

## REPAIR OF LONG STANDING RADIATION INDUCED VESICO-VAGINAL FISTULA: A CASE REPORT

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### ABSTRACT

Vesico-Vaginal Fistula (VVF) is a subtype of female urogenital fistula. It is an abnormal fistulous tract extending between bladder and vagina that allows continuous involuntary discharge of urine into the vaginal vault. In addition to the medical sequelae they have profound effect on patient's emotional well being, therefore requires radical treatment. Here we report a case of old radiation induced fistula, with complaints of persistent leakage of urine. The patient underwent surgery for VVF repair which relieved her symptoms.

**KEYWORDS:** Radiation Induced Fistula, Surgical Management, Vesico-Vaginal Fistula

### INTRODUCTION

Vesico-vaginal fistula (VVF), an abnormal passage between the urinary bladder and the vagina that results in the continuous involuntary discharge of urine into the vaginal vault, is a serious complication of obstructed labour. It is prevalent in the developing world, with recent estimates suggesting that 2 million women live with fistula, mainly in sub-Saharan Africa and South Asia.[1] In the developed world, VVF is usually an injury resulting from gynaecologic surgery. In the United States and the United Kingdom, for example, 70% of fistulae are sequelae of pelvic surgery,[2] which is in sharp contrast to the statistics in India, where 83% to 93% of fistulae are caused by obstructed or prolonged labour.[3, 4] Other less common causes of VVF include pelvic malignancy, pelvic irradiation, obstetric trauma and infection, including tuberculosis [5]. VVFs caused by erosion of a foreign body such as a pessary [6] or vigorous intercourse [7] have also been reported.

The uncontrolled leakage of urine into the vagina is the hallmark symptom. Patients may complain of urinary incontinence or an increase in vaginal discharge following pelvic surgery or pelvic radiotherapy with or without antecedent surgery. The drainage may be continuous; however, in the presence of a very small VVF, it may be intermittent. Increased postoperative abdominal, pelvic, or flank pain; prolonged ileus; and fever should alert the physician to possible urinoma or urine ascites and mandates expeditious evaluation. Recurrent cystitis or pyelonephritis, abnormal urinary stream, and haematuria also should initiate a workup for VVF.

The time from initial insult to clinical presentation depends on the etiology of the VVF. Approximately 90% of genitourinary fistulas associated with pelvic surgery are symptomatic within 7-30 days postoperatively. In contrast, radiation-induced UGFs are associated with slowly progressive devascularization necrosis and may present 30 days to 30 years later. Patients with radiation-induced VVFs initially present with symptoms of radiation cystitis, haematuria, and bladder contracture [8].

A gynaecologic fistula is classified as simple or complicated [9] and may have important implications for the surgical approach taken as well as for the prognosis for cure. Although the simple VVFs are usually uncomplicated surgical cases with good prognosis, complicated VVFs are challenging even for the most experienced and skilled gynaecologic surgeon. The choice of technique used for fistula repair depends mainly on individual surgeon preference.[10]

We present a rare case of radiation induced VVF, repaired using an abdominal (Suprapubic) transperitoneal- transvesical approach.

## **CASE REPORT**

A 60 years old female presented with complaint of continuous leakage of urine from vagina since last 22 years. She had a history of Carcinoma of cervix, detected 22 years back for which she underwent abdominal hysterectomy with radiotherapy. She developed the complaint of continuous leakage of urine from vagina during the cycles of radiotherapy and has been living with the symptoms since then.

Patient's detailed clinical examination was done. PS findings revealed: presence of urine leak while fistula margins were not visible, PV findings revealed about 1 cm x 1 cm circular opening palpable 4 cm from vaginal intrainitrus over anterior wall.

Diagnosis of VVF was confirmed on cystoscopy, which revealed an approx. 1 cm x 1cm ovoid fistulous opening just above the trigone. Abdominal approach for repair of VVF was planned and all the required pre-operative investigation and anesthetic fitness was done.

## **PROCEDURE DETAILS**

The urinary bladder was approached through infra umbilical incision. The anterior wall of urinary bladder was identified and opened. The fistula was seen just above the trigone (Figure 1). Both ureteric orifices were cannulated with feeding tubes (stents) so as to avoid injury to both the Ureters (Figure 2). The urinary bladder was bivalved till Vesico vaginal fistula. The urinary bladder and vagina were separated. The fistula tract was excised and sent for histopathology examination. The Vagina was closed horizontally with 3-0 Vicryl on round body needle. The Urinary bladder wall was sutured vertically with 3-0 Vicryl on round body needle with interrupted sutures after putting Foley's catheter. The omentum was interposed between the Urinary bladder and vaginal vault (Figure 3). The drain was kept in cave of retzius and abdomen was closed (Figure 4). The patient was discharged 7 days post operatively with Foley's catheter. The Foley's catheter was removed after 4 weeks, the patient voided urine normally. Histopathology was reported as: hyperplastic squamous mucosa with underlying sub epithelial fibrosis.

## DISCUSSIONS

The frequency of VVF is largely underreported in developing countries. The predominant cause is prolonged obstructed labour, while the majority of urogenital fistula in developing countries are consequences of iatrogenic causes – most common being hysterectomy. [11]

The first basic surgical principles for the repair of VVFs were described in 1663 by Hedrik von Roonhuysen. In 1834, Jobert de Lamballe published a report of his VVF repairs in which skin flaps were used in the vagina. Later, he advocated the use of tension-free closures using vaginal-releasing incisions [12]. James M Sims published his famous discourse on the treatment of VVF in 1852 [13]. Sims emphasized the importance of good exposure, adequate resection of the fistula and scarred vaginal edges, and the critical importance of continuous postoperative bladder drainage. In 1861, Maurice Collis was the first to report a layered closure technique [14], and in 1893, Schuchardt described a Para rectal incision to facilitate improved exposure for the repair of a high VVF [15]. Trendelenberg, in 1881-1890, described a Suprapubic approach [16] Maisonneuve [17] and Mackenrodt [18] each described the key technique that involves separating the bladder from the vaginal mucosa and suturing each layer individually. In 1942, Latzko published his partial colpocleisis technique for repair of post hysterectomy VVF, in which he used the resection of scarred vaginal mucosa and a layered horizontal closure [19].

