Synovial Metaplasia- A Case Report of Synovial Chondromatosis in a Young Adult

Kannedari Rindu Sahithi1, Zaheda Kausar2, Anunayi J.3

1Department of Pathology, Osmania Medical College, Koti, Hyderabad, Telangana, India.
2Department of Pathology, Osmania Medical College, Koti, Hyderabad, Telangana, India.
3Department of Pathology, Osmania Medical College, Koti, Hyderabad, Telangana, India.

INTRODUCTION

Synovial chondromatosis is an uncommon benign condition emerging from the synovial membrane of the joints, synovial sheaths or bursae around the joints1. Synovial chondromatosis commonly influences the big joints in the third to fifth decade of life. The motivation behind this case report is to record this uncommon synovial pathology in 25 years young male which required open synovectomy and debridement to treat it. Synovial chondromatosis is an uncommon benign condition. Patients generally present with swelling, pain and including the synovial covering of joints, synovial sheaths and movement restriction2. It is the metaplastic procedure of synovium. It affects mainly large joints; knee, hip, which is an uncommon age group for this synovial pathology and shoulder, lower leg and wrist. Inclusion of smaller joints additionally, which incorporates distal radioulnar, peripheral synovium, which supposedly has tibio-fibular, metacarpophalangeal and metatarsophalangeal not been archived in before reports3. Bursae around the joints are additionally significant uncommon areas for synovial chondromatosis3. It typically shows in third to fifth decade of life. It is a rare case in 25 years young male presented with swelling and pain over right knee since 3 years.

PRESENTATION OF CASE

A 25 years old male presented with complaints of pain in right knee since three years and swelling since two years, occasionally associated with fever. Effusion is seen just above the knee and increased on exertion, patient had difficulty in walking, sitting cross legged and squatting. Patient had antalgic gait. There was no deformity. Anteriorly, effusion noted in the suprapatellar extending medially and laterally, diffuse effusion present, mild quadriceps wasting seen. Laterally, mild effusion present.
X-ray, right knee aspirate- 90 ml of serous fluid is aspirated and sent for cytology and microbiology. Knee aspiration cytology showed scattered neutrophils in proteinaceous background. Microbiology culture showed no organisms found and Gram stain smear shows no pus cells and no organism, acid fast staining did not show acid fast bacilli.

**DIFFERENTIAL DIAGNOSIS**

Villonodular Synovitis  
Chronic Tubercular Synovitis Right Knee

**PATHOLOGICAL DISCUSSION**

Patient underwent arthroscopic synovial biopsy right knee and synovectomy. Specimen sent for histopathology.

**Histopathology**

Received pearly white cartilage bits with fibrofatty tissue.

**Gross**

Numerous round osteocartilaginous nodules.

**Histopathology Report**

Multiple sections studied from right knee synovial biopsy shows synovial tissue and multiple nodules of chondroid tissue and few muscle bundles.

**Impression**

Synovial chondromatosis (metaplasia) right knee biopsy.

---

**CLINICAL DIAGNOSIS**

Chronic Synovitis
Synovial Chondromatosis is an uncommon metaplastic condition which is characterized by arrangement of cartilaginous bodies inside the synovium and sub synovial connective of the larger joints. There are three stages in the recurrence. Stage 1 – Active intra synovial disease without loose bodies. Stage 2 – Active intrasynovial disease with the arrangement of loose bodies. Stage 3 – Loose bodies in general calcify and synovitis becomes inactive without synovial abnormality. Presents in their third to fifth decade, however there are reports of Peculiarities for this situation is its presenting age and its event in young adult. Synovial chondromatosis is more common in males. Mostly unilateral, yet bilateral involvement has been seen. Plain radiograph, ultrasound, CT and MRI are the imaging modalities which can be utilized to help with diagnosing this condition. MRI is investigation of choice.

Nodules of the metaplastic development are normally seen inside the synovium or attached to it loosely. Immunohistochemical study directed by Allard et al, which expresses that in all joints at the intersection with synovium, a vascular, wedge-shape tongue of tissue was found to cover the ligament surface. This minor tissue overlying ligament was in coherence with and immunohistochemically like the adjacent synovial tissue. Management is mostly surgical. Open and arthroscopic procedures can be used to treat this condition. Synovectomy gives better outcome when compared to loose body removal alone. Total knee arthroplasty is likewise a choice if synovial chondromatosis is concurrent with osteoarthritis. Complications of synovial chondromatosis can be secondary osteoarthritis, malignant transformation and recurrence. Pigmented villonodular synovitis, Synovial hemangioma, and lipoma arborescens are few conditions which mimic synovial chondromatosis. Radiography and histology may help in accurately differentiate amongst them.

CONCLUSIONS

Clinical diagnosis is difficult, consistency of clinical, radiological and histological findings should be taken in to consideration in every case. Peculiarity in this case is presenting age.

REFERENCES