

Avulsion Fracture of Anterior Tibial Tuberosity in a Sporty Adolescent

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Abstract

Case Report

Avulsion fracture of the anterior tibial tuberosity is a rare lesion of the adolescent at the end of growth. We report the observation of a 16-year-old adolescent operated on anterior tibial tuberosity (ATT) tearing. The trauma occurred during a sport activity (basketball). The treatment consisted in reducing the ATT in the open and then fixing it by screwing. The result, after rehabilitation, was good.

Keywords: Avulsion, Tibial tuberosity.

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INTRODUCTION

The avulsion of the anterior tibial tuberosity is a rare lesion of the adolescent athlete, it constitutes 0.4 to 11% of the epiphyseal lesions, it affects especially the boy. The pathophysiological mechanism involved is the sudden contraction of the quadriceps.

OBSERVATIONS

A 16-year-old boy, with no pathological history, was a victim of a sport activity during a

basketball match; he has a strained knee extension mechanism blocked on the ground. Clinical examination revealed edema with regard to ATT, a deficit of active extension of the knee. Standard radiology has demonstrated an avulsion of Ogden type IIIA TTA. The patient was urgently operated on; a surgical reduction of the fragment was made on him, a contention by a cortical screw. The patellar tendon was intact. The evolution over 6 months found normal knee mobility and a consolidated fracture.

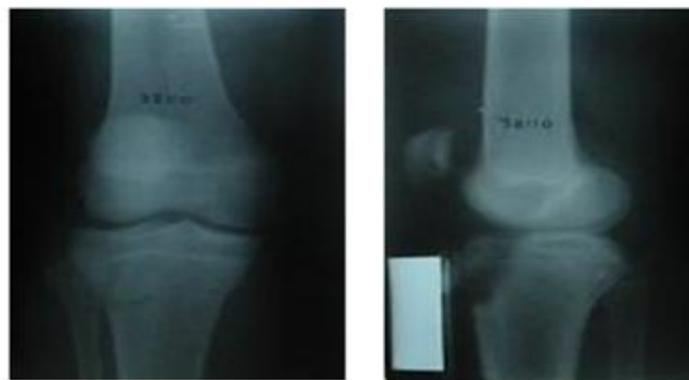


Fig-1: Standard X-ray of the knee in front and profile views shows Avulsion of the ATT Stage 3 of Ogden



Fig-2: Standard X-ray of the knee front and profile views shows screwing of the ATT

DISCUSSION

ATT avulsion is a rare lesion [1, 2]. It occurs mainly in boys aged 14 to 17 because of structural changes in the process at the end of growth [3, 4]. The etiologies are dominated by sport (basketball and combat sports) and spontaneous fractures (Osgood-Schlatter or metaphyseal dysplasia) [5, 6]. The latter is an avulsion of the anterior part of the epiphysis, it alters the biomechanical response of the tuberosity cartilage by increasing the proportion of cartilage in column compared to fibrocartilage [12,7].

The treatment consists of an immobilization in extension for 6 weeks for non-displaced fractures [1, 2], and screwing or bracing for displaced forms [11, 8]. Mobility is recovered regardless of the mode of synthesis or immobilization [10, 9]. Rarely, the growth disorders such as knee recurvatum can occur [13,14].

CONCLUSION

The avulsions of the anterior tibial tuberosity have little morphological repercussion on the knee because they occur at a terminal stage of epiphyseal maturation. They are due to a sudden distraction on a series growth cartilage, more vulnerable to tearing than fibrocartilage it replaced during the process of maturation of this area of the upper end of the tibia. Surgical treatment of avulsion fracture displaced as found in our case. The result is satisfactory in the short and long term.

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