

Arthroscopic reduction and percutaneous fixation of an adult tillaux fracture of the ankle: case report

Redução artroscópica e fixação percutânea de fratura de Tillaux em adulto: relato de caso

Francisco Gonçalves¹, Mafalda Batista¹, Mónica Vasconcelos¹, Catarina Bispo¹, Filipe Machado¹, Sofia Rodrigues¹, Gonçalo Lavaredas¹, Amílcar Araújo¹, Virgílio Fonseca¹, Virgílio Severino¹

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ABSTRACT

Adult isolated Tillaux fractures are rare. It is a case of an adult female with a Tillaux fracture. The fracture was managed surgically, with an arthroscopically-assisted reduction and percutaneous fixation. Arthroscopy was helpful to achieve anatomical reduction of the fracture.

RESUMO

As fraturas de Tillaux em adultos, isoladas, são raras. Trata-se de um caso de uma mulher com uma fratura de Tillaux. A fratura foi tratada cirurgicamente, com redução assistida por artroscopia e fixação percutânea. A artroscopia foi útil para atingir redução anatómica da fratura.

INTRODUCTION

A Tillaux Fracture is defined as an avulsion-type fracture, caused by the pull of the anterior inferior tibiofibular ligament.^(1,2)

These fractures have been described as uncommon ankle injuries in adolescents and there are few reports in adults.⁽³⁻⁶⁾

The first report of arthroscopically-assisted reduction and fixation of an adult Tillaux fracture was in 1997 – the fracture was visualized and reduced arthroscopically, the margins of the fracture debrided via an extended anterolateral portal, and then fixed with interfragmentary screws.⁽⁴⁾

The present report describes a case of isolated Tillaux fracture in an adult, treated operatively, by arthroscopy.

CASE REPORT

A 59-year-old female sustained a twisting injury of her left ankle while climbing stairs. The exact mechanism of injury was unclear, but apparently the injury was caused by a supination/external rotation force. The patient had incapacity to weight bearing, with pain and swelling over the anterior aspect of the ankle. The patient had clinical history of diabetes mellitus.

¹ Hospital Ortopédico Sant'Iago do Outao, Centro Hospitalar de Setúbal, Portugal.

Corresponding author:

Francisco Gonçalves
Nossa Senhora da Anunciada,
2900-182 Setúbal
E-mail: franciscomprg@hotmail.com

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At clinical examination of the ankle, she presented tumefaction and tenderness of the antero-lateral aspect of the ankle, with painful range of motion, and incapacity to weight bearing. There were no signs of neurovascular compromise.

The antero-posterior and lateral X-rays revealed a fracture of the antero-lateral part of the distal tibia. A computed tomography (CT) scan was carried out to confirm the diagnosis, to evaluate the fracture diastasis, and to search for additional injuries. It confirmed the anterolateral distal tibia fracture, with a displacement of 3mm. No other injuries were found in the CT (Figure 1).



Figure 1. Coronal reconstruction of CT scan

Surgery was performed 2 days after the injury. The surgery was performed by an arthroscopic approach, using the antero-lateral and antero-medial ankle portals. The fracture was reduced with a grasper, fixed provisionally with a k-wire, and osteosynthesis was performed with a cannulated double compression screw, introduced through the antero-lateral portal. Reduction and screw position were confirmed both by arthroscopy and by fluoroscopy (Figure 2).

Sutures were removed and ankle active movement was started two weeks after surgery. Partial weight bearing started four weeks after surgery and full weight bearing at the 8th post-op week.

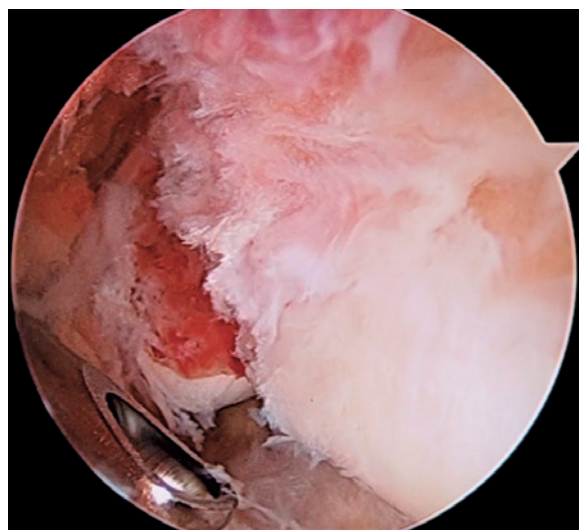


Figure 2. Arthroscopic visualization of the fracture

At 9 months follow-up, the x-ray shows consolidation of the fracture. The patient is asymptomatic, with no tenderness at the ankle, the range of motion of the right ankle is symmetrical in comparison to the left ankle, and has no restriction doing her physical activities (Figure 3).



Figure 3. Post-operative x-ray

COMMENTS

Tillaux fractures in adults are rare, especially when isolated.

A CT scan is usually an important tool, not only to confirm the diagnosis, but also to visualize the fracture orientation and displacement. It's also valuable to search for other injuries in the ankle.

Arthroscopy is potentially useful in the majority of intraarticular fractures. Arthroscopic approaches are associated with less post-operative skin complications. This approach was helpful, not only to achieve a better reduction of the fracture, but also to minimize the risk of skin complications, given the fact that the patient was diabetic.

It's important to diagnose and adequately treat these injuries in order to prevent further instability and arthritis.

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