



# Wound treatment using elastic sutures

## *Tratamento de ferida com uso de sutura elástica*

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### ■ ABSTRACT

**Introduction:** Suturing of extensive wounds has always been challenging. Therefore, we present a technique for wound closure that results in faster resolution and better aesthetic quality. **Case report:** A patient underwent open amputation of the left lower limb, with the middle third of the thigh exhibiting an extensive wound, after being hit by a vehicle. We treated the wound with an elastic suture that remained for 7 days. Subsequently, sutures were administered in order to completely close the wound, obtaining a good-quality stump.

**Keywords:** Tensioned sutures; Elastic closure.

### ■ RESUMO

**Introdução:** Feridas extensas sempre foram um desafio para seu fechamento, buscamos mostrar uma técnica que visa um tratamento com resolutividade mais rápida e com uma área de melhor qualidade. **Relato do caso:** paciente submetida à **amputação aberta, após atropelamento, do membro inferior esquerdo, terço médio da coxa** apresentando extensa ferida. Tratamos com a confecção de uma sutura elástica que permaneceu por sete dias, sendo então realizada a sutura para fechamento total da ferida, obtendo um coto de boa qualidade.

**Descritores:** Sutura tensionada; Fechamento elástico.

### INTRODUCTION

Extensive wound closure continues to be a major challenge for plastic surgeons. In 1993, Raskin described a suture technique that uses sterile elastics in order to avoid tension when wounds are closed or the need for using skin grafts to cover parts of the wound left open.

The objective of this article was to demonstrate the elastic suture as an effective, inexpensive, and rapidly executed technique for closing extensive wounds.

### CASE REPORT

A 29-year-old female patient who had no comorbidities was hit by a tractor and underwent amputation of the middle third of the left thigh. It was opted to leave the stump open because of a large spacing of the wound edges (Figure 1).

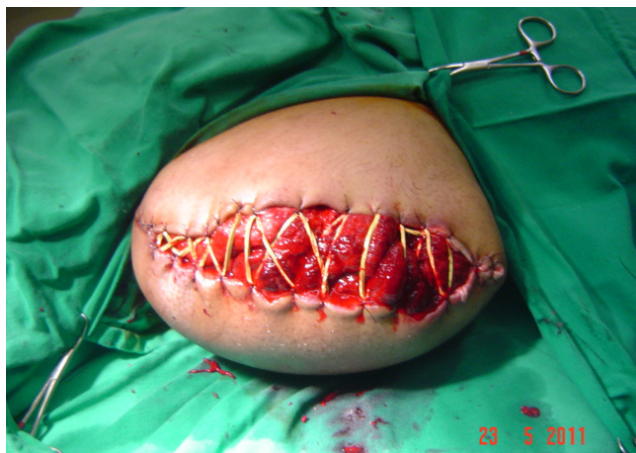


Figure 1. Open stump.

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The procedure comprised two surgical steps. In the first step, a small dissection of the flap was performed (approximately 2 cm) and the opposing edges of the wound were approximated via circular elastic rubber bands. The technique comprises performing a suture that covers the elastic band and one of the wound vertices. The rubber is then folded onto itself to form an X, and each side is fixed with a point at the wound edges until reaching the other vertex. We were careful not to pull the elastic too much in order to avoid excessive tension on the skin, even though some areas remained exposed (Figure 2).



**Figure 2.** Elastic sutures.

In the second surgical step, performed 1 week after the first, the edema in the amputation stump was expressively reduced. Thus, simple sutures of points in an X were performed, successfully achieving total closure of the injury without needing to remove the flap (Figure 3).



**Figure 3.** Total closure of the wound after 7 days.

The clinical course of the patient evolved without post-operative complications.

## DISCUSSION

Despite the fact that elastic sutures have great practical applicability in suturing extensive wounds, only few reports have been published on this topic in the Brazilian scientific literature. This procedure has been previously used for treating upper limb compartment syndrome by approximating the aponeuroses by using elastic rubber bands<sup>1</sup>.

In a series of 21 cases, Petroianu reported complete wound closure in 100% of the patients, without requiring other procedures or auxiliary devices. Similar results were obtained in another study in which secondary skin sutures were possible without the need for grafting in all of the cases under study<sup>2</sup>. No major treatment complications occurred<sup>3</sup>.

When using elastic sutures, the treatment costs are lower and the aesthetic quality is higher than those with skin grafting, which is an alternative technique usually used for extensive wound closure.

## CONCLUSION

The use of elastic sutures proved to be a safe, functionally effective, easy-to-perform, and low-cost technique for extensive wound closure. It does not require the use of donor areas such as skin grafts and results in a more-resistant region, thus preventing the use of possible prostheses.

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