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The management of a bicycle trauma leading to vulvar tissue loss: A case report

Mehmet ALTIPARMAK[1], Ahmet Akın SİVASLIOĞLU[2], Tolga HALICI[3]

[1]Plastic Surgeon, Özel Ege Liva Hospital, Aydın, Türkiye
[2]Gynecologist and Obstetrician, Private Clinic of Urogynecology, İzmir, Türkiye
[3]Gynecologist and Obstetrician, Clinics of Obstetric and Gynecology of Muğla Research and Training Hospital, Muğla, Türkiye

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ABSTRACT

Vulvar tissue losses due to trauma are rare and few cases have been reported in the literature. In cases with tissue loss surgical intervention is necessary. Not only the vulvar reconstruction but also tissue perfusion with blood is utmost important. We present the case of a patient with vulvar tissue loss due to bike accident and the management of the patient.

Keywords: Vulvar trauma; vulvar tissue loss; superficial femoral artery perforator flap

INTRODUCTION

After the adolescent period, the fatty tissue is deposited in mons pubis and labia majora providing a protection to traumas. Non-obstetric traumas to the abundant blood vessels and nerve endings in these areas can lead to different clinical problems such as hematoma, lacerations, tears, tissue loss, chronic pain an even itching. However, the non-obstetric vulvar injury incidence is 3.7%.[1] Injuries are frequently due to falling astride a firm object, consensual coitus, sexual assault, vigorous coitus, acts of physical aggression cold waxing, tight clothing, insertion of foreign bodies and self-manipulation.[1,2] Vulvar tissue loss is very rare compared to the vulvar hematomas and basically is a result of penetrating trauma to the region.

CASE REPORT

A 24-years-old female patient admitted to our unit 1 week after falling off bike. Her vulvar examination revealed an infected discharge and necrotic appearance with a tissue loss of approximately 10x3 cm, including the left labia minora. Also, there were stitches visible over the wound that had been put in the center which the patient applied soon after the accident (Image 1). Antibiotherapy was started. Tetanus vaccine and tetanus IG prophylaxis were applied. The wound cleaning and local debridement were performed upon admission on daily basis. As a result of daily dressings with rifocin and necrotic tissue debridements, the wound turned out to be clean on the 7th day of admission (Image 2). On the 8th day of patients's admission,

Address for Correspondence: Ahmet Akın Sivaslıoğlu, Gynecologist and Obstetrician, Private Clinic of Urogynecology, İzmir, Türkiye
E-mail: akinsivaslioglu@gmail.com **ORCID ID:** orcid.org/0000-0003-3711-0118
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the patient was operated for reconstruction. The patient and relatives gave informed consent to surgery and video recording.

The superficial femoral artery perforator (SFAP) flap was harvested measuring 10x3 cm in ovoid shape from the inferior region of gracilis muscle. The flap was advanced 4 cm towards the vaginal introitus and was sutured to the edge of the vaginal introitus with 3/0 PDS. Moreover, the rest of the flap was sutured to the healty skin tissue with 4-0 rapid polyglactin (Image 3). A 10F hemovac drain was placed under the flap. The patient was discharged on postoperative 5th day without any problem.

The follow-up visits on first week (Image 4) and first month (Image 5) after discharge showed no signs of infection and rejection. Besides she had no discomfort during walking due to flap. She was very happy with the cosmetic and anatomical result that have been achieved.

Image 1. The apperance of the vulva upon admission of the patient. Necrotic tissues and profuse discgharge as well as stitches were visible

Image 2. The wound is seen as clean after daily dressings and antibiotic treatment

Image 3. The The superficial femoral artery perforator flap which was harvested from the inferior region of the gracilis muscle was advanced towards the vaginal introitus in order to cover the defective area (the advancement of the flap was 4 cm)

Image 4. The view on postoperative 7th day. There was no sign of infection or rejection of the flap

Image 5. The view on postoperative 1 month. The cosmetic and anatomical results were very good

DISCUSSION

Vulvar lesions necessiating surgical intervention represent 0.8% of all gynecologic emergencies.[1] The vulva contains loose connective tissue and smooth muscles. The blood perfusion is mainly from the pudendal artery, which branches off the internal iliac artery. The injury to labial branches of the internal pudendal artery, may cause significant vulvar hematomas or bleeding. In our case, the patient fell off the bike and a large tissue defect roughly measuring 10x3 cm was seen. No hematoma was observed. However; an extensive swelling was noted that should be related to the low resistance of the subcutaneous tissues in vulva.[3] Generally, the bleeding is usually seen beneath the pelvic fascia and the levator ani. However, if the hematoma is on the pelvic fascia, it can spread underneath the Poupart's ligament and reachs up to the renal fossae retroperitoneally.[4]

The management of vulvar soft tissue defects has been well defined. According to the agorithm; if the defect is <2 cm in diameter wound closure without flap can be carried out; however if the defect is >2 cm, then for cosmetic and functional reasons flap surgery must be considered.[5] Although there are different flap techniques; perforator flaps have been gaining popularity. With the development of microvascular surgery, and further understanding of the anatomic vasculature of the SFAPs, its utilization as a donor site likely appears to increase dramatically.[6] The superficial femoral artery supplies the distal two thirds of the medial thigh as well as portions of the proximal third of the anteromedial thigh.[7] In our case; we used the SFAP flap with a great success.

CONCLUSION

The treatment of the penetrating vulvar traumas leading to tissue loss necessitates expertise.

Large vulvar defects should be treated with flap and basically perforator flaps in the region provide better results.

ETHICS

Informed Consent: The patient and relatives gave informed consent to surgery and video recording

Peer-review: Internally and externally peer-reviewed.

Contributions

Surgical and Medical Practices: M.A., A.A.S.; Concept: A.A.S.; Design: A.A.S.; Data Collection or Processing: M.A., A.A.S., T.H.; Analysis or Interpretation: A.A.S.; Literature Search: T.H.; Writing: T.H.

DISCLOSURES

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