

Which is the Role of Plastic Surgeon in the Orthoplastic Surgery?

Michela Massa* and Marco Ghiglione

Department of Plastic and Reconstructive Surgery, SS Antonio e Biagio e Cesare Arrigo Hospital, Italy

***Corresponding author:** Michela Massa, Department of Plastic and Reconstructive Surgery, SS Antonio e Biagio e Cesare Arrigo Hospital, Via Venezia 16, Alessandria, Italy

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Editorial

In cases of lower limbs injuries a question should be done: Which is the role of plastic surgeon? In which cases plastic surgeon is essential? The restoration of cutaneous integrity has been considered a primary surgical requirement for ages in cases of trauma of lower limbs in order to obtain a satisfactory healing of deep tissues [1]. However not only the figure of plastic surgeon is necessary, also vascular surgeon, neurologist, and radiologist can contribute extensively, suggesting an interdisciplinary approach among specialties. The presence of all these actors allows a wider viewpoint essential to evaluate the “personality” of the lesion. The diagnostic overview that includes blood chemistry and radiological exams should be always associated to the clinical overview. The mechanism of an high energy traumatic event leading to an injury such as vascular or nervous damages or the compartmental syndrome, the coexisting fractures or pathologies should be always evaluated. Furthermore an accurate clinical exam of the limbs should be conducted, investigating the presence of tumefaction, bruise, functional impotence, blisters, thermal status and pain.

The classification of the character of a lesion is not always automatic. Open lesions are generally characterized by a relative early diagnosis. At the clinical exam the kind of traumatic event and the contact area, the applied strength, force direction, contamination of the wound, patient general physical conditions should be investigated. On the other hand, closed lesions present only the necrotic cutaneous layer, therefore the inaccessibility of subcutaneous soft tissues results in a great diagnostic difficulty, since exams enabling to detect the extension of the involved tissues are still not disposable nowadays. Furthermore in cases of closed lesions, the manifestation or the coexistence of ischemia, inflammatory reaction, trans-endothelial plasma loss, interstitial oedema, increasing pressure of the interstitial fluid, compromised microcirculation and neuromuscular function can lead to a compartment syndrome. If not adequately and rapidly treated, the acute compartment syndrome can lead to a situation of massive muscular necrosis. That situation requires multiple fasciotomies releasing all four compartments of the lower limb. Lower limbs injuries are always in evolution. Characteristics to evaluate are the type of trauma, the presence of vascular or nervous lesions, muscular

necrosis, tissue loss, ischemia, microcirculation injury and the surgical access.

The knowledge of cutaneous irroration [2-4] is very important to preserve vascular territories of the leg when performing a surgical access, in order to avoid cutaneous necrosis and loss of tissue. Accordingly to Salmon et al. [5], incisions should be made along the major axis and not excessively long. The compartment syndrome and sometimes the surgical access can convert a closed lesion in a open lesion with soft tissues involvement. Consequently we need to plan diagnostic and therapeutic procedures for an open lesion with compromised underlying soft tissue and bone exposure. The lesion can represent a medical emergency requiring immediate surgical treatment or can be surgically treated in a second time. In both cases the successful behaviour is the multidisciplinary approach.

In the true emergency, the term “multidisciplinarity” means that all actors are necessary. Exams and investigations have to be reliable, briefly performed and associated with a correct informed consent. On the contrary in the delayed emergency, the multidisciplinary approach should be always a possible solution. After an overview of the lesion, we have to draft a treatment protocol, taking into account the fundamental principle to leave nothing exposed; consequently it is necessary to cover every loss of tissue. However before any surgical maneuver an accurate cleaning should be performed to remove extraneous and potentially infected materials and exudate drainage; subsequently a surgical debridement with total removal of necrotic tissue, reducing bacterial contamination. Furthermore a precise evaluation of extension and depth of the lesion has to be performed. Later the lesion should be directly sutured, however if it is not possible or in cases of open lesion or extended loss of tissue, soft tissue condition can be improved by promoting the production of granulation tissue. In this phase the individual response can be facilitated with different strategies, preparing the site for later reconstruction.

Advanced or traditional medications can be used or particular therapies such as negative pressure therapy, fat grafting, platelet rich plasma (PRP). When obtained a clean and vital wound bed,

covering surgical operations can be performed. They generally consist of cutaneous graft, made of dermo-epidermal layer when the lesion bed has good connective tissue; local peninsular or insular fasciocutaneous flaps, neurocutaneous flaps, propeller flaps and free microvascular flaps in more complex cases. Therefore aiming to achieve a real development of orthoplastic surgery means that we can detect the lesion behavior, operate in emergency if possible, perform adequate and valuable medications and local therapies, obtain a rapid healing and restoration of functionality, with a appropriate, safer and comfortable method assuring the best care for the patient.

So the orthoplastic surgery can be considered a new and actual discipline involving numerous specialities with a multidisciplinary approach and the role of plastic surgeon become crucial when

facing challenging situations of traumatic open and closed lesion of the lower limbs.

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