



POST TRAUMATIC SYNOVIAL CHONDROMATOSIS MASQUARADING AS CHRONIC OSTEOARTHRITIS OF THE KNEE. CASE REPORT

Shaaibu A S	Department of Radiology, Aminu Kano Teaching Hospital, Kano State
Danjaji AU*	Department of Radiology, Murtala Muhd Specialist Hospital, Kano State *Corresponding Author
El-Habeeb AM	Department of Radiology, Federal Medical Center Katsina, Katsina State
Mustapha IM	Department of Radiology, Federal Medical Center Katsina, Katsina State

KEYWORDS :

INTRODUCTION

Synovial chondromatosis is a rare, benign, proliferative cartilaginous lesion arising from the synovial tissue, tenosynovium, or bursal lining of or near joints. The term synovial osteochondromatosis is no longer used because the lesions are not only unrelated to osteochondromas but also not all ossified¹. Synovial chondromatosis is found all over the body.

It can be divided into primary and secondary forms; the primary form is uncommon, has unknown causes, and is generally monoarticular. It is between two to four times more frequent in men, occurring at any age group, most frequently between the 3rd and 5th decades of life². Any joint may be affected, and the knee is the most frequent site (50-65% of the cases), followed by elbow, hips and shoulder in decreasing order of frequency³. The secondary form is a common condition caused by mechanical injury of the intraarticular hyaline cartilage triggered by joint anomalies such as osteoarthritis, osteonecrosis, osteochondritis dissecans, neuropathic osteoarthropathy, trauma and rheumatoid arthritis. It is found in elderly patients, generally involving multiple joints, and may be related to degenerative joint disease, more frequently in the knees, hips and shoulders².

Imaging findings depend on the stage of disease and the extent of calcification or ossification of the cartilaginous nodules. Characteristic features are those of periarticular multiple ossified loose bodies in a rings-and-arcs morphology seen in joint, tendon sheath, ganglion, or bursa². The size of the loose bodies varies between a few millimeters to several centimeters. There may be widening of the joint space. Associated joint effusion is said to be uncommon². Osteoporosis is not a feature².

Patients usually present with pain, swelling, and limitation of motion, which often progress slowly for several years⁴. These symptoms are unspecific and are often seen in much commoner conditions like osteoarthritis.

This is an unusual case of post traumatic synovial osteochondromatosis clinically masquerading as severe osteoarthritis in a 56 year old man. The case will hopefully, prompt health care givers to factor in rare clinical conditions in evaluating patients.

CASE REPORT

Mr. K.U is a 56 year old business man who presented to orthopedic clinic with four (4) months history of progressive left knee swelling and pain following a road traffic accident (RTA) he sustained 2 years prior to the onset of the symptoms. The pain is said to be aggravated with trekking long distances, weight bearing and squatting. Patient often uses traditional balm to relieve his pain. No history of similar symptoms on the contralateral leg or anywhere in his body. Past medical and surgical histories were unremarkable.

On examination, patient was found to be a healthy middle age man with average body weight, not in any painful distress. The left knee appeared swollen and there was restriction of both flexion and extension movements. There was mild tenderness over the swollen knee. A firm non mobile lobulated mass was palpated around the knee joint. Other systems were essentially normal. Initial assessment of post

traumatic left knee osteoarthritis was made at the clinic. Bilateral knee x-ray was requested as part of routine investigation.

Plain radiographic examination of the patient's knee revealed periarticular multiple calcified loose bodies on the left knee joint (figure 1). There is patello-femoral joint space narrowing, spiking of the intercondylar eminence of the joint as well as osteophytic outgrowths seen in both tibial and femoral condyles (figure 2), in keeping with background osteoarthritic changes. No evidence of joint effusion or osteoporosis is seen. Findings in the contralateral knee were unremarkable.



Figure 1: Left knee lateral projection showing multiple ossified loose bodies of varying sizes (arrows). Marked narrowing of joint spaces (tibio-femoral and patella-femoral) is also shown.

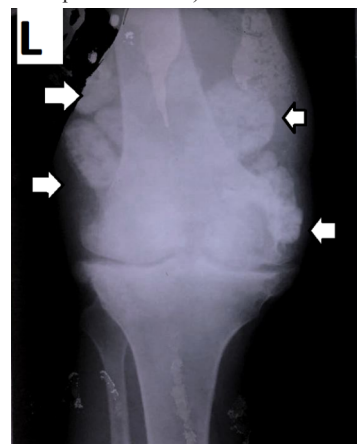


Figure 2: Left knee antero-posterior radiograph showing multiple periarticular ossified loose bodies of varying sizes in a characteristic rings-and-arcs morphology (arrows).

