

CASE REPORT

HOFFA'S FAT PAD DISEASE IN A 10 YEAR CHILD: CASE REPORT

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ABSTRACT: INTRODUCTION: Albert Hoffa in 1904 described the condition. Hoffa's fat pad disease is commonly encountered in athletes after the second decade. Most common pathology is impingement of fat pad between patella and femoral condyles. **CASE PRESENTATION:** We report a case of Hoffa's fat pad disease of the right knee in a ten year boy. He presented with pain and swelling in the right knee since seven months, diagnosis confirmed with MRI. Symptoms not reduced with conservative treatment and surgical excision performed. Histopathology confirmed Hoffa's fat pad disease. Patient was relieved of symptoms 2 weeks post surgery and able to perform activities of daily living. **CONCLUSION:** Hoffa's fat pad disease is rare in children and MRI is diagnostic. It is managed by surgical excision if conservative treatment fails.

KEY WORDS: Hoffa's disease, Infrapatellar fat pad, Anterior knee pain, MRI.

INTRODUCTION: Albert Hoffa, German surgeon in 1904 described the condition. Hoffa's disease is associated with chronic anterior knee pain, beneath the patella¹. Most of the patients present in the fifth decade². Hoffa's fat pad disease is also encountered in athletes after second decade. The youngest patient reported in the literature is eighteen years. We present a ten year old boy suffering from the disease, probably due to cross leg sitting, sports and running. Most common pathology is impingement of fat pad between patellofemoral and tibiofemoral joints.

CASE DETAILS: 10 years male suffering from pain and swelling in the right knee joint since seven months. Pain was dull aching and aggravated on straightening of knee and squatting. Swelling was insidious in onset and gradually progressive below the knee cap. Child was not able to walk long distances and avoided going to school due to pain. History for other joint involvement, fever, loss of weight and appetite was negative. On examination there was tenderness between inferior pole of patella and tibial articular margin, Hoffa's test positive, flexion extension arc 10-90°, with diffuse palpable soft swelling measuring 5x4cm in the anterior knee between inferior pole of patella and tibial tuberosity. (Picture: 1)

X ray of right knee joint AP and lateral views showed soft tissue shadow between inferior pole of patella and tibial articular margin. (Picture: 2)

MRI right knee showed enlarged infrapatellar fat pad with reduced signal intensities on T1W and hyperintensity on T2W with mild effusion. And in short tau inversion recovery sequence the lesion is hyperintense. Interpreted as infrapatellar Hoffa's pad thickening. (Picture: 3)

TREATMENT: Conservative managed for four months by anti-inflammatory medication, physiotherapy. As symptoms showed no improvement, surgical excision of swelling was done under spinal anaesthesia. (Picture: 4)

Histopathological examination revealed inflammatory changes in the infrapatellar pad of fat.

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FOLLOW UP: The patient was relieved of symptoms two weeks post surgery and able to perform activities of daily living.

DISCUSSION: A small pyramidal shaped fat pad which is intracapsular and extra synovial between the inferior pole of patella and tibial articular margin of anterior knee. This is richly innervated by neural and vascular tissue³. Its function is to prevent transferring stresses over patella during knee terminal extension and flexion of knee. The function is to stabilize patella in extremes of flexion and extension⁴. And it has clinical importance in various tumour and tumour like conditions like ganglion cyst, synovitis, lipoma, synovial chondromatosis, focal villonodular synovitis, osteochondroma or para articular chondroma, chondrosarcoma and hoffa's disease⁵.

Hoffa's fat pad disease is an inflammatory condition, seen usually in athletes after second decade. The various causes are trauma, sports related to force full straightening or bending of the knee in case of kicking or jumping, prolonged kneeling and post surgical scarring of fat pad especially in arthroscopic surgeries.

In case of trauma, patients will present with acute knee pain, exacerbated with activities and in patients with impingement of inflamed infrapatellar fat pad between femoropatellar and femorotibial articular surfaces suffer from chronic knee pain.

Usual way of presentation is pain below the patella, swelling of the knee and restricted knee movements. Examination reveals tenderness over and adjacent to the ligamentum patella, anterior knee swelling prominent between inferior pole of patella and tibial articular margin. Pressure applied on either side of ligamentum patella in a flexed knee with gradual extension causes apprehension in the patient (Hoffa's test). Range of knee movements will be restricted⁶.

X ray: prominent soft tissue shadow between inferior pole and tibial articular margin.

MRI: T1W shows enlarged infrapatellar pad of fat with reduced signal intensity and T2W shows hyperintensity in the same region⁷.

Conservatively management: Rest (avoiding aggravating activities), anti-inflammatory drugs, ice therapy, ultrasound therapy, TENS therapy, muscle strengthening knee exercises, taping of patella and in some by intralesional steroid infiltration.

Cases not responding are treated with excision of the fat pad either by high portal arthroscopic⁶ or by open arthrotomy and sending the tissue for the histopathological examination to rule out fat pad tumours⁸.

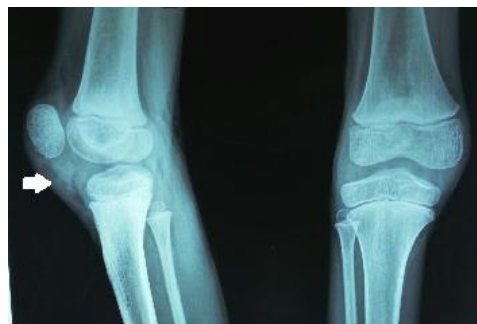
CONCLUSION: Hoffa's disease is rare in children. Usually seen in athletes after second decade. Diagnosis is confirmed by MR imaging. Conservative management is the first line of treatment and partial or complete excision by arthrotomy or by high portal arthroscopy is considered if patient does not respond to conservative treatment.

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