

Arthroscopic Repair Of Tibial Spine Avulsion Fracture Using Bioabsorbable Sutures

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INTRODUCTION:

Adolescents are vulnerable to tibial spine avulsion due to the weakness of their apophyses. Previously, open treatment has been the mainstay of treatment. However, complications from arthrotomy such as, prolonged recovery time and arthrofibrosis have also been well documented(1). In recent times, arthroscopic surgical techniques, has become a popular choice of treatment.

CASE REPORT

A 17 year old patient sustained a right ACL avulsion fracture. He underwent an arthroscopic reduction and fixation of the ACL tibial avulsion fracture using a suture hook loaded with No. 1 polydioxanone (PDS). These sutures were then passed through three separate tibial tunnels made in an inverted triangular fashion over the proximal aspect of the anteromedial surface of the tibia. The suture pull-outs were anchored at the anteriomedial aspect of the proximal tibia using an endobutton.

DISCUSSIONS:

In recent times, arthroscopic techniques are considered gold standard in the management of these fractures as there is better visualisation of the intraarticular fragment, which allowed more anatomical reduction of the fracture. From a biomechanical point, the strength of pull-out suture technique using absorbable sutures shown to be slightly inferior to antegrade screw fixation(2). In adolescents however, this technique has been shown to produce complete union of fracture with good results

CONCLUSION:

In this patient, an arthroscopic reduction of the avulsed ACL fracture using suture pull through is selected. This technique provides anatomical reduction of the fracture fragment and has shown to have good outcome in adolescents. There is also no need for a second surgery for

hardware removal as the sutures used are bioabsorbable.

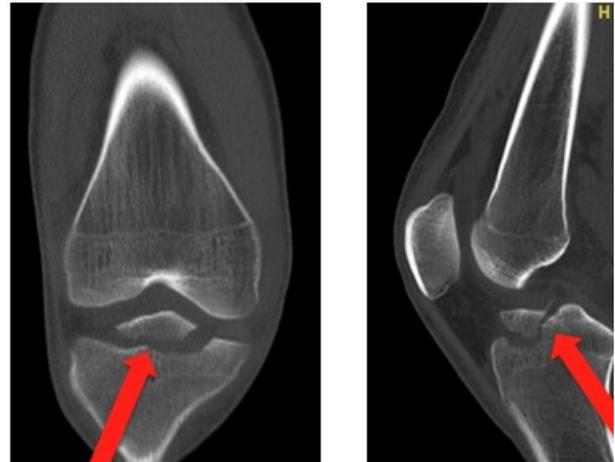


Figure 1 - ACL avulsion seen on CT scan

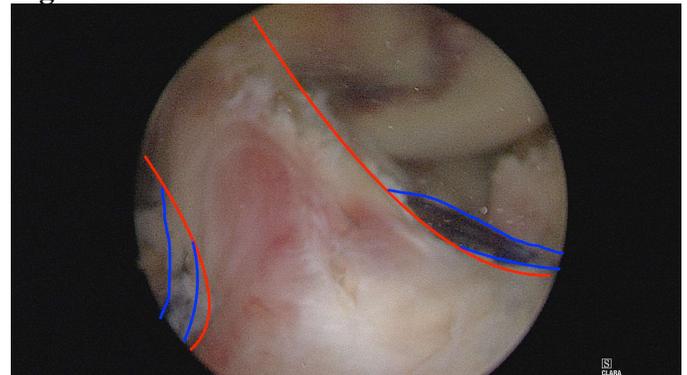


Figure 2: Outline of the PDS suture (blue line) over the reduced ACL avulsion (red line)

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1. Osti, L., Buda, M. et al (2016). Arthroscopic treatment of tibial eminence fracture: a systematic review of different fixation methods. *Br Med Bull*, 118(1), 73-90.
2. Verdano, M. A., Pellegrini, A., Lunini, E., Tonino, P., & Ceccarelli, F. (2014). Arthroscopic absorbable suture fixation for tibial spine fractures. *Arthrosc Tech*, 3(1), e45-48.