Laboratory investigations showed elevated ESR of 102mm/hour. The serum calcium, phosphate and uric acid levels were however within reference range.

On account of the patient clinical history laboratory and characteristic radiographic findings, a diagnosis of synovial chondromatosis likely secondary to trauma was made. Patient was referred back to orthopedic clinic for surgical management. He however opted out due to financial constrain.

DISCUSSION

Synovial chondromatosis is a rare benign condition characterized by the presence of cartilaginous nodules in the synovium of joints, tendon sheaths, and bursae which often occur without trauma or inflammation¹. The finding of background osteoarthritic changes limited to the affected joint suggests traumatic aetiology in this index case.

Cartilage cells are absent inside the synovial membrane. It follows therefore that the development of synovial chondromatosis depends on metaplastic transformation of the synovial cells into chondrocytes via an unknown stimulus. These chondrocytes become pedunculated and encrusted inside the synovium and eventually expelled into the joint as loose bodies⁵.

Despite the varied nomenclature, it is recognized that synovial chondromatosis can be differentiated into a primary and secondary form. The primary form occurs in an otherwise normal joint⁴. Secondary synovial chondromatosis is thought to be caused by irritation of the synovial tissue of the affected joint. This form is associated with degenerative joint disease, trauma, inflammatory and non-inflammatory arthropathies, avascular necrosis, and osteochondritis desiccans⁴.

The case presented could have been diagnosed as idiopathic tumoral calcinosis, based on the florid extra articular calcifications seen on the radiograph. These findings are however unilateral and limited to only one joint.

Malignant degeneration of synovial chondromatosis into chondrosarcoma is a described, but extremely rare entity⁶. Synovial chondrosarcoma is an extremely rare diagnosis and characterized by soft tissue mass extending beyond the joint and presence of metastases. These features were not demonstrated in the index case. The condition is thought to arise either de novo or in the setting of synovial chondromatosis⁶.

The diagnosis of synovial chondromatosis is given after a thorough history, physical examination, and radiographic examination. However, the definitive diagnosis is achieved after histological examination of the synovial tissue⁴.

The appropriate treatment for synovial chondromatosis includes surgical removal of the loose bodies followed by total or subtotal synovectomy⁷. Recurrence is however common².

SUMMARY

A case of post traumatic synovial osteochondromatosis presenting with features of severe osteoarthritis in a middle age man has been presented. The rarity of this condition and the similarity with osteoarthritis in their clinical presentations may delay its diagnosis.

Caution should be exercised in patient's follow up due to very remote but likely chance of malignant transformation.

REFERENCES

- 1) Ho YY, Choueka J. Synovial chondromatosis of the upper extremity. *The Journal of hand surgery*. 2013 Apr 30;38(4):804-10.
- 2) Wolfgang D (ed). *Bone and Soft Tissue Disorders*. In *Radiology Review Manual 7th Edition*. Lippincott Williams & Wilkins 2011; 170.
- 3) Terazaki CR, Trippia CR, Trippia CH, et al. Synovial chondromatosis of the shoulder: imaging findings. *Radiol Bras Sao Paulo* 2014 Jan/Feb; 47(1): 38-42.
- 4) Shearer H, Stern P, Brubacher A, et al. A case report of bilateral synovial chondromatosis of the ankle. *Chiropractic & Manual Therapies*. 2007 Nov 24; 15(1):18.
- 5) Mackenzie H, Gulati V, Tross S. A rare case of a swollen knee due to disseminated synovial chondromatosis: a case report. *Journal of Medical Case Reports* 20104:113
- 6) Sah AP, Geller DS, Mankin HJ, et al. Malignant transformation of synovial chondromatosis of the shoulder to chondrosarcoma. *JBJS Case Connector*. 2007 Jun 1(6):1321-8.
- 7) Balasundaram A, Geist JR, Gordon SC, et al. Radiographic Diagnosis of Synovial Chondromatosis of the Temporomandibular Joint: A Case Report. *JCDA*. 2009 December 75(10): 710-714