

Complex Tibial Pylon Fractures: Case report of combined treatment in a high-risk patient

Mauro R Vivas*, Márquez Grand Daniel, Greco Andrés, Cordano Osvaldo

Department of Bone Reconstruction of the orthopedic and traumatology service Hospital. Dr. Eduardo Wilde, Bs. As. Argentina

*Corresponding Author: Mauro Vivas, Department of Bone Reconstruction of the orthopedic and traumatology service Hospital. Dr. Eduardo Wilde, Bs. As. Argentina.

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Abstract

Biotechnology is advancing by leaps and bounds to achieve a better recovery with the least possible morbidity in patients with complex joint fractures.

Locking screw fixation systems with hydroxyapatite and low contact molded plates have been improved to obtain the best fixation without compromising bone vascularization. Implant placement has also been promoted with minimal approaches, such as MIPO or MISS techniques, thus avoiding damage to soft tissue. However, the complexity of the fracture, our main enemy and is the terrain where we must work, the only factor that cannot be modified.

Keywords: high-risk patient; tibial Pylon; osteomyelitis

Introduction

Biotechnology is advancing by leaps and bounds to achieve a better recovery with the least possible morbidity in patients with complex joint fractures.

Locking screw fixation systems with hydroxyapatite and low contact molded plates have been improved to obtain the best fixation without compromising bone vascularization. Implant placement has also been promoted with minimal approaches, such as MIPO or MISS techniques, thus avoiding damage to soft tissue. However, the complexity of the fracture, our main enemy and is the terrain where we must work, the only factor that cannot be modified.

The difficulty that an obese patient brings us, diabetes mellitus, with peripheral vascular disease or even an alteration in soft tissues are usually the main cause of complication and failure in the synthesis of these fractures. The complication rate due to soft tissue involvement usually reaches 50% in this class of patients, and many of them end up with osteomyelitis [1].

Reviewing previous publications, we can see that the surgical treatment of tibial pylon fractures has presented a high rate of complications in general terms (up to 30% infection, 20% pseudoarthrosis, 50% osteoarthritis, 6% amputations, 80% complications of the wound with only 25/30% of excellent or good results) [3.4.5].

A direct correlation was also found between the degree of soft tissue involvement and joint impairment with respect to the incidence of early and late complications (42.9%), as well as other directly related variables such as the experience of the surgeon, treatment initial soft tissue and adherence to the rehabilitation protocol [6]. On the other hand, Dr.

Castells published in the Journal of the Argentine Society of Orthopedics and Traumatology in 1994 that he had to reoperate 21 of 58 patients who had complex fractures of the tibial pylon [2].

The objective of the presentation of this case is to demonstrate the usefulness of a combined treatment with minimal osteosynthesis supported by a circular fixator to support the implant and allow for early loading.

Presentation of the case

58-year-old male patient by bricklayer profession who suffers a 6-meter fall of height during his work tasks, which produces a fracture of the right tibial pylon 42.C2 of the AO classification of Müller.

As background, the patient is obese, hypertensive, insulin-requiring diabetic associated with a metabolic syndrome and hypercholesterolemia. In addition we must add that the patient is not very responsible with the control of his comorbidities.

During the regional examination of the right leg, pain, deformity and skin changes were observed due to its chronic peripheral vascular disease.

Despite the fact that she was placed on trans-calcaneal skeletal traction at admission to control soft tissue, she presented internal malleolar flietens 24 hours after trauma.

Due to the great compromise of soft tissue, comorbidities and lack of adherence to the patient's previous treatments, it was decided to place an osteosynthesis under the MIPO technique supported by a circular mount.

During the post-operative control, ambulation with crutches was indicated after 72 hours. After improvement of edema and soft tissue. At 21 days,

partial load with assistance was indicated, at 60 days full load and at 90 days the circular fixator was removed.

The patient was discharged traumatic at 5 months with full load and without pain while walking.



Discussion

Each fixation method has its advantages and disadvantages, so you have to keep them in mind when deciding which implant to use, and you must also keep in mind the type of patient you have to treat.

In this case, we consider that the combination of two methods allows enhancing the advantages of these implants, thus reducing possible complications. Internal fixation allowed us to obtain an anatomic reduction, while the circular fixator provided mechanical support, reducing the need for a broader approach, and with the least possible damage to soft tissues.

The possibility of performing an early gait in patients with chronic peripheral vascular disease allows not only a speedy recovery, but also avoids the possible complications that can occur in patients with multiple comorbidities.

Conclusion

We believe that it is possible to obtain better results by reducing complications from the combination of methods. The combination of the reduction properties of osteosynthesis associated with the mechanical support of external fixation is a good alternative in the treatment of complex joint fractures in patients with previous comorbidities.

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