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SYNOVIAL CHONDROMATOSIS OF KNEE: A CASE REPORT

Mohammad Farid^{1,*}, Kumar Satyendra², Lal Atil Kumar³, Rai Tushar⁴, Singh Sudhir⁵

¹Assistant Professor, ²Senior Resident, ^{3,4}Junior Resident, ⁵Professor & Head, Department of Orthopaedics, Era's Lucknow Medical College, Lucknow.

***Corresponding Author:**
E-mail: drfarid29@yahoo.in

Abstract: Synovial chondromatosis is a rare benign condition arising from the synovial membrane of the joints, synovial sheaths or bursa around the joints. The purpose of this case report is to document this condition in younger age group as compared to age group of 30-50 yrs where it has been seen relatively more commonly, and of attachment of multiple loose bodies to anterior cruciate ligament which was treated by arthroscopic synovectomy and removal of loose bodies was done in a 22 yr old male.

Keywords: synovial chondromatosis, loose body, Knee joint, arthroscopy.

Introduction

Synovial chondromatosis is a rare benign condition arising from the synovial membrane of the joints, synovial sheaths or bursa around the joints. This condition primarily affects the large joints (most commonly knee joints¹) although involvement of smaller joints has also been seen. It is characterized by foci of cartilage in the synovial tissue of joints, due to metaplasia of intimal layer of synovium². The inner layer of synovium contains synovial cells and outer layer consists of fibroareolar tissue, collagen, fat, nerve and lymphatics. Some of the metaplastic foci of cartilage become sessile, detach from synovium and become loose bodies. Average age in Murphy series was 40 years with the average duration of symptoms 5.5 years³.

Case Report

A twenty two year old male patient presented with two year history of pain, swelling and locking of left knee two to three times daily, with aggravation of pain on more than 200 meters of walking, climbing stairs and any form of physical activities, physical examination revealed mild synovial effusion, his range of motion was 0-110 degrees with no ligamentous instability, Mac-Murray's test was positive for lateral meniscus in the same knee.

Plain radiograph anteroposterior and lateral view of left knee joint revealed multiple calcific densities in intra articular and extra articular surfaces⁴, without any osteoarthritis changes (figure 1). MRI suggested synovial thickening with effusion with multiple intrarticular loose bodies (figure 2).



Figure 1: Antero-Posterior and Lateral view of Knee Joint Showing Multiple Loose Bodies

