

Use of Pedicled Omental Graft as an Aid to Vesicovaginal Fistula Repair

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ABSTRACT

Objective To determine the role of omental graft in the outcome of vesicovaginal fistula (VVF) repair.

Study design Descriptive case series.

Place & Duration of study Department of Obstetrics and Gynecology Unit 1, Bahawal Victoria Hospital / Quaid-e-Azam Medical College Bahawalpur, from June 1997 till December 2016.

Methodology All patients with VVF were included in this study. All had uncontrolled continuous loss of urine. In all cases examination under anesthesia was done. Transabdominal approach was used in all patients. Adequate dissection of bladder from anterior vaginal wall was achieved and fistula repaired. Omental pedicle graft was interposed between bladder and vagina. The distal part of the omentum was stitched to the distal limits of the space between bladder and vagina. Bladder drainage with three way Foley catheter was maintained for 21 days.

Results Of the total 144 patients with VVF, 43 (29.8%) developed this complaint after obstructed labor, 23 (15.9%) following cesarean hysterectomy, 6 (4.1%) after cesarean section, 44 (30.5%) after total abdominal hysterectomy (TAH), 6 (4.1%) after vaginal hysterectomy, 3(2%) after post coital trauma, 19 (13.2%) after failed earlier repair. Of the total, 140 (97.2%) fistulae healed successfully with the technique of pedicled omental graft. Failure rate was 2.7%.

Conclusion Successful management of VVF largely depends upon the judicious use of omental graft with minimal recurrence rate.

Key words Vesicovaginal fistula, Transabdominal approach, Omental pedicle graft.

INTRODUCTION:

Vesicovaginal fistula is an abnormal communication between the urinary bladder and the vagina that allows an uncontrollable, involuntary leakage of urine per vaginum. VVF leads to a great deal of physical, social and psychological trauma to the

patients. It is regarded as one of the most dehumanizing conditions that affect women.¹ Estimated incidence of VVF is 0.3-2% in developed countries. The main cause in this group is iatrogenic injury, mainly after hysterectomy.² In developing countries where good obstetric care is not available, prolonged obstructed labor is still the commonest cause though it is on decline with improvement in obstetric assistance.

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A small VVF can be handled by indwelling catheter and fulguration of fistulous tract. Complex VVF repair may need interposition tissue like omentum flap and peritoneum etc.³ An accurate evaluation of the number, size and location of fistula is important before embarking on repair. It could be immediate (presenting within 24 hours of injury having no

infection and swelling) or delayed repair done after 3 months (when present after 24 hours of injury where infection and edema are present). The repair could be done through vaginal, abdominal or combined approach. Transabdominal approach is used in complex, high and large fistulae and gives superior results.⁴

Omental pedicle graft has an abundant blood supply and lymphatic drainage. It provides healing tissue, a support and can replace tissue loss in pelvis and perineum. Successful repair of VVF depends on the experience of surgeon not undermining, and adhering to the basic surgical principles. A high success rate has been reported with pedicled omental graft.⁵ A similar study on the subject was previously carried out in our set up more than a decade ago. This study was undertaken to add more cases into already reported data base so as to learn more from the experience of managing VVF in a developing region of Pakistan.

METHODOLOGY:

This descriptive case series included all patient who were managed from June 1997 till December 2016 at the Department of Obstetrics and Gynaecology, Bahawal Victoria Hospital, Bahawalpur. It included previously reported cohort as well. During the study period 144 patients were referred with the diagnosis of vesicovaginal fistula. On admission detailed history regarding incontinence, any desire for micturition, amenorrhea, past obstetric history and previous attempts of repair, was taken. A careful examination was carried out following which urine analysis, renal function tests and intravenous urography were performed. The existing urinary tract infection was cleared. Prophylactic antibiotics cephadrine and gentamicin were started. Sitz bath and vaginal douching given in the morning of the scheduled surgery. The principles observed in each case were: sufficient time given for spontaneous healing; more than 12 weeks, interposition of omental pedicle graft without tension, use of fine suture material and uniting broad raw surfaces without tension and ensuring free post operative urinary drainage.

Examination under anesthesia was done before surgery to access the site and determine the size of fistula, mobility of the tissues and decision about the route and position of patient for operation. The site of the fistula often dictated the surgical approach. Supratrigonal fistulae (fistula above the interureteric ridge) were approach transabdominally and infratrigonal fistula (fistula below the interureteric ridge) transvaginally.