Imaging investigation for VVF traditionally included IV pyelography, cystography, cystoscopy and use of contrast media but more recently Transvaginal Sonography has been used.

Surgery is the mainstay of therapy for VVF. The approach used very much depends on the preference and experiences of surgeon. Both Transvaginal and Trans abdominal approaches have comparable results [20, 21]. Transvesical approach is usually done when fistula is located at the level of ureteral orifice or higher as in our case. Vaginal approach is ideal for low lying fistula [11]

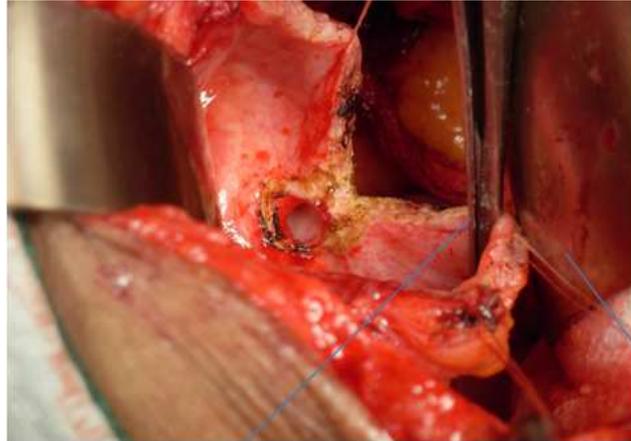
The use of interposition grafts are likely to contribute towards better outcome. These grafts include omental flaps, peritoneal flaps and Martius labial flap pads. The results from a cross-section study concluded that low recurrence was observed with the use of interposition flaps. The most important determinants of successful repair are the principle of tension free repair, adequate blood supply, prevention of infections and adequate post-op bladder drainage. [11]

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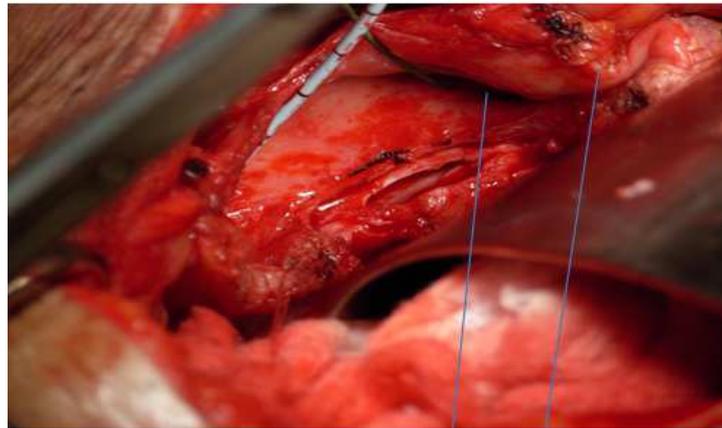
**APPENDICES**



**VVF**

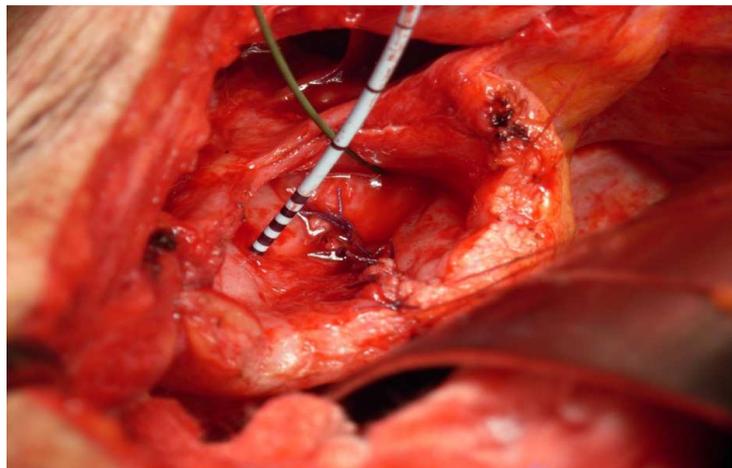
**URINARY BLADDER**

**Figure 1**

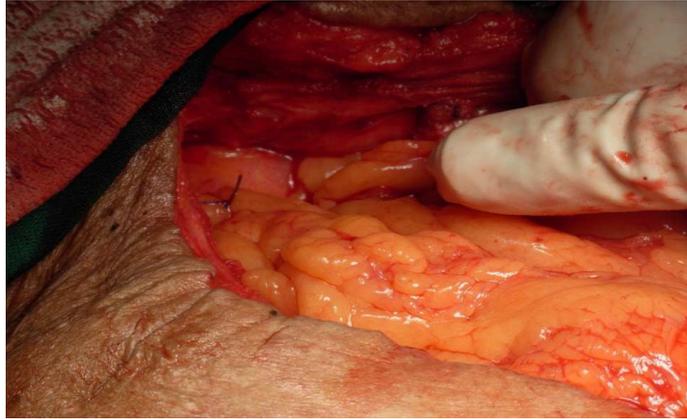


**URETERIC STENTS**

**Figure 2**



**Figure 3**



**Figure 4**