

Reconstruction of lower extremity secondary to trauma with advancement flap and skin graft

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ABSTRACT: Lower extremity trauma is a common cause in car accidents, in this article we expose a case of a 20-year-old patient who underwent surgery to perform an advancement flap to reshape the stump and try to cover the structures exposed by the damage of underlying tissues.

Keywords: Lower extremity reconstruction, Lower limb coverage, Skin graft.

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Case Report

Plastic Surgery



One of the main causes of mortality and morbidity in patients with previous trauma is lower extremity injury. There are multiple complications in this kind of patients, including surgical site infection, which can represent a high cost to health institutions and delay rehabilitation for patients. Therefore, lower limb reconstruction is complex, so a multidisciplinary management is necessary in which Plastic Surgery must be involved in most cases due to possible need of soft tissue, adjacent bone and/or vascular reconstruction.¹

Case report

We present the case of a 20-year-old female who was admitted to the emergency due to presenting contused trauma in the right lower extremity secondary to a car accident, which goes to the operating room to perform a above the knee amputation with loss of surrounding soft tissues, primary shutdown is not performed.

She presented to the plastic surgery service for evaluation of the wound (Figure 1A). The patient went to the operating room to perform surgical cleaning and during that time the wound was evaluated, identifying the exposed femoral bone and neurovascular bundle (Figure 1B), which is why closure was performed in a second stage with a dermo-fatty posterior thigh

advancement flap plus free graft application on exposed anterior thigh (Figure 1C). Presenting adequate coverage and good clinical evolution.

Discussion

The Options to rebuild post-amputation stump include a local flap or a free flap. The primary goal of an amputation is to preserve maximum limb length and maintain sensation, durability, and pain-free function.² Even though reconstruction is associated with a higher risk of complications, additional surgeries, and rehospitalization, stump closure with a flap varies depending on the patient, as some will benefit from second intention closure after debridement, while others will require amputation and first intention closure. It has been shown that there is a lower incidence of infection in patients who underwent delayed amputation.^{3,4}

It is very important to be patient when planning the flap placement, since muscle and fasciocutaneous flaps decrease in size over the course of months. Therefore, a period of 6 to 12 months must be waited to evaluate the final appearance of the flap. It is recommended to individualize the realization of the flap according to the etiology, available resources and the experience of the surgeon.⁵

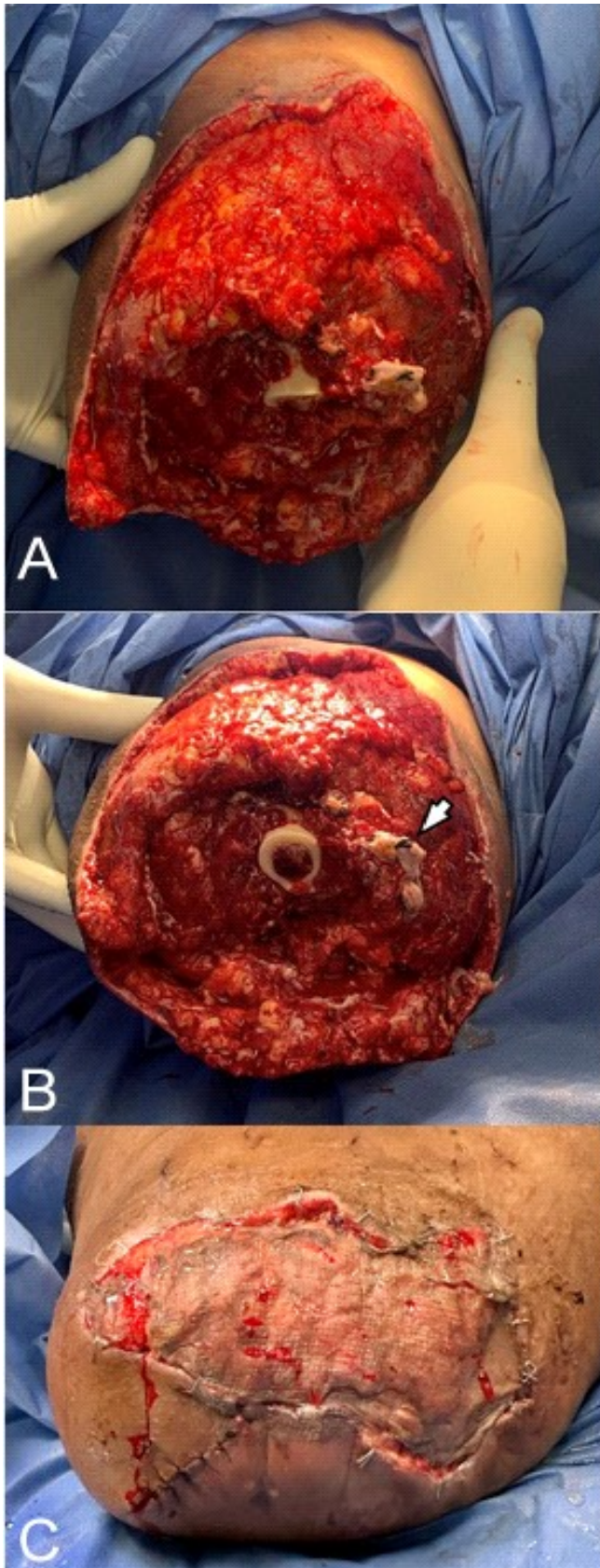


Figure 1. A. Right lower extremity after above the knee amputation, with loss of soft tissues and exposure of the femur (Superior view). B. Right lower extremity after above the knee amputation, with loss of soft tissues and exposure of the femur and the neurovascular bundle pointed with the arrow. C. Right lower extremity with flap closure and free graft application.

Conclusion

Based on the information consulted and the patient's characteristics, it was decided to perform primary surgical cleaning and reconstructive surgery with advancement flap with a free graft placement as a second instance to reduce possible complications such as infection of the stump. In accordance with the results obtained in this case, we consider that the aesthetic approach to the lower extremities should be part of the reconstructive algorithm for the rescue of the lower extremities, since it affects functionality and psychological aspect.

Conflicts of interest

No conflicts of interests.

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