In the transabdominal procedure, patient was put in a modified lithotomy position. A urethral catheter was then inserted and infraumbilical incision made and carried down into the peritoneal cavity. The pouch of Douglas was then exposed. The urinary bladder was completely mobilized and bivalved at the dome. The ureteral orifices and fistulous tract were identified. Both ureteral orifices were cannulated with pediatric feeding tubes for easy identification. The fistula was circumscribed and excised. The bladder was separated from vagina.¹² Omental interposition was done after mobilization. The omentum was mobilized using right gastroepiploic artery as pedicle. The omentum which hinged on the right gastroepiploic artery, was passed behind the ascending colon and into the pelvis. Vaginal part of fistula was closed. The distal part of the omentum was sutured to the distal limits of the space between the vagina and bladder. The bladder was closed in 2-3 layers. The suprapubic tube and pelvic drains were placed.^{6,7}

Broad spectrum intravenous antibiotics were given perioperatively. To prevent bladder spasm anticholinergics drugs were also added. Pelvic drains were removed when the output became minimal. Urethral catheter was removed by 21 days following surgery.⁶ Patients were advised to avoid intercourse for three months.

RESULTS:

One hundred and forty four patients of vesicovaginal fistula were operated with pedicled omental graft through abdominal approach during the study period. The age group is shown in table I. Most of the patients were between 30 – 40 year of age. The cause of fistulae is given in table II. Most of the fistulae noted after transabdominal hysterectomy.

The etiological factors in our previously published study of 26 cases included prolonged obstructed labor (n=13), abdominal hysterectomy (n=6) and failed previously surgery for VVF (n=7).

Of the total 140 (97.2%) fistulae healed successfully with pedicled omental graft but 4 (2.7%) patients who were diabetic started bed wetting on the third day. Strict diabetes control with insulin and adequate uninterrupted bladder drainage continued for three weeks. After three weeks there was still mild bed wetting.

DISCUSSION:

Vesicovaginal fistula is the most distressing complication of obstetric and gynecological procedures. Poor nutritional status, illiteracy, limited access to health care, early marriage, high parity

Table I: Age Groups

Age (year)	Number (n)	Percentage (%)
< 20	08	5.5
20-30	46	32
30-40	60	41.6
> 40	30	20.8

Table II: Causes of Vesicovaginal Fistulae

Etiology	Number (n)	Percentage (%)
Transabdominal Hysterectomy	44	30.5
Obstructed Labor	43	29.8
Cesarean Hysterectomy	23	15.9
Cesarean Section	6	4.1
Vaginal Hysterectomy	6	4.1
Postcoital Trauma	3	2
Failed Earlier Repair	19	13.2

and mismanagement by unskilled practitioners are the contributing factors.⁹

The geographical location of study site is a developing part of Pakistan with scarce healthcare facilities and lack of awareness among the population. The etiology of fistulae has changed over years. With the gradual improvement of healthcare facilities at remote areas, the scenario is changing. Previously the medical facilities were not up to mark. Now with the change of Government policies and availability of doctors and specialists at primary and secondary health care levels lead to decrease in the incidence of obstructed labor. In such cases cesarean section is promptly performed. Thus the chances of VVF are reduced. In comparison with our first study the number one cause of VVF is now trauma during hysterectomy.¹⁰

Fistulae are now classified into three groups, firstly, in the obstetric field, majority were due to pressure necrosis due to obstructed labor followed by forceps delivery and cesarean hysterectomy. Secondly the surgical causes were mainly due to hysterectomies.¹¹ Thirdly, a general miscellaneous group which include causes like radiation for malignancy, foreign bodies and inflammatory diseases.¹²

In all of our patients repaired by transabdominal approach we interposed omentum between the vagina and urinary bladder. Omentum provides vascularity and its rich lymphatics enhances the drainage of inflammatory fluids from surgical fields.

Proponents of omental interposition reports the increase success rate of fistula closure as noted in present series. Nowadays minimally invasive surgery is also used in such cases. Laparoscopy has been performed with good outcome. Few articles on robotic surgery are also available in literature. We have no experience of using these technologies.^{13,14,15}

CONCLUSIONS:

VVF remains a devastating condition leading to physical, social and psychological trauma for the patient. Successful repair depends on the experience of surgeon, adhering to the basic surgical principles, judicious use of interposition of omental flap and avoidance of hematoma formation. These are the causes of high success rate in this study.

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Author's Contributions:

Sohail Mahmood Ch: Main idea, collection of cases, methodology and result with discussion.

Bushra Lali: Compilation and literature search.

Conflict of Interest:

The authors declare that they have no conflict of interest.

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