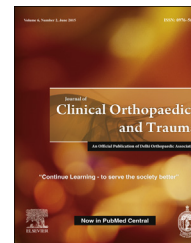


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## Case Report

# A rare case of giant cell tumour arising from anterior cruciate ligament: Its diagnosis and management



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## ABSTRACT

Tenosynovial giant cell tumour is a locally aggressive tumour arising from the synovia of the fibrous tissue surrounding the joints, tendon sheaths and tendons. Areas of predilection are the hand, and in the case of synovial joints, the knee joint is particularly affected. We describe a rare case of an intra-articular localized tenosynovial giant cell tumour arising from the anterior cruciate ligament (ACL) in a 27 year male who presented with pain and giving way of his left knee without prior history of any trauma. Tests for internal derangement of knee were negative. MRI reported an ACL tear with a heterogeneous fibrous mass attached to the distal part, most probably an organized haematoma. It was decided to do a diagnostic arthroscopy before proceeding for ACL reconstruction. Arthroscopy revealed a purple coloured mass attached to distal part of ACL. The mass was removed piecemeal using an additional posterolateral portal. ACL was found intact. Histopathology reported it to be tenosynovial giant cell tumour. The patient was asymptomatic at each subsequent follow up. It is a rare diagnosis which presented as an ACL tear; in such suspected cases it is prudent to perform a diagnostic arthroscopy before going for ACL reconstruction.

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## 1. Introduction

Tenosynovial giant cell tumour is a locally aggressive tumour arising from the synovia of the fibrous tissue surrounding the joints, tendon sheaths, mucosal bursas, and tendons.<sup>1,2</sup> The various synonyms used to describe the tumour are: giant cell tumour of tendon sheath, nodular tenosynovitis, pigmented

villonodular synovitis, fibroxanthoma and fibrous histiocytoma.<sup>3</sup> The four clinicopathologic variants of tenosynovial giant cell tumour are localized, diffuse extra-articular, diffuse intra-articular (diffuse pigmented villonodular synovitis), and malignant.<sup>4,5</sup> The localized type of tenosynovial giant cell tumour is defined as a circumscribed lesion that is microscopically not infiltrating into the fat or skeletal muscle. Areas of predilection are the hand, and in the case of synovial joints,

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the knee joint is particularly affected.<sup>5</sup> Only a few cases of the tumour arising from the knee have been reported in literature. This article describes a case of an intra-articular localized tenosynovial giant cell tumour arising from the anterior cruciate ligament (ACL). We discuss the dilemma in the diagnosis along with its MRI features and management of this rare condition.

## 2. Case report

A 27 year male, a software engineer by profession, otherwise healthy, presented to us with complaint of pain in his left knee and a sense of giving way for last six months without any prior history of trauma. To begin with, it was more of a sense of heaviness rather than pain. The pain was on-going and worsening gradually. Patient also complained of a sense of apprehension of falling down, while walking briskly. There were no complaints of swelling or catching of knee. No complaints of pain or swelling of any other joint was present.

On clinical examination there was no swelling or joint line tenderness. Knee range of motion was equal and comparable to the normal side. Tests for internal derangement of the knee viz. Lachmans's test, anterior and posterior drawer tests, valgus and varus stress tests, McMurray's test and pivot shift test were all negative.

Routine laboratory investigations including the ESR, CRP and serum uric acid levels were normal. Antero-posterior, lateral and skyline radiographs were also normal.

Patient had an MRI scan with him (which was done elsewhere) which reported a post-traumatic tear in the distal part of ACL along with a circumscribed heterogeneous mass,

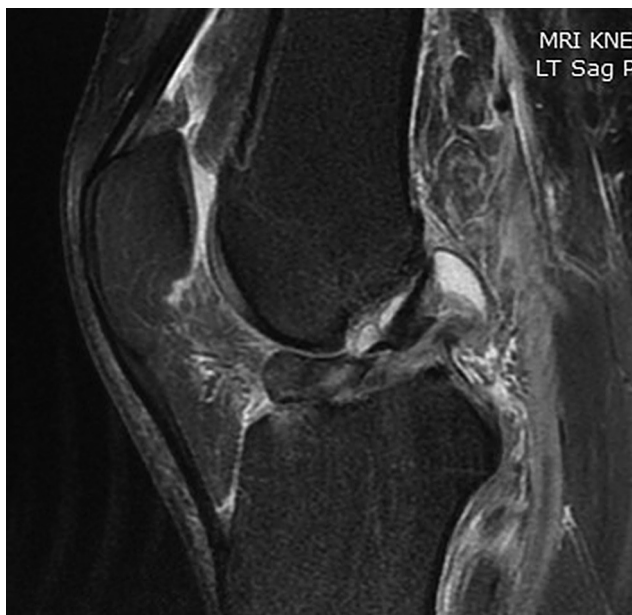
measuring 20 × 10 × 17 mm, attached to distal part of ACL and occupying the anterolateral recess of the joint, mostly an organized haematoma (Figs. 1 and 2). The menisci looked normal on the scan.

In view of the complaints and the MRI findings, patient was planned for ACL reconstruction but the senior surgeon was sceptical about the diagnosis as there was no history of trauma and the clinical examination was also not supporting it. So it was decided to go for a diagnostic arthroscopy prior to graft retrieval.

Arthroscopy was performed using the anteromedial and anterolateral portals. Intra-operatively a circumscribed mass with a purple hue was found attached to the distal part of ACL (Figs. 3 and 4). The mass was removed piecemeal and was sent for histopathology. An intralesional piecemeal excision was performed using a shaver, with meticulous attempts not to damage ACL. Strength, tension and integrity of ACL were checked after the resection and ACL was found to be intact (Fig. 5). No meniscal, ligamentous or cartilaginous lesions were detected. Rest of the knee joint was normal with no evidence of synovitis or hyperplasia. The ACL reconstruction was not required.

Histopathology revealed a giant cell tumour of tendon sheath with infarcts (Figs. 6 and 7). It was performed by The Professor of Department of Pathology of our institute. The post-operative course was uneventful and the patient was discharged the next day.

The patient was asymptomatic at each subsequent follow up and did not complain of any locking or giving way sensation. At 6 months follow-up a repeat MRI was performed which showed no signs of recurrence.



**Fig. 1 – Fat-saturated proton density weighted sagittal MRI images of the left knee demonstrating altered signal intensity of distal part of ACL with a circumscribed heterogeneous mass attached to its distal part.**



**Fig. 2 – T-2 weighted coronal image of the left knee demonstrating a heterogeneous mass occupying the anterolateral recess of the knee joint.**

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