JKAHS
Journal of Karnali Academy of Helath Sciences

Case Report

A Case Of Fournier's Gangrene reconstructed by Anteriomedial Fasciocutaneous thigh flap in Karnali Academy of Health Science, Jumla

Neupane M[1], Devkota H[1], Menyangbo S[2], Paudel S[2]

1. Lecturer, Department of General Surgery 2. Lecturer, Department of Internal Medicine

Karnali Academy of Health Science (KAHS), Jumla, Nepal

Corresponding Author: Dr Manik Neupane

Email: *manikneupane111@gmail.com*

Introduction

Fournier's gangrene is type I necrotizing fasciitis of perineum and genital area which can extend up to the abdominal wall. The necrotizing process commonly originates from anorectum, urogenital tract or skin of genitilia due to trauma, recent surgery and presence of foreign body. In general,the infection occurs in immunosuppressed and patients with low socioeconomic levels and undernourished individuals. Vasectomy and circumcision are the rare causes among multiple causes of fournier's gangrene[1]. Fournier's gangrene is predominantly a polymicrobial infection. The responsible organism include both aerobic and anaerobic strains which act synergistically and produce enzymes like collagenase, heparinase, hylorunidase, streptokinase and streptodomase which promote rapid digestion of fascial barriers, tissue destruction and necrosis.

In general, the most common presenting symptoms of fournier's gangrene include genital discomfort and pruritis in prodromal phase followed by scrotal swelling, pain, hyperemia, erytheme, induration, crepitus and fever which may ultimately leads to necrosis, foul smelling discharge and gangrene. It is usually associates with fever, tachycardia, dehydration, hypotension, leukocytosis, anemia and thrombocytopenia.

Often after eliminating the infection and removing the devitalized tissues, extensive open areas, mainly in the pubis, perineum, and genital region, must be covered. Major scrotal defects with exposed testes have been treated in many ways. The methods for testicular salvage have evolved from the simplest solution with skin grafting, burying them underneath the medial thigh skin, tissue expansion of adjacent tissues and use of local fasciocutaneous or musculocutaneous flaps. However, the vast majority of reconstructive options include the use of flaps, either fasciocutaneous or musculocutaneous[2].

Reconstruction of the scrotum is important for functional, cosmetic, and psychological reasons. Local pedicled fasciocutaneous flaps from the medial thigh and the groin area offer the advantages of avoiding skin-graft problems, preserving adequate sensation, and covering a large defect. In the anteromedial region of the thigh, there is a well-developed fascial plexus with marked axiality aligned with sartorius. The single staged-early sensate flap coverage is ideal in majority of cases[3].

Case report

A 24 years male from remote village of Jumla, who underwent day care vasectomy with history of scrotal swelling and pain suggesting hematoma, a day after vasectomy did not seek medical attention. He practiced conventional home remedies for the condition. After 15 days of illness he presented in emergency

department of KAHS with complain of foul smelling discharge and blackish discoloration of scrotal skin. He was febrile, tachycardia and blood pressure was within normal limit. Local examination showed black gangrenous area involving whole scrotum up to the root of penis sparing medial thigh and anorectal region with foul smelling discharge (Fig. 1).

We immediately resuscitate the patient and started broad spectrum antibiotics. Then after preoperative preparation the patient underwent extensive debridement under intravenous anesthesia. After debridement, there was extensive loss of scrotum with dartos muscle with exposed viable testicles without involvement of urethra, penis, ano-rectal and thigh region.

Patient underwent second look debridement after 2 days and had extensive scrotal defect which was not possible to correct by primary closure. After continuation of antibiotics and regular dressing, on day 5 of 1st debridement the area looked healthy with healthy granulation tissue (Fig. 2)

