

# An Unusual Case of Acl Cyst with Multiple Melon Seed Bodies of the Knee

Abhishek Vaish<sup>1</sup>, Parag Sancheti<sup>1</sup>, Raju Vaishya<sup>1</sup>

## What to Learn from this Article?

The cysts of ACL are not always due to mucoid degeneration only but could also be associated with an inflammatory arthropathy (and melon seed bodies).

## Abstract

**Introduction:** The cyst of anterior cruciate ligament (ACL) is a known clinical entity, but its association with knee synovitis and melon or rice bodies is not documented.

**Case Report:** We report a rare case of ganglionic cyst of the knee in association with diffuse synovitis and multiple melon or rice bodies in a 36 year old male. The case was treated arthroscopically with removal of the cyst of ACL and multiple melon seed bodies.

**Conclusion:** Information regarding incidence, treatment, and outcomes for patients with synovial cysts and melon seed bodies is lacking. Arthroscopic examination of joint gives the opportunity to diagnose such rare entity of the joint and also provide minimally invasive effective treatment of such pathology.

**Key Words:** Synovitis, Melon/rice seed bodies, arthroscopy, ACL cyst.

## Introduction

The cysts of ACL are known and described in the literature, but their association with diffuse synovitis and multiple melon or rice seed bodies has not been well documented. We report a rare case of a 36 year old gentleman who underwent arthroscopy of knee for swelling and locking, was found to have synovial cyst and melon seed bodies which were removed. The outcomes of such patients and recurrences have not been well described in the literature.

## Case Report

A 36 year old gentleman presented with complaints of dull aching pain in the right knee for 6 months which was aggravated on walking and relieved on rest. Patient did not give any history of fever, weight loss or instability while walking. There was no history of any other joint symptoms, comorbidities or long term drug intake. The clinical examination revealed parapatellar

fullness over right knee without any local rise of temperature or tenderness. Patellar tap and Mc Murray test suggesting medial meniscal tear were positive. Plain X ray revealed mild joint space reduction medially (Fig. 1) and MRI revealed posterior horn degeneration of medial meniscus with mild effusion in the knee joint and a cyst behind the ACL.

Intraoperative findings (Fig. 2) showed diffuse synovitis with well-defined cyst posterior to the ACL (Fig. 3). About 50-60 ml of synovial fluid mixed with multiple loose bodies (Fig 4) was removed. There was no evidence of medial meniscal or ACL tear which was excised. The histopathological examination revealed synovial chondromatosis and no evidence of Tuberculosis or Rheumatoid arthritis.

At 3 month follow-up, there was complete resolution of swelling and pain with full range of motion of the knee.

## Author's Photo Gallery



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Figure 1: Plain x-ray of knee

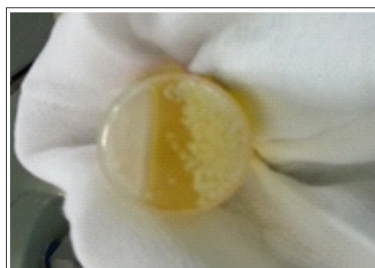


Figure 4: Synovial fluid with melon seed bodies

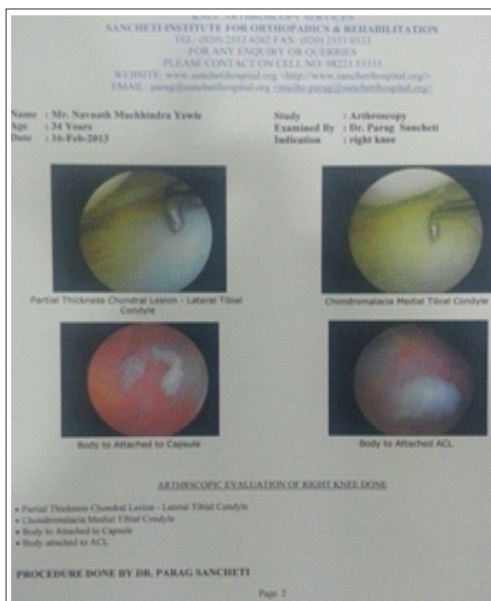


Figure 2: Intraoperative picture showing diffuse synovitis and melon bodies

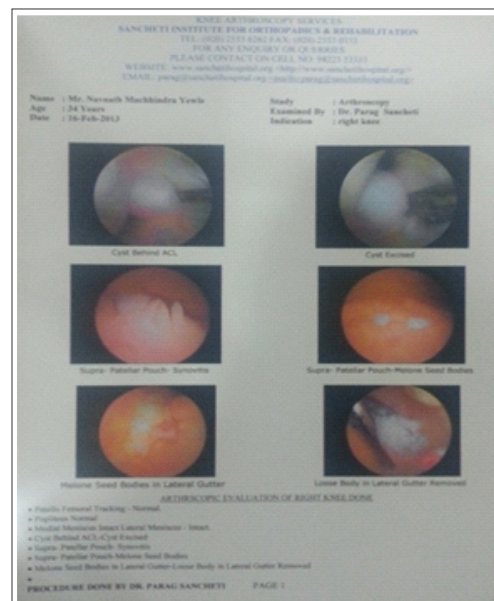


Figure 3: Arthroscopic picture showing ACL cyst & removal of melon bodies

### Discussion

Cysts associated with the anterior cruciate ligament (ACL) are rare with an incidence of less than 1% [5]. Prevalence rates for cysts in two large MRI series was 0.25% and 0.44% [7] and in an arthroscopic series of 8,000 cases, only 49 (0.6%) cystic masses were found to originate from the ACL [2].

A cyst in the mid-portion of the ACL was first described by Caan in 1924, in the cadaver of an elderly man with no documented antemortem symptoms referable to the knee. The etiology of these lesions remains obscure, and a history of significant trauma is obtained in only a minority of cases. Theories include post-traumatic mucinous degeneration of connective tissue mediated by local release of hyaluronic acid, herniation of the synovium into a defect in surrounding tissue, and even displacement of synovial tissue during embryogenesis. A strong male predominance exists. Symptoms comprise anteromedial knee pain aggravated by changing direction while running, on squatting or with extreme flexion and extension, and may resemble those of internal derangement [4]. A ganglion can arise as a cystic lesion from a tendon sheath or a joint capsule and contain a glassy, clear, and jelly-like fluid. They can occur within muscles, menisci, and tendons. Intra-articular ganglion cysts of the knee joint are rare. A review of the literature reveals a controversial discussion about the clinical significance as well as the etiology of ganglion cysts arising from the cruciate ligaments. These case reports show that an intra-articular ganglion cyst of the cruciate ligaments is difficult to diagnose. A cyst does not necessarily have to be associated with specific clinical symptoms or a previous trauma [3].

Ganglion cysts of the cruciate ligaments can easily be detected by MRI. Due to its multiplanar capability, MRI is the imaging modality of choice for diagnosis of these lesions, and demonstrates fusiform swelling of the ACL. The cysts return homogeneously low signal intensity on T1-weighted images and high signal intensity on T2-weighted images which are particularly good at contrasting the cysts against an intact ACL [4].

Arthroscopic evaluation and removal of synovial cysts and loose bodies have become a common practice in the current scenarios [1]. Although it was observed that most synovial cysts were asymptomatic and did not need any sort of treatment and were found incidentally [3]. Symptomatic patients having cyst alone have shown good results after arthroscopic removal of cysts [2]. Complete resection of the cyst and cyst walls is recommended to avoid recurrence [1]. Most patients have good or excellent results after arthroscopic excision of ACL cysts; postsurgical recurrence has not been reported. Successful treatment with aspiration guided by computed tomography has also been described [4]. Melon or rice bodies are free corpuscles of synovial origin with a cartilage-like appearance that may reach hundreds in number in the intra-articular space. Rheumatologic or infectious pathologies that may produce synovial hypertrophy play a major role in the etiology. This entity though recognized by rheumatologists is rarely reported in orthopaedic literature [6]. Magnetic Resonance Imaging (MRI) is the most useful diagnostic modality for detecting ACL cysts and the treatment of choice in symptomatic cases is by arthroscopic surgery [8,9,10].

### Conclusion

Information regarding incidence, treatment, and outcomes for patients with synovial cysts and melon seed bodies is lacking. Arthroscopic examination of joint gives the opportunity to diagnose such rare entity of the joint and also provide minimally invasive effective treatment of such pathology.

### Clinical Message

Awareness about the association of an ACL cyst with diffuse knee synovitis and melon bodies is crucial to reach an early diagnosis. Arthroscopic surgery provides an accurate diagnosis and means to remove the melon bodies while carrying simultaneous synovectomy.

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