CASE REPORT

Management of a Case of Advanced Vulval Carcinoma with Flap Reconstruction: A Case Report with Review of Literature

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Abstract

Aim and background: Several myocutaneous flap approaches have been described for repairing large vulvar defects caused by deforming radical cancer procedures in the female perineum. In general, vulvar cancer has a favorable prognosis when adequately treated with multidisciplinary treatment.

Case presentation: In this case report, we describe a patient who underwent a radical vulvectomy for locally advanced squamous cell carcinoma of the vulva, and the defect was reconstructed by an anteromedial thigh flap.

Conclusion: Anteromedial thigh flap offers many advantages including adequate soft tissue coverage, a shorter route for flap transfer, an unnoticeable scar, quick recovery times, and better functional outcomes.

Clinical significance: Large abnormalities are now more easily repaired, and the morbidity linked to such radical procedures in advanced vulvar cancer has decreased due to the reconstruction option with an anteromedial thigh flap.

Keywords: Anteromedial thigh flaps, Flap reconstruction, Gynecological cancers, Lymphadenectomy, Vulval carcinoma.

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Introduction

Vulvar cancer is an uncommon malignancy of the female genital tract that presents in the sixth and seventh decades of life. Surgery is the preferred option for treating malignant vulvar tumors in their early stages, but there is a substantial risk of immediate postoperative complications. Results, however, depending on how aggressively the surgery was performed and how much of the tumor was removed.[1]

Following the dissection and excision of vulvar tissue, the reconstruction of these surgical defects is a definitive challenge. This is where the role of vulvovaginal reconstruction comes in, for the restoration of the structure, body image, sexual function, and integrity of genitalia and pelvic floor while working with complex gynecologic anatomical structures, inherent bilaterality, and also the limitations of local donor tissue.

Case Presentation

A 56-year-old lady hailing from an urban area of West Bengal had presented to the hospital with a vulval growth which progressed gradually until it was diagnosed with cancer on biopsy. The patient had no other medical or surgical illness.

Upon local examination, there was a large hyper keratinized growth of around 6 × 7 cm that was scattered over both labia majora, groin, and medial aspect of the upper thigh. Another large exophytic mass (5 × 4 cm) was present over the medial aspect of the left thigh extending to the left labia majora and involving associated lymph nodes in the left inguinofemoral area (Fig. 1).

On vaginal examination, the uterus was normal in size and no adnexal mass was palpable.

Groin examination revealed a palpable left inguinal lymph node (1 × 1.5 cm) which was not fixed.

A preoperative abdominal computed tomography showed no significant findings. A radical vulvectomy with bilateral inguinofemoral lymph node dissection and an anteromedial thigh flap reconstruction was planned under general anesthesia.

The multidisciplinary team of surgeons included gynecological oncologists and plastic surgeons. For radical vulvectomy, an elliptical incision was used, with the apex of the incision near the mons pubis and the lateral margins 2 cm away from the labio crural fold. Bilateral inguinal lymph node dissection was performed by separate incisions. The defect created measured 25 × 14 cm, extending from the mons pubis to the anus and laterally up to the upper third of both thighs. The patient was prepared and redraped for the flap reconstruction procedure.

Left-sided anteromedial thigh flap was used. After dissecting the flap and pediculising it, the flap was rotated and fixed to the perineal wound, to close the defect. Flaps harvested from the upper sections of the inner thighs were inserted obliquely against

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Declaration of patient consent: A written informed consent was obtained from the patient for the publication of the case details and the accompanying images.

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Conflict of interest: None

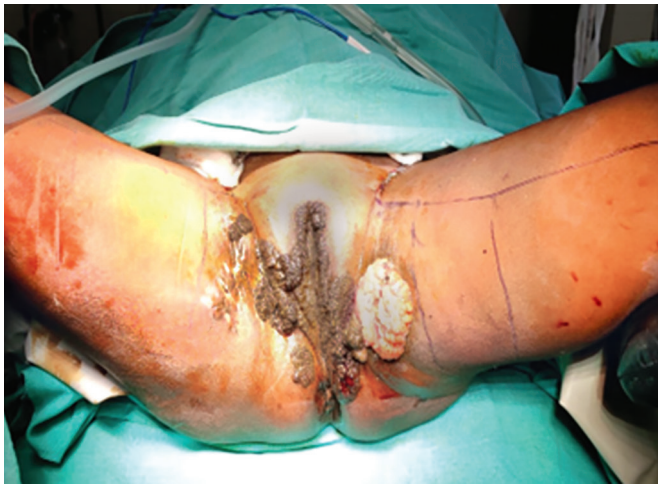

Fig. 1: Appearance of vulval growth at the time of presentation

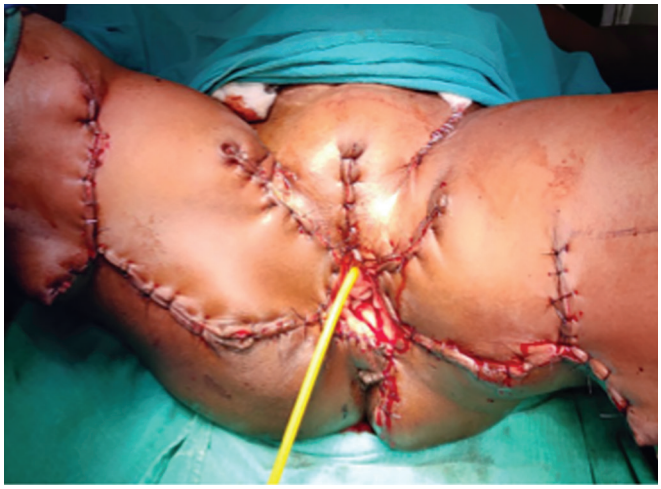

Fig. 2: Anteromedial flap reconstruction following excision of tumor

each other to close the space between the mons pubis and the upper area of the vagina (Fig. 2). The duration of the entire surgical procedure, along with the reconstruction phase took 320 minutes.