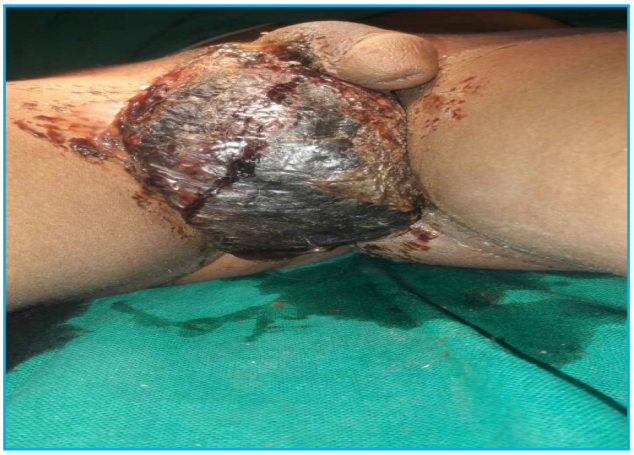

Fig. 1

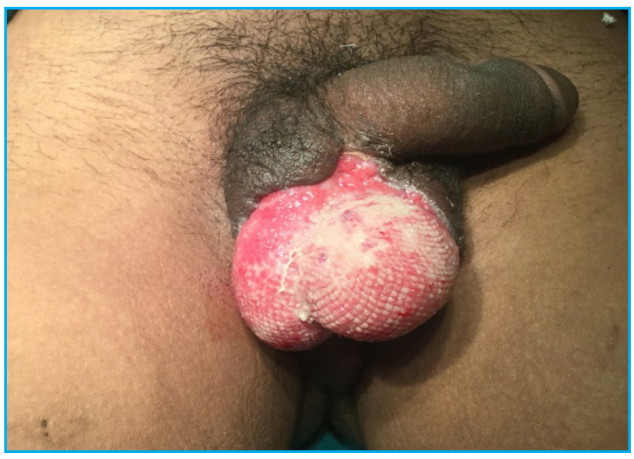

Fig. 2

On day 6 of 1st debridement the scrotal defect was reconstructed by anteromedial fasciocutaneous thigh flap (Fig. 3, 4) under spinal anesthesia.

Patient was kept in lithotomy position. Tissue availability of donor site was accessed and the outline of the flap was marked. The size of the flap was measured according size of defect bilaterally. The incision was made and the depth include underlying fascia. The size of the flap was assessed repeatedly during the operation and incision was extended as required. The bleeding pattern of the raised flap was assessed. The wound edge at donor site were undermined and approached to facilitate the closure. The defect was closed by bilateral flap of required size and finally the donor site defect was closed primarily.

Fig. 3

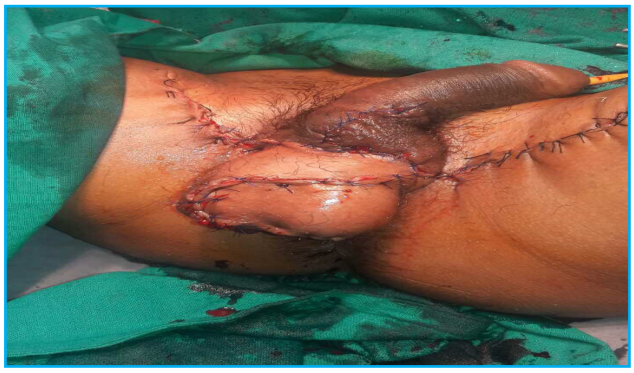

Fig. 4

On day 3 of reconstruction surgery small margin of flap showed blackish discoloration and necrosis, later re-debridement of necrosed area was done.

v The 2nd follow up after 3 months, the testicles were of normal size, felt separately, mobile inside the reconstructed sac with hair growth with good cosmetic, contour, color - matching and aesthetic result as likely as scrotum (Fig. 6). The patient was satisfied with the result.

