



Research Article

REPAIR OF COMPLICATED VESICO-VAGINAL FISTULA WITH TENSOR FASCIA LATA MUSCULOFASCIAL FLAP

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ABSTRACT

VVF is frustrating for the patient as well as for the treating surgeons. Patient is miserable as she is wet all the time. Simple fistulas can be taken care of with routine methods. It is the complicated fistulas which need vascularised tissue to bring in between vagina and bladder. So far omentum, gracilis and bulbo-cavernous has been used with varying degree of success. In this case, TFL (tensor fascia lata) musculo-fascialvascularised flap was used, its advantages and disadvantages are discussed.

Key words:

VVF Repair, TFL flap

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INTRODUCTION

Vesico-vaginal fistulas are frustrating for the patient as well as for the treating surgeons. Patient is miserable as she is wet all the time. Various modalities of management like simple closure in layers, use of local tissues in the form of colpocleisis, omentum, gracilis muscle, bulbocavernous muscle are used with varying degrees of success. Simple fistulas can be tackled by routine methods without any problem. But it is the complicated fistula which is a real challenge to the treating surgeon.

Vesico-vaginal fistulas may be located at any point along the vaginal wall and may include any part or whole of the bladder base and urethra. They may be single or multiple. High fistulas are always supratriangular in location, i.e., above the interureteric ridge, seen commonly because of obstretical complications and in post radiation cases. Mid-vaginal fistulas are located below the interureteric ridge and are commonly caused by misplaced radium applicators, anterior colporrhaphy, prolonged labour and difficult forceps applications. Bladder neck and upper urethral fistulas are again because of obstretic complications. Massive fistulas involve less or most of or whole of the vaginal wall, the anterior cervical lip, the bladder base including the trigone and sometimes the upper urethra may be lost in extreme cases. Again the circumferential vesicovaginal fistulas are due to prolonged obstructed labour.

The complicated fistulas are those that are large, those that have had several unsuccessful attempts at repair, those that involve urethra, vesical neck or ureter, those that are associated with intestinal fistula and those that result from radiation for gynaecological malignancies.

Such complicated fistulas require to bring vascular tissue for support as well as re-vascularization. Tensor fascia lata (TFL) musculofascial flap is one such vascular tissue.

TFL musculocutaneous flap is not a new flap. It was routinely used for closure of difficult abdominal wall defects. By using TFL musculofascial flap we are bringing additional vascularity which is most essential for healing. Separation of vesical suture line as well as vaginal suture line by interposition of strong vascular tissue like Tensor Fascia lata has given us almost cent-percent results.

MATERIAL AND METHODS

From 1988 - 1993, 5 cases were operated for vesicovaginal fistula with Tensor Fascia latamusculofascial flap in our centre. The cause of VVF in all these cases was complications of abdominal hysterectomies. The patients were between the age group of 35-45 years. The details of indications of hysterectomies were not available with the patients.

CASE NO. 1: She was operated for abdominal hysterectomy, following which she developed a high VVF. She was operated twice outside with omental flap for closure of VVF but with each attempt, infact the size of the fistula went on increasing. On per vaginal examination it was admitting 4 fingers.

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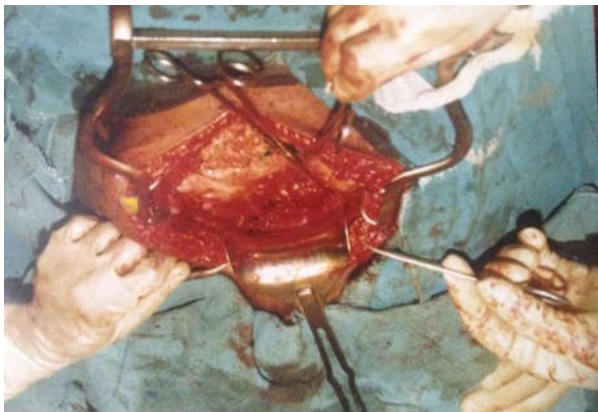
CASE NO. 2,3,4&5 : They also had VVF after abdominal hysterectomies and all had fistula which was admitting almost 4 fingers.

Tfl Musculofascial Flap : Is a type I flap, supplied by lateral circumflex femoral artery, a branch of profundafemoris artery.

