

# Case Report and Review of the Literature

## Regional Migratory Osteoporosis

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## Abstract :

Like any other rare disease the diagnosis of Regional Migratory Osteoporosis is challenging, Its clinical presentation and radiological features usually leads to host of unnecessary investigations and surgical procedures.

The aim of this case report is to familiarize one with the clinical presentation, natural course of the disease and its management.

## Introduction

Regional Migratory Osteoporosis is a very rare syndrome. It is an idiopathic transient osteoporosis of multiple sites.<sup>(1)</sup> Idiopathic transient osteoporosis has been described most commonly in the hip, but also occurs in the knee, ankle and foot. <sup>(2)</sup> We report the case of a patient who had regional migratory osteoporosis involving both knees and the left foot.

## Case Report

A sixty two year old man who was diagnosed in 1997 with idiopathic transient osteoporosis of his right knee (Figures 1,2), presented to the senior author with a painful left knee in July 2006. On examination, only a mild effusion in the left knee was found. X-rays of the left knee showed age appropriate degeneration. MRI of the left knee was done which confirmed the diagnosis of ITO of the left lateral femoral condyle (Figures 3,4). The patient was treated with NSAIDs, reduced weight-bearing, ice, rest, elevation. It took five months for symptoms to resolve and a repeat MRI also confirmed resolution of radiological signs.

In April 2007 this patient returned with a painful, swollen left foot. There was no history of trauma. On examination, swelling over the navicular bone was found, with localized tenderness. X-rays of the left foot were normal. MRI scans of the left foot suggested Idiopathic transient osteoporosis (Figures 5,6). The patient was treated symptomatically with non-weight bearing and analgesics.

All symptoms resolved. In view of the clear history, with both knees, in this patient, follow-up MRI scan of the foot was not obtained.

Fig.1 T2 weighted MR image demonstrating area of increased signal in right lateral femoral condyle.

Fig.2 T1 weighted MR image demonstrating area of decreased signal in right lateral femoral condyle.

Fig.3 T2 weighted MR image demonstrating area of increased signal in left medial femoral condyle.

Fig.4 T2 weighted MR image demonstrating area of increased signal in left medial femoral condyle.

Fig.5 T2 weighted MR image demonstrating area of increased signal in left navicular bone.

Fig.6 T2 weighted MR image demonstrating area of increased signal in left navicular bone.

## Discussion

The causes of ITO remain uncertain. The most commonly accepted theory is that microvascular injury causes tissue ischaemia, resulting in marrow oedema and limited cell injury. This theory is supported by the finding of oedema of bone marrow in biopsy specimens of idiopathic transient osteoporosis of the hip (ITOH)<sup>(3)</sup>. McCarthy suggested that the histological features of ITO are distinctive. He found marrow oedema, reactive bone formation and osteoclastic resorption. The absence of necrosis and the presence of osteoclastic activity distinguishes ITO from avascular necrosis of bone (AVN)<sup>(1)</sup>.

However we are of the opinion that ITO is an initial self-limiting stage of AVN based on similarities in clinical, pathological and radiological findings between the two.

Differential diagnosis includes soft tissue injury, stress fracture, arthritis, malignancy and bony infections. ITO can be suspected on history and clinical examination but MRI or /and biopsy is required for confirmation<sup>(4)</sup>. Most patients present with acute spontaneous onset of pain. MRI scans show a diffuse area of decreased signal intensity on T1-weighted images and increased signal intensity on T2-weighted images. X-rays sometimes show mild localized osteopaenia<sup>(4)</sup>. Blood tests can help to exclude other pathologies. Bone biopsy shows marrow oedema, reactive bone formation and osteoclastic resorption.<sup>(1)</sup>

Treatment consists of observation, protected weight bearing and analgesia, but in the literature there are reports of cases of ITO treated with core decompression<sup>(6)</sup> and alendronate<sup>(7)</sup> with resultant success.

## Conclusion

Regional migratory osteoporosis is idiopathic transient osteoporosis of multiple sites. Idiopathic transient osteoporosis (ITO) is the earliest form of a spectrum of disorders with avascular necrosis of bone (AVN) being the most severe form<sup>(5)</sup>. Patients should be warned that it could take up to several months to resolve, but observation, symptomatic treatment will be sufficient.

Follow-up MRI scans will confirm resolution of the condition, but they are not essential, unless symptoms are not resolving.

In our opinion, surgery should be avoided, unless mechanical derangement is noted, or if progression to AVN occurs.

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