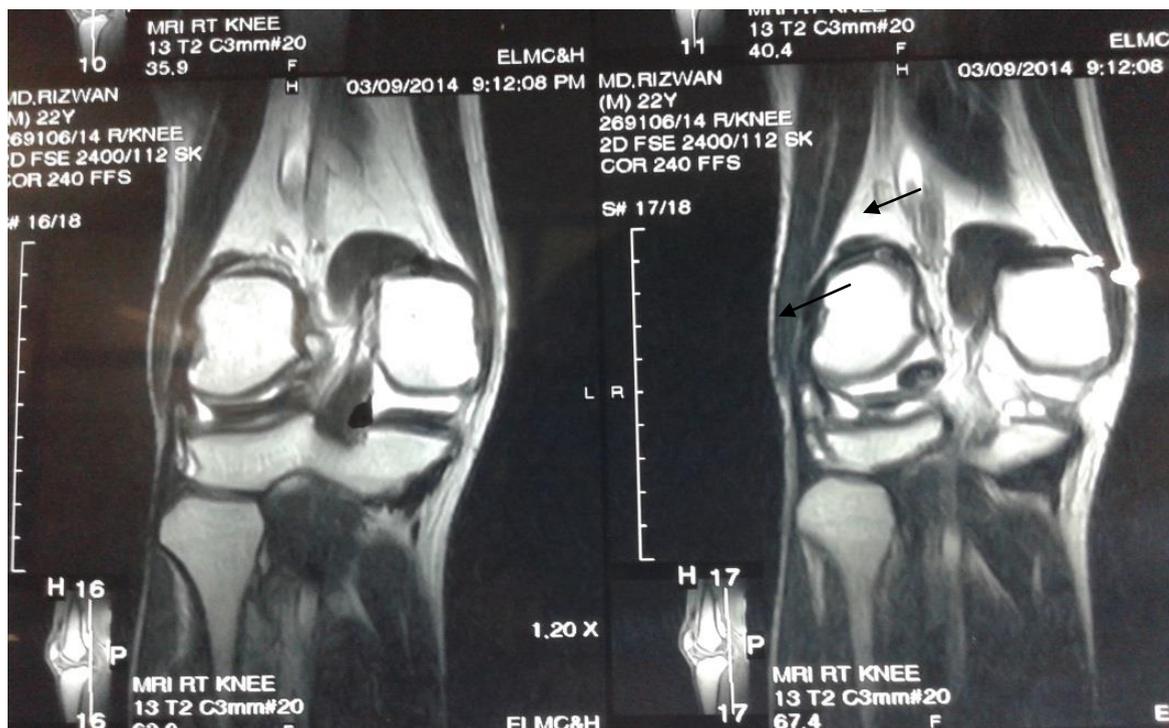


Figure 2 - MRI Left knee showing multiple loose bodies in knee joint

Arthroscopy was done which showed multiple loose bodies in the intercondylar groove and two loose bodies 1x1cm were found to be attached to anterior cruciate ligament with multiple loose bodies beneath the lateral retinaculum (figure 3). These were

removed arthroscopically without causing any serious injury to the ligament with total synovectomy (figure 4). Histopathological examination confirmed the diagnosis of synovial chondromatosis (figure 5).

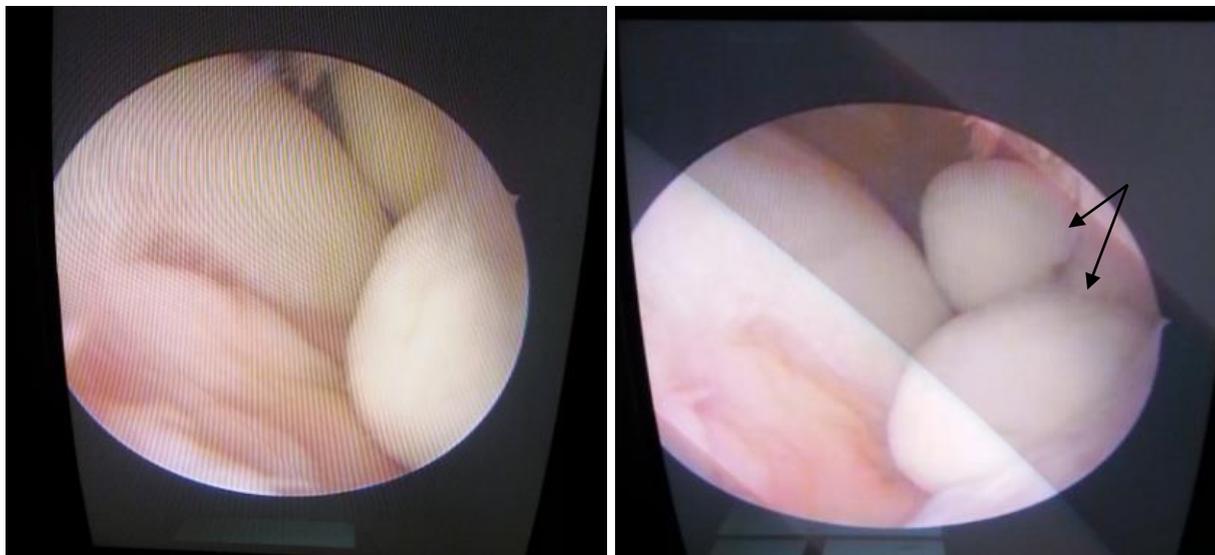


Figure 3: Arthroscopic images showing multiple loose bodies in knee joint.

