9, 10)</sup>. The results of endoscopic application of fibrin glues as a use of tissue sealants and fibrin cystoscopic electrocoagulation as a minimally invasive treatment for VVFs at present is regarded as experimental modality and require more investigation.

Hence, endoscopic treatment of VVF is an effective and simple option for major reconstructive operation. Though, long-term studies on endoscopic management of VVF as a primary treatment, keeping in mind that size of fistula should be taking into account.

#### 5. Conclusions

Endoscopic treatment of Vesicovaginal fistulas is safe, feasible, cost effective, and can provide a promising results. However, further studies are required.

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