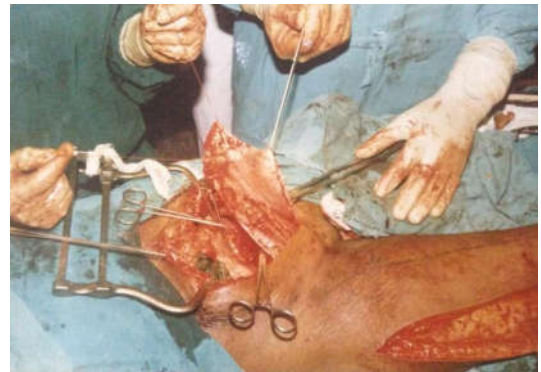
In all the cases the fistula was explored per abdominally, dissected and the scar tissue was excised. The opening of the fistula in bladder and vagina were closed separately in layers. Through the midlateral incision over the thigh, the TFL musculo-fascial flap was turned on its own and tunneled subcutaneously to deliver it into the abdominal incision. It was laid down between bladder and vagina and sutured in such a way that the suture line of vagina and bladder is separated completely.



Flap Is Completely Dissected



Per Abdominal exploration of VVF



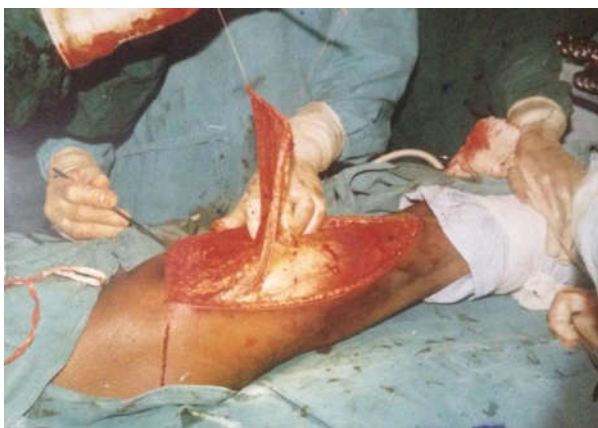
Tfl Flap Turned on Itself and Tunneled Subcutaneously & Is Delivered In the Abdominal Incision



Tfl Flap In Situ



The Tfl Flap Is Interposed Between the Suture Lines of Bladder and Vagina



Flap Is Dissected On Its Pedicle



Closure of the Thigh Incision

DISCUSSION

Latzko (1913) recommended a technique of high colpocleisis for supratrigo-vesicovaginal fistulas. This technique was first described by Simon and was modified by Latzko in order to prevent the formation of bladder diverticula. Vesicovaginal fistulas, especially the complicated ones are difficult to treat and prone for recurrence with each attempt, in fact the size of the fistulas kept on increasing in size as noticed in Case No. 1. In cases of multiple previous unsuccessful attempts at closure may produce excessive scarring and fix vagina, so eventually exposure from below is extremely difficult. Under these circumstances transabdominal approach is required. O'Connor(8) described an abdominal operation for VVF in 1951 the operative procedure is bisecting the bladder with wide mobilization of the bladder and vagina and allowing for closure of the vagina and bladder in separate plane.

When local tissue healing is seriously impaired by radiation, infection, or other factors, it is usually necessary to bring fresh, pliable and well vascularised tissue into the operative field to support and facilitate healing.

Kirikuta and Goldstein(5) described vascularised omentum in the repair of difficult fistula. So far it is first choice with many surgeons. The advantages of omentum are it is close to the defect and does not need additional incision. It is highly vascular and is dispensable. The disadvantages are - adhesions and volvulus. The omentum is rightly called as abdominal policeman and it will be logical to spare it for abdominal emergencies.

Garlock(4) described the gracilis muscle flap in 1928 which was later modified by Ingleman Sundberg and more recently by Hamlin and Nicolson. Martins obtained graft from labia majora, from one or both sides and is composed of bulbocavernous muscle and fat. Menchaca A described rectus abdominis muscle flap for closure of VVF.

For closure of any fistula two important factors are involved

1. Vascularity
2. Separation of suture lines. (suture lines should not overlap on each other)
3. Interpose vascular tissue in between suture lines.

TFL musculofascial flap fulfills these factors. This flap was used routinely in our department for closure of difficult abdominal wall defect. In Case No. 1 omentum was already tried twice, so we thought of TFL flap.

Advantages of TFL flap

1. It is highly vascular, it brings additional vascularity along with it which is essential for healing.
2. Easy to raise.
3. Strong tissue.
4. No donor area morbidity, cosmetically also acceptable.
5. By using this modality abdominal policeman, i.e., omentum is spared.
6. It has got excellent reach, can be put as interposition between the suture line of bladder. For healing of any fistula, separation of two suture lines are essential.

The theoretical disadvantage of incisional hernia from a dent in the peritoneum through which the flap is introduced into the pelvic cavity is there but in follow up study of 10 years, not a single patient has had this complication.

Considering the above advantage, TFL flap can be definitely used for small complicated vesicovaginal fistulas. Though this series is very small but the results what we got are encouraging.

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