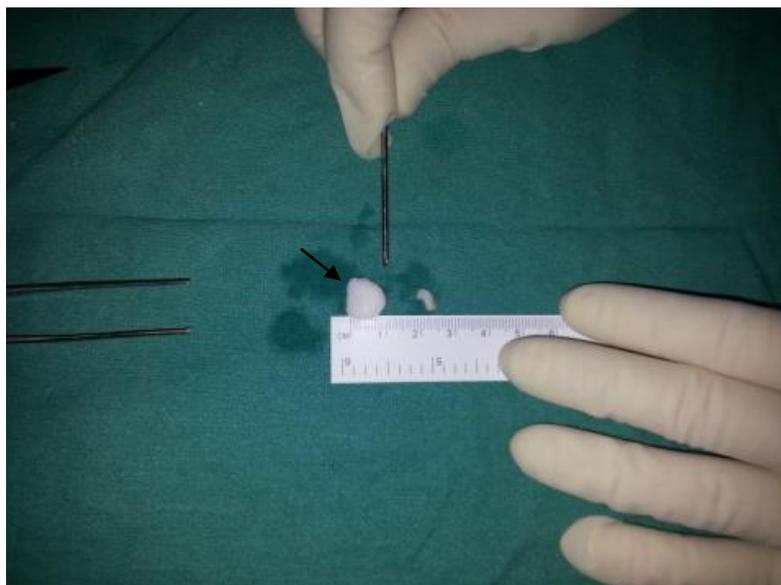


Figure 4: Loose bodies after removal

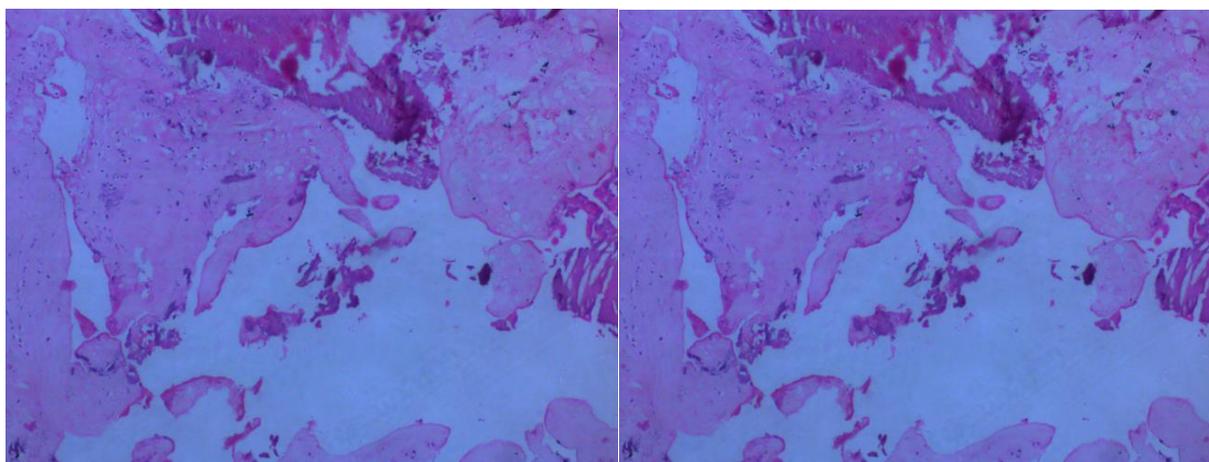


Figure-5 Histopathological pictures showing multiple foci of cartilaginous tissue

Post operatively patient was uneventful and after 1 week of surgery patient was put on physiotherapy for knee mobilization and strengthening exercises. On follow up after 3 weeks patient has significant reduction in pain even on physical activity with reduction in locking episodes. On two months follow up patient has not been complaining of any locking with mild pain on exertional activities. His knee flexion range was from 0-130 degrees.

Discussion

Primary Synovial chondromatosis is a rare monoarticular synovial disease¹, a benign condition very rarely seen in second decade. Although benign, it can sometimes be destructive and cause severe osteoarthritis, pain and disability⁵. Synovial chondromatosis is usually seen in age group 30-50⁶ yrs, in our case it was seen in a 22 yr old male with a symptomatic history of around 2 yrs.

Management is mainly surgical either open or arthroscopic which in our case was done arthroscopically, during which multiple loose bodies were found in interondylar groove and attached to synovium with attachment of multiple loose bodies to anterior cruciate ligament. Patient was managed with synovectomy and removal of loose bodies⁷ which were sent for hispathological examination.

My aim is to present a case of synovial chondromatosis in second decade which is a rare age group for this synovial pathology and also to report another atypical feature of loose bodies attached to ligamentous structures which was treated arthroscopically. Complications of synovial chondromatosis can be secondary osteoarthritis, malignant transformation and recurrence. Pigmented villonodular synovitis, synovial hemangioma and arborescence are few conditions which can mimic synovial chondromatosis. Radiography and histology may help in accurately differentiate amongst them.

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