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Giant loose body of knee joint in a case of osteoarthritis knee: A case report and review of literature

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Abstract

Loose bodies are