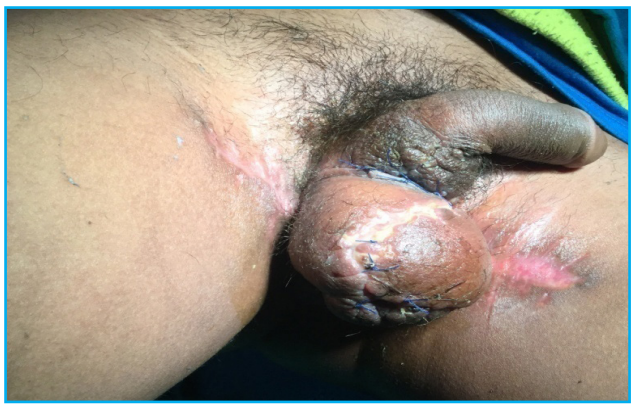

Fig. 5

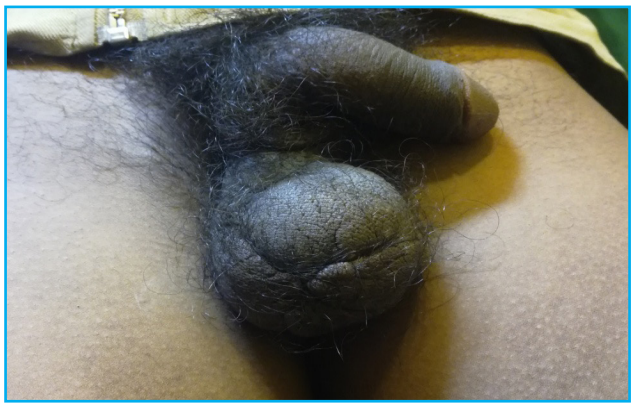

Fig. 6

Discussion

Fournier gangrene is necrotizing infection of perineum and genitalia which often results in large defect with testicles exposed. The mortality rate is lower (16%) than other necrotizing infection thus, more patient survived but suffered from large resultant defect [1]. Fournier gangrene can result from infection of hematoma secondary to different cause. Development of Fournier gangrene from minimally invasive day care vasectomy is rare which is mainly due to secondary infection of hematoma [3].

The reconstructive method ranges from healing by secondary intention to flap reconstruction. The aim of reconstruction is to offer the functional and aesthetic outcome, the functional outcome includes coverage of defect and protection of testicles and aesthetic outcome is to create new scrotum for a patient which is similar to his original one in term of color, texture and feel such that his psychosocial status can be restored.[6]

Healing of a large defect by secondary intention results in prolonged hospitalization and immobilization. Similarly, it is not possible for primary closure when the defect is large and skin graft may need suitable wound bed and has chance of infection. The flap reconstruction brings the vascularized tissue to wound bed rescue better against infection and offers good cosmetic result. Local pedicled fasciocutaneous flaps from the medial thigh and the groin area offers the advantages of avoiding skin-graft problems, preserving adequate sensation, and covering a large defect. In the anteromedial region of the thigh, there is a well-developed fascial plexus with marked axiality aligned with Sartorius[4]. Anteromedial fasciocutaneous thigh flap also known as pudendal thigh flap or modified 'singapore' flap initially described by Wee and Joseph for vaginal reconstruction. Flap can raised either unilaterally or bilaterally depends on defect size and site offers thin and pliable tissue reconstruction for scrotum and also offers excellent color match, the donor site have adequate tissue availability and can close primarily and thus minimal donor site morbidity[5]. The complications includes minor wound complication like flap tip necrosis, hematoma and infection. In resource limited setting, the anteromedial fasciocutaneous flap for reconstruction can be the primary option with satisfactory functional and aesthetic outcome.

References

1. Eke N. Fournier's gangrene: a review of 1726 cases. British Journal of Surgery. 2000 Jun 1; 87(6):718-28.
2. Hallock GG. Scrotal reconstruction following Fournier's gangrene using the medial thigh fasciocutaneous flap. Annals of plastic surgery. 1990 Jan 1; 24(1):86-90.
3. Patel A, Ramsay JW, Whitfield HN. Fournier's gangrene of the scrotum following day case vasectomy. Journal of the Royal Society of Medicine. 1991 Jan84 (1):49.
4. El-Mageed MA. Evaluation of the anteromedial thigh fasciocutaneous flap for scrotal reconstruction. J Plast Reconstr Surg. 2007; 31(2):149-55.
5. Mopuri N, O'Connor EF, Iwuagwu FC. Scrotal reconstruction with modified pudendal thigh flaps. Journal of Plastic, Reconstructive & Aesthetic Surgery. 2016 Feb 29; 69(2):278-83.
6. Wähmann M, Wähmann M, Schütz F, Sohn C, Schott S, Kremer T, Hernekamp JF, Kneser U. Severe Fournier's gangrene—a conjoint challenge of gynaecology and plastic surgery. Journal of Surgical Case Reports. 2017 Dec 8; 2017(12):rjx239.