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Coverage of lower limb necrotizing fasciitis with an omental flap

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Abstract

Necrotizing fasciitis is a severe bacterial infection characterized by rapid tissue destruction, necessitating prompt intervention and a multidisciplinary approach. Surgical debridement and antibiotic therapy are key components of management, while reconstruction surgery plays a vital role in restoring tissue integrity and function. The use of omental flaps has emerged as a promising technique for covering extensive soft-tissue defects, offering well-vascularized tissue with reduced technical challenges. Here, we describe a case of necrotizing fasciitis in a 60-year-old male, where an omental flap was employed for coverage following knee septic arthritis. Despite extensor apparatus destruction necessitating knee arthrodesis, successful reconstruction enabled the patient to regain mobility. This case illustrates the importance of early diagnosis, aggressive treatment, and meticulous surgical intervention in optimizing outcomes for necrotizing fasciitis patients. Collaboration among healthcare professionals is essential in navigating the complexities of this challenging condition.

Keywords: Diagnosis, aggressive treatment, complexities

Introduction

Necrotizing fasciitis, a rapidly progressive bacterial infection affecting the fascial planes, poses a significant clinical challenge due to its aggressive nature and potential for severe morbidity and mortality. Early diagnosis and prompt intervention are crucial for successful outcomes. Management typically involves a combination of surgical debridement and broad-spectrum antibiotics to eradicate the infective organism and prevent further tissue destruction [1].

Successful outcomes in necrotizing fasciitis reconstruction rely on a multidisciplinary approach involving collaboration among surgeons, infectious disease specialists, and wound care teams. Close postoperative monitoring is essential to detect any signs of infection recurrence or wound complications promptly [2].

Reconstruction surgery plays a vital role in restoring form and function following tissue loss and damage caused by necrotizing fasciitis. Techniques such as skin grafts, local tissue flaps, or microsurgery are employed to cover exposed areas and promote wound healing. However, the extent of reconstruction required often depends on the severity of tissue loss and the patient's overall condition.

Among the array of reconstructive options available, the use of an omental flap has emerged as a promising approach for achieving wound coverage and promoting healing in these challenging cases. The omentum provides well-vascularized, malleable tissue for reconstruction of extensive soft-tissue defects and has a long vascular pedicle (35 to 40 cm) with sizable vessels, which reduces some of the potential technical challenges of microsurgery [3, 4].

Herein, we report a case of necrotizing fasciitis in a 60-year-old male with starting point in a knee septic arthritis. Prompt intravenous antibiotherapy was started and arthrocentesis with serial debridement were performed. Figure 1

An omental flap to coverage of the structures was performed and posteriorly grafted with split-thickness skin grafts. Figure 2



Fig 1: After multiple debridement, there was destruction of the extensor apparatus of the knee joint and exposure of femur and tibia.

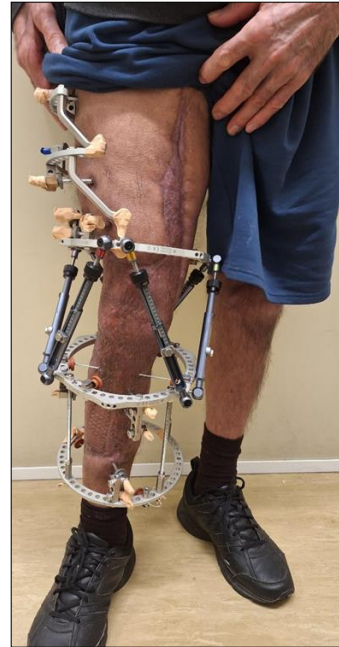


Fig 3: After skin grafting the omental flap and the knee arthrodesis.



Fig 2: An omental flap was performed, with microsurgical anastomosis to the right gastro-omental artery to a branch of the femoral artery and the vein to the saphenous magna.



Fig 4: After one year, with good skin coverage

Due to the destruction of the extensor apparatus of the knee, a knee arthrodesis with an external fixator was performed and subsequently removed after consolidation. Figure 3 After 1 year, the coverage is stable, with the patient being able to stand and ambulate. Figure 4

In summary, necrotizing fasciitis poses a formidable clinical challenge, necessitating early diagnosis, aggressive treatment, and meticulous reconstruction surgery to optimize patient outcomes. Collaboration among healthcare professionals and adherence to evidence-based management protocols are paramount in achieving favorable results for individuals affected by this devastating condition.

Declaration of competing interest

The authors declare no potential conflicts of interest with respect to the research, authorship, or publication of this article. This research received no specific grants from any funding agency in the public, commercial, or not-for-profit sectors.

Patient consent

Informed consent was provided by patient to publish the case details and associated images.

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