

SURGICAL TREATMENT OF COMPLEX WOUNDS

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Abstract: **INTRODUCTION:** Wound is defined as the loss of skin coverage, not only of the skin, but also of the subcutaneous tissues, muscles and bones. Wounds can be conceptualized as “breaks in the continuity of body structures” or as “rupture of normal tissue structures and functions”. They can be caused by traumas that have an internal or external origin to the affected tissue and range from an acute and controlled injury to a generalized aggression **METHODOLOGY:** This is a literature review, of a narrative type, which aims to describe the surgical treatment of wounds complex, from a theoretical point of view, through materials that have already been published on the topic in question, through analysis and interpretation of the literature. The inclusion criteria were: articles in Portuguese and English; published between 2019 and 2024 and which addressed the themes proposed for this research, review-type studies made available in full. The exclusion criteria were: duplicate articles, available in abstract form, which did not directly address the proposal studied and which did not meet the other inclusion criteria. **RESULTS AND DISCUSSION:** Traumatic wounds are caused by severe trauma, resulting in injuries with extensive skin loss and damage to tissue viability, such as detachment wounds on the lower limbs, amputations of limbs and fingers, as well as contusions, lacerations and large crushes, with tissue exposure. nobles. More extensive and deeper burns can be considered complex wounds, but, traditionally, they are separated and treated in specialized centers. Complicated surgical wounds result from the dehiscence of incisions from previous surgery, generally associated with infection or tissue ischemia, and aggravated by the patients’ clinical conditions. **CONCLUSION:** The proposed article reveals that in many cases only therapeutic treatment is instituted, leaving aside preventive therapy, a factor that

in the long term, assiduously results in the worsening of the patient's clinical conditions. When analyzing health services, it is clear that the implementation of preventive therapies contributes greatly to accelerating hospital discharge, as well as promoting socioeconomic benefits for the services used and the patients in question.

Keywords: "Wounds, "surgeries", "complex."

INTRODUCTION

Wound treatment is probably one of the oldest areas of Medicine. Archaeological evidence indicates that, already in prehistoric times, extracts of plants, fruits, mud, water and ice were applied to wounds. The ancient Egyptians used strips of cloth to hold the edges of the wound together, as they believed that a closed wound healed more quickly than an open one (Forrest RD 1982). In the fourth century BC, Hippocrates advised the treatment of wounds: "Melt the fat of an old pig and mix it with resin and bitumen, spread it on an old piece of clothing, heat it in the fire, apply it as a bandage. Ambroise Pare, In the 16th century, he introduced the need for debridement, approximation of the edges and use of dressings. Lister, in the 19th century, developed the concept of antisepsis of the skin and surgical material, contributing to the resolution of wounds (Forrest RD 1982).

Wound is defined as the loss of skin coverage, not only of the skin, but also of the subcutaneous tissues, muscles and bones. Wounds can be conceptualized as "breaks in the continuity of body structures" or as "rupture of normal tissue structures and functions". They can be caused by trauma that originates internally or externally to the affected tissue and ranges from an acute, controlled injury to generalized aggression (Morris JP et al, 2001).

With the increase in the population's life expectancy, there is an increasing incidence

of diseases that accompany aging (heart disease, neoplasms, diabetes mellitus, high blood pressure). Such conditions increase the prevalence and complexity of wounds and delay their resolution. Today, trauma is the main cause of death that can be prevented and affects, mainly, economically active adults, with great social impact. This also contributes to the emergence of serious wounds, which require complicated and prolonged treatment. With the increase in longevity and the prevalence of trauma victims in hospitals, the increase in the frequency of so-called "difficult" wounds has attracted the attention not only of doctors and nurses, but also of health administrators, concerned about the impact of costs of treating this disease. In the hospital, care for these patients is generally associated with prolonged hospitalization, use of expensive antibiotics and the need for daily dressings, with the mobilization of a large team of specialized professionals (Ferreira MC et a, 2006).

Traumatic wounds are caused by severe trauma, resulting in injuries with extensive skin loss and damage to tissue viability, such as detachment wounds on the lower limbs, amputations of limbs and fingers, as well as contusions, lacerations and large crushes, with tissue exposure. nobles. More extensive and deeper burns can be considered complex wounds, but, traditionally, they are separated and treated in specialized centers.

Complicated surgical wounds result from the dehiscence of incisions from previous surgery, generally associated with infection or tissue ischemia, and aggravated by the patients' clinical conditions (Lee K et al. 2009). The objective of this study is to report on wounds and treatment, analyzing their characteristics, types of injuries and procedures adopted, with an emphasis on surgical treatment.

