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Reverse Peroneal Artery Perforator Island Flap for Ankle Defect: A Good Versatile Option

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Abstract

The reverse-flow sural flap is an important technique for reconstructing lower extremity defects. This study presents a case report on, ' Reverse Peroneal artery Island Flap for Ankle Defect. The distally based fasciocutaneous flap, which relies on the perforators of the peroneal artery near the ankle and their connections with the superficial sural artery, has been employed to repair moderate-sized defects. However, the skin area served by these lower peroneal perforators is relatively small, so effective flaps must be designed to incorporate their connections with other fascial, fasciocutaneous, or neurofasciocutaneous networks.

Keywords: Surgery, Distally based peroneal flaps, Island Flap, extended reverse sural flaps, foot reconstruction, peroneal artery, reverse peroneal flap.

Introduction

In 1981, Pontén introduced the fasciocutaneous sural flap as a reconstructive solution for soft tissue defects in the lower extremity. This flap is a versatile option for reconstructing the dorsum of the foot, which can be damaged by trauma, diabetes, peripheral vascular disease, or venous insufficiency. The RSAF is regarded as a reliable technique with several benefits

compared to other microsurgical free flaps, including minimal donor site morbidity, shorter surgical times, and the ability to be performed by microsurgeons with less experience.

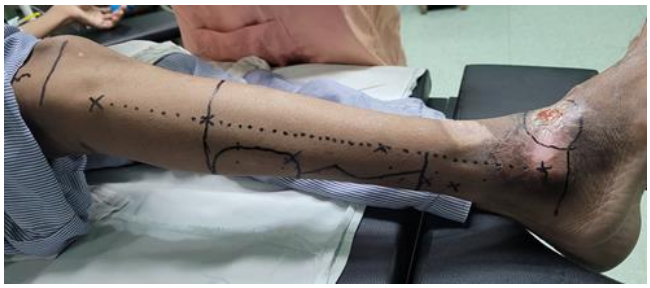

Figure 1: Preoperative marking for reverse peroneal perforator island flap.

Case Report

A 35-year-old male presented to the clinic with a non-healing ulcer located over scar tissue resulting from trauma sustained approximately six months ago. The ulcer was situated in a critical anatomical location, just above a major joint, making it prone to further complications, including impaired mobility and potential infection. Despite standard wound care measures, the ulcer showed no signs of healing, raising concern for both functional and cosmetic outcomes if left untreated.

Upon clinical examination, the ulcer was assessed in terms of its size, depth, and surrounding tissue condition. The surrounding scar tissue, originating from the prior trauma, exhibited signs of fibrosis and poor vascularization, which likely contributed to the delay in wound healing. Additionally, the location of the ulcer, directly over the joint, posed a challenge in terms of both closure and maintaining joint function.

Given the chronicity of the wound and the functional significance of the area involved, it was deemed essential to take prompt, corrective action. After careful consideration of the patient's condition and discussing the available options, the decision was made to proceed with a reverse sural island flap. This surgical technique was selected due to its ability to provide a robust, well-vascularized flap to cover the ulcer and promote healing. The reverse sural island flap, which involves the transfer of tissue from the distal leg, was chosen due to its proximity to the wound site, ensuring both aesthetic and functional outcomes. (Below are intraoperative images, Fig.2,3)

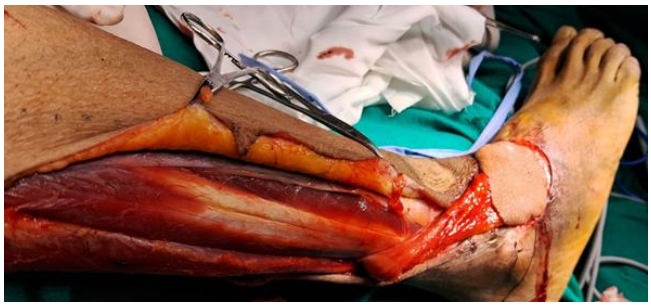

Figure 2:

Figure 3:

Conclusion

The surgical procedure was carefully planned to minimize the risk of complications and preserve joint mobility. Postoperatively, the patient was closely monitored for signs of flap viability, infection, and wound healing. Given the complexity of the wound location, rehabilitation and physiotherapy were initiated to ensure the preservation of joint function and optimal recovery.

This case highlights the importance of addressing chronic non-healing wounds in sensitive anatomical

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areas, where timely and appropriate intervention can significantly impact both the patient's functional outcomes and overall quality of life.(Below is the post-operative image, Fig.4)

Figure 4: Post-operative image

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