

Case Report

FAT FRACTURE; ANTERIOR AND MEDIAL KNEE PAIN RARE CAUSE

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Abstracts: Blunt injury to the anterior aspect of knee results in a fracture of the patella or contusion. And, injury to the extensor mechanism can result in partial or full thickness tear of the patellar or quadriceps tendon. A young girl suffered an injury to her knee after she hit her leg with a hard object.¹ Acute swelling in the suprapatellar and medial soft tissues concealed a palpable defect, which initially was suspected a case of patellar dislocation. Magnetic resonance imaging of the knee revealed an intact extensor mechanism; moreover, a partial tear of medial retinaculum was found along with signal changes in the infrapatellar fat pad and diagnosed as a fat fracture.² Fat fracture is a rare diagnosis. As conservative management failed, Arthroscopy of the knee was done to debride the fat fracture that effectively treated the injury.³

Blunt injury to the anterior part of knee can cause fracture of the patella or contusion, instability of the patella, and tear of the quadriceps or ligamentum patellae. A blunt injury or undisplaced fracture of the patella can cause point tenderness and anterior knee effusion. A comminuted fracture of patella or tendon disruption typically has difficulty in extension of the leg. In literature one case of Fat fracture of knee has been reported by blunt injury. Here we present a case of a 17-year-old girl who face a blunt injury to her left knee after hitting her leg with the hard object and got pain on the medial and anterior aspect of knee.

Case

A 17-year-old female hit the wheat sack, and present with increasing pain and was unable to walk and she felt as her patella slip out. She complained of pain, with patellar instability sign but no signs of meniscal injury. On Physical assessment patient have mild swelling on the medial and anterior side of the patellar tendon region, as well as on the medial femoral condyle. However, joint effusion was not there. There was tenderness on the superior and medial aspect of the patella, but joint line was not tender. Percussion testing to the patella was negative. The extensor mechanism has no defect in it, she has been able to do SLR Test against resistance but was painful. The patellar laxity was comparable to that of opposite knee. Her Hip range of motion (ROM) was ok, but knee ROM was limited to 90° of flexion, with the complaint of anterior tightness at this position. She can extend knee without pain. There was no varus and valgus instability at 0° and 30° of flexion. anterior and posterior drawer tests and Lachman test were negative. The McMurray test for meniscus was negative. X-rays of the left knee has no positive finding.

Outcome:

Patellar dislocation and sprain of the medial retinaculum were initial diagnosis, and she was treated by traditional bone settler. Activity

modifications and physiotherapy for quadriceps muscle strength done. treatment was given for 12 weeks and symptoms were settled but pain on walking and knee flexion was continued. Follow up showed decreased swelling, but there was tenderness and patellar apprehension test was positive. Patient can perform a SLR, an incomplete injury to the quadriceps became plausible. Magnetic resonance imaging shows An acutely marginated, longitudinal and transverse fluid defect “crevasse” in the infrapatellar fat adjacent to the patellar tendon that correlate the clinical abnormality. **(Fig-1)** This shows localized “fat fracture, the patellar and quadriceps tendons were intact. Last, there were evidence of medial retinaculum injury. We done arthroscopic debridement of fat fracture that was brownish discolored, this management led to the resolution of symptoms. At a 1-month follow-up, she was pain free with full range of motion of the knee joint.

Discussion

A fat fracture was initially described in the buttock by blunt trauma.³ geometry of the fat lobules arranged in layers and enhanced by horizontal and vertical fibrous septa. Heavy loading flatten the lobules and forces disperse throughout the layer. Whenever there is injury to a local area this will lead to disruption the fat lobules and septa. Buttocks have more fat tissue in comparison to extremity, and the anterior part of

knee is vulnerable to injury. Initially our case show no soft tissue defect due to massive swelling, and SLR test was negative despite the fat fracture. This case highlights the spectrum of injury that is possible, and difficulty in diagnosing a fat fracture. Furthermore, this case describes a patient who presented with medial and anterior knee pain. The swelling due to fat fracture spread into the medial part of patellar tendon, which can be confused with swelling from an injury to the medial-sided soft tissues.

operative management is not always required for such cases and conservative measures may not be as effective as those in a patellar contusion or ligamentous sprain, arthroscopic treatment is ideal to treat such cases figure 2.



Fig-1: MRI Knee joint.

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Fig-2: Arthroscopy of knee joint.

The swelling due to fat fracture spread into the medial part of patellar tendon, which can be confused with swelling from an injury to the medial-sided soft tissues. Operative management is not always required for such cases and conservative measures may not be as effective as those in a patellar contusion or ligamentous sprain, arthroscopic treatment is ideal to treat such cases (Fig-2).

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