The Patient was hemodynamically stable postoperatively. Ambulation and physiotherapy were restricted for one week to allow healing of the flap reconstruction. However, the patient developed vulval wound dehiscence on the 15th postoperative day which then gradually healed after providing regular wound dressing. Her drains were removed on postoperative day 39 after which she was discharged.

The patient had no difficulties in urinating, emptying the bowels, or incontinence following the surgery, which left her feeling quite satisfied with the treatment. At seven months follow-up, the vulval sensation was excellent, and the wound healing was satisfactory. The results of the histological analysis showed moderately differentiated invasive squamous cell carcinoma of the vulva.

The resected margins and the deeper planes of resection were free of tumor. Lymphovascular invasion and perineural invasion were not seen. The inguinal nodes were found to be free of tumor. Hence The International Federation of Gynecology and Obstetrics (FIGO) stage was calculated to be I b (pT1, p N0, M0).

Postoperative multi-disciplinary team (MDT) meeting was done for this patient and the decision was taken to proceed with adjuvant radiotherapy. At the 15 monthly follow-up, the patient showed no evidence of relapse and had no functional issues.

Discussion

There are many cases in the reported literature that document the use of flaps in reconstructive surgery for the treatment of vulvar cancer (Table 1). The major objectives of this surgery include tension-free wound closure, maintaining the introital opening without deviation, restoring the anovaginal division, and simultaneously closing related defects such as the mons pubis or inguinal defects. Reconstructive procedures therefore can lower morbidity and enhance the quality of life for patients. Myocutaneous flaps are being used more frequently in the treatment of gynecological cancers. Skin grafts, skin flaps, fasciocutaneous flaps, and myocutaneous flaps are among the reconstructive alternatives.[2] The size and location of the defect

Table 1: Review of literature of previously reported cases of advanced vulval carcinoma with flap reconstruction

Author	*Published year*	*Case*	*Primary surgical treatment*	*Flap*	*Outcome*	*Follow-up time*	*Status*
Huang, Jung-Ju[3]	2014	13 patients	Radical vulvectomy	23 flaps used in 13 patients including 2 cases of medial thigh perforator flap	2 cases had wound disruption which healed with debridement	–	No recurrence
Stefano Gentileschi[4]	2016	80 patients	19 - Radical vulvectomy 42 - extended vulvectomy 19 - partial vulvectomy	8 different flap techniques were used including three cases of anteromedial perforator flap	No complications	–	No recurrence
Tommy Nai-Jen Chang MD[5]	2016	19	Radical vulvecetomy	4 cases of anteromedial flap	Poor wound healing in 3 patients which was treated conservatively	30 months	No recurrence

(Contd...)

Table 1: *(Contd...)*

Author	*Published year*	*Case*	*Primary surgical treatment*	*Flap*	*Outcome*	*Follow-up time*	*Status*
Nicolae Bacalbasa[6]	2019	1	Left radical hemi vulvectomy	Gracilis myocutaneous flap	Nonunion of distal part of flap which healed gradually	–	No recurrence
Emilio Trignano[7]	2019	1	Radical vulvecetomy	Modified unilateral musculocutaneous gracilis flap	Minor wound infection on 7th postoperative day which healed with dressing	12 months	No recurrence
Bien-KeemTan[8]	2014	43	Radical vulvecetomy	Gracilis flaps in 24 patients		30.2 months	No recurrence
M Vermaas[9]	2005	25	Radical vulvecetomy	7 patients had primary reconstruction and 18 patients	Minor complications in donor site in 3 patients	12	No recurrence

(i.e., unilateral, bilateral, adjacent to the pubic symphysis or anus, groyne metastases) or the presence or absence of recurring lesions mostly influence the choice of the flap.

Following vulvar cancer removal, a local flap should be employed to repair small and medium-sized defects.[3,4] The benefits of local flaps include uncomplicated surgical technique, minimal trauma, quick recovery, and similar thickness and texture between the flap and the defect area. It is challenging to repair recurrent lesions with local flaps when the defect is significant and local lymphadenectomy is required. In these cases, pedicled flaps can be an option.

The anteromedial thigh flap, which was used in our case, has proven to be highly useful among the numerous other flaps used in vulvar reconstructions. This is due to the soft tissue covering the medial thigh, which gives the flap the requisite bulkiness to recreate the vulvar region's natural and distinctive shape. Compared to flaps from the lateral thigh or abdomen, medial thigh flaps offer a shorter route for flap transfer. Moreover, a scar over the medial thigh is also less noticeable.[5] In patients with recurrence and those who have received radiotherapy, the use of medial thigh flaps is beneficial, as it limits the use of radioactive tissue for reconstruction. Despite the many benefits, there aren't many documented instances of anteromedial thigh flaps being used to treat gynecological cancers.

Conclusion

With proper therapy, the prognosis for vulvar cancer is typically good, and a multidisciplinary approach is always preferable. Large abnormalities are now more easily repaired, and the morbidity linked to such radical procedures in advanced vulvar cancer has decreased. The Anteromedial thigh flap is a versatile perforator flap that is useful to treat large vulva-perineal and groin defects.

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