METHODOLOGY

This is a literature review, of a narrative type, which aims to describe the surgical treatment of complex wounds, from a theoretical point of view, through materials that have already been published on the topic in question, through analysis and interpretation of the literature. The inclusion criteria were: articles in Portuguese and English; published between 2019 and 2024 and which addressed the themes proposed for this research, review-type studies made available in full. The exclusion criteria were: duplicate articles, available in abstract form, which did not directly address the proposal studied and which did not meet the other inclusion criteria.

The review was carried out from November 2023 to March 2024, through searches in the databases Virtual Health Library (VHL), Latin American and Caribbean Literature in Health Sciences (LILACS), National Institutes of Health's Library of Medicine (PubMed) and Scientific Electronic Library Online (SciELO). The following descriptors were used: "Wounds", "surgery", "complex" in order to find articles relevant to the subject covered. After the selection criteria, 4 articles remained that were subjected to thorough reading for data collection. The results were presented in a descriptive way, divided into thematic categories addressing: describing the subtitles or points that were mentioned in the discussion.

DISCUSSION

The definition and classification of complex wounds is mainly based on their etiology. According to this classification, the distribution of complex wounds in the present study revealed the predominance of four types: pressure ulcers (33%), traumatic wounds (30%), complicated surgical wounds (16%) and necrotizing wounds (10 %) (Ferreira MC et al, 2006).

Let's mention some complex wounds: Pressure ulcers are characterized as a typical phenomenon, being considered one of the main prognostic complications of patients hospitalized in the ICU. Quantitatively, patients without intensive care are the most affected, as they are already physiologically compromised (BORGHARDT AT, 2016).

The factors that predispose the occurrence of these injuries are fragmented into primary, covering pressure, friction and friction performed on the tissues, or secondary, which include the affected state of mobility, decreased sensorimotor function, imbalance of nutritional characteristics, advanced age, changes in the hematopoietic scope, diabetes as an associated underlying clinical condition, circulatory dysfunction, use of medications and incidence of humidity. From the above, it is essential to understand that LPP's have associated intrinsic and extrinsic factors as their etiology (TEIXEIRA AFO, 2017).

In terms of treatment, two aspects are adopted, prevention and therapy for the already existing lesion. In a preventive context, longitudinal education of healthcare professionals is one of the safest and most viable measures to reduce the risk of a patient developing a Pressure Ulcer. In view of the above, in the health segment, it is necessary to have tools that seek to reflect on the effective transformation of professional practice and patient quality, simplified in attitudes such as monitoring changes in decubitus, in addition to assiduous cleaning of the contact region between the bony prominence and the hospital bed. However, taking into consideration, complementary preventive therapies, it is noted that in public institutions there is a low investment in team qualification and in the acquisition of new technologies available on the market, technologies that have been shown to be positive in relation to reducing the appearance of these injuries (SOUZA MC,

et al., 2020).

A Burn is considered an injury generated by an external agent, which can originate from different sources. The trauma resulting from this event poses a timeless and common public health problem in Brazil. In addition to being a factor related to the increase in mortality from external causes, it triggers a decrease in the quality of life of its survivors, especially to the detriment of the consequences it produces (MARINHO LP, et al., 2018). Due to scientific improvements in the field of health, some aspects have improved in their interpretation and management, such as infections, early resuscitation, surgical approaches, among others.

However, despite continued evolution in the improvement of skin substitutes, no alternative therapy can be considered a “gold standard”, as each case must take into consideration, the etiology, depth, extent, and clinical conditions that arise. impact on the burned patient. All of these therapies have, as a direct consequence, a reduction in hospitalization time and a significant improvement in the quality of life of the injured person (LIU HF, et al., 2017).

Diabetes Mellitus (DM) is considered one of the most prevalent diseases in public health, making it a major problem to be resolved. It is a chronic disorder with high morbidity and mortality rates, which affects not only a portion of the population, and its causes are related to environmental and hereditary factors. Epidemiologically, its prevalence has been increasing in recent years, a factor that denotes the importance of effective public health policies so that these cases can be reduced (MINISTRY OF HEALTH, 2016).

The diabetic foot is expressed as one of the main causes of amputation, however, it can be prevented if identified at an early stage. Therefore, it is essential to implement preventive measures in medical consultations, asking the patient to view their lower limbs,

especially their feet. From this, there is the possibility of carrying out adjuvant treatments to the ongoing infectious and necrotic process, thus reducing the need to amputate the limb (VIDAL L, 2009).

The most important aspect in the treatment of complex wounds is the appropriate approach, although often aggressive. Reconstruction to close the wound must be performed as soon as the wound bed is suitable for coverage¹. In complex wounds, the local and systemic factors of the wound, as well as the patient's condition, must be evaluated, which are decisive for the success of the treatment. Local factors include depth (affected tissues), local edema, skeletal stability, blood supply, presence of bacterial infection and quality of the recipient bed. Systemic factors include cardiovascular and pulmonary status, immune status, debilitating chronic conditions, diabetes, and smoking. Without a doubt, one of the most important systemic assessments is to determine whether any systemic pathology in the patient is the cause of the wound. Local factors can be acute (e.g., trauma, infection) or chronic (e.g., chronic osteomyelitis, vascular insufficiency). Surgical treatment includes preliminary and preparatory procedures for definitive closure of the wound (Caldwell MD, 2010).

DEBRIDEMENT

It is the surgical procedure used to remove necrotic, devitalized tissues and dirt. In chronic wounds, the wound bed must be cleaned and prepared to receive definitive closure. This preparation can be achieved clinically as long as the contamination and necrosis of the lesion do not have characteristics that require surgical debridement to be carried out, which must ideally be done with all aseptic care, light and appropriate material. An effective debridement is the most important factor for preparing a bed,

when all necrotic material must be removed until bleeding, well-irrigated tissue is found. Excessive removal is unnecessary. Any foreign body must be removed from the wound and tissues without blood must also be resected, as well as any tissue without vitality, be it muscle that does not bleed or necrotic bone. In patients with cellulitis, erysipelas, abscess or other type of adjacent soft tissue infection, primary closure of the lesion is inadvisable. In this type of situation, in addition to wound culture, negative pressure therapy (vacuum) and appropriate antibiotic therapy are currently used². The successful closure of a complex wound depends on a well-performed debridement, with the removal of all necrotic and infected material. If this first stage of treatment is successful, the chances of integrating a skin graft or adapting skin flaps are greater, and the rate of dehiscence and recurrence of lesions drops considerably (Attinger CE et al. 2006).

OSTECTOMIES

These are the removal of bone fragments or portions that must be indicated when there is infection or when there is a bone prominence causing the wound (pressure ulcer). Radical ostectomy must be avoided, as it can cause additional problems such as excessive bleeding, skeletal instability and redistribution of pressure to adjacent points. In pressure ulcers, resection of bony prominences is an important part of treatment. In ischial ulcers, there is much controversy about the type of ostectomy that must be performed. Some authors recommend unilateral total ischiectomy. Although the recurrence rate is reduced, reaching between 38 and 3%, there is an increased chance of formation of a new contralateral ulcer. In cases where bilateral ischiectomy is performed, pressure redistribution can cause perineal ulcers, with the risk of formation of urethral fistulas.

Permanent closure, in addition to promoting the protection of the ulcerated area, the resolution of complex wounds reduces protein loss from the wound, prevents sepsis and osteomyelitis, improves hygiene, allows the patient's social rehabilitation and reduces costs and treatment time for patients with chronic wounds (Degreef HJ, 1998).

WOUND CLOSURE

Wound closure must be performed as soon as possible in patients who present clinical conditions to undergo the surgical procedure and the wound bed is appropriate. When establishing the surgical schedule, the surgeon must plan the coverage that is as stable as possible, using the best technique for that location. The possibility of future ulcerations must also be taken into consideration, seeking to preserve alternatives for new closure procedures. The plastic surgeon's main options are skin grafts, local flaps (cutaneous, fasciocutaneous or musculocutaneous) and free flaps¹. The choice between the different options must take into consideration, the location, dimensions and depth of the ulcer, as well as whether previous procedures have already been carried out. The skin graft donor area must be adequately treated to avoid the creation of a new lesion. Sutures must be kept without tension and suture lines must be avoided at support points (Jones KR et al, 2007).

FINAL CONSIDERATIONS

Considering all the statements reported, it can be inferred that complex wounds are directly responsible for the increase in exposure time in treatment units, as well as being capable of providing considerable reductions in the patient's quality of life. The proposed article reveals that in many cases only therapeutic treatment is instituted, leaving aside preventive therapy, a factor that

in the long term, assiduously results in the worsening of the patient's clinical conditions. When analyzing health services, it is clear that the implementation of preventive therapies

contributes greatly to accelerating hospital discharge, as well as promoting socioeconomic benefits for the services used and the patients in question.

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