Outcomes Of Vacuum-Assisted Closure For The Treatment Of Wounds In The General Hospital Of Aigio: Case Series Of 3 Patients

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Introduction

This retrospective case series describes our experiences and outcomes using the vacuum-assisted closure (VAC) Therapy System for the management of difficult acute and chronic wounds in 3 patients treated in the General Hospital of Aigio.

Methods

A retrospective review of medical records for 3 patients treated with VAC therapy was performed. Demographics, diagnosis, length of treatment, time to closure, time to discharge, type of VAC dressing used, dressing change schedule, therapy settings, and complications were recorded for each patient.

Results

A middle-aged female with a medical history of type 2 diabetes mellitus and arterial hypertension presented to the emergency department of our hospital with a one-week history of pain, swelling, and necrotic changes of the right gluteal region. The infection had progressed to involve the right inguinal fold and lower anterior abdominal wall. The patient was taken emergently to the operating theater for extensive surgical debridement of all necrotic tissues. Postoperatively, a negative pressure wound therapy (VAC) system was applied (fig.1). The VAC system was also used after postoperative surgical site infections in a woman undergoing post-incisional hernia repair and in a male undergoing open inguinal hernia repair.

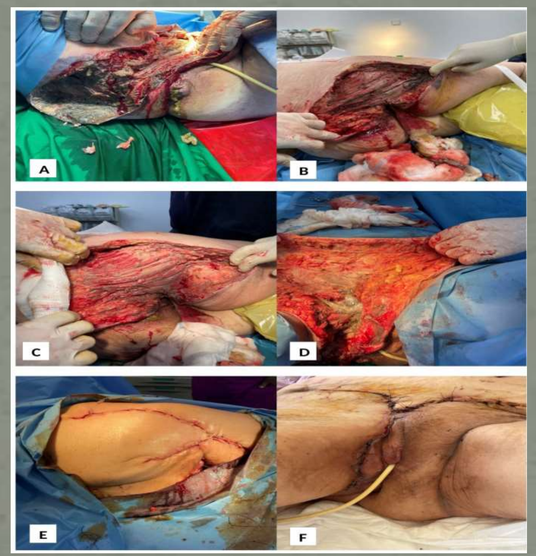

Fig. 1: A middle-aged female with Necrotizing fasciitis

Fig. 2: Necrotizing fasciitis in a male undergoing open inguinal hernia repair

Discussion

Necrotizing fasciitis (NF) is a rapid, severe, and life-threatening soft tissue infection that targets subcutaneous fat tissue, muscle, and fascia. This disease usually occurs in the lower extremities, genitalia, and perineum (Fournier's gangrene, FG). Familiarity with the pathophysiological development of necrotizing fasciitis is essential for the early and rapid identification of clinical manifestations of the disease. The main pathological changes of necrotizing fasciitis are in the superficial fascia. Bacteria colonize and multiply in the superficial fascia, secrete complex enzymes and toxins, and spread rapidly through the fascia. Uncontrolled bacterial proliferation leading to vascular thrombotic microbial invasion with superficial fascial liquefaction and necrosis is the disease progression. Eventually, the skin becomes necrotic due to ischemia, with subcutaneous fat, dermis, and epidermis gangrene. Surgically successful and timely diagnosis is essential in managing this rare and rapidly progressing disease. A high mortality rate of 12–20% has been reported, especially without early surgical intervention. After wound debridement and systemic antibiotics according to bacterial culture, a large open wound usually remains. The wound is traditionally managed with the conventional dry or wet gauze technique before covering it with a skin graft, flap, or musculocutaneous flap. The morbidities associated with using conventional dressing techniques in handling exposed wounds could be extensive. In 1997, Morykwas and Argenta first introduced the VAC based on a porcine model study. VAC by pulling wound edges together to narrow the wound size, promoting granulation tissue formation on the wound bed for skin-grafting, promoting microcirculation, decreasing edema, and removing infectious tissues

Conclusion

The results demonstrate that VAC therapy may be a viable, safe, and effective method of managing these difficult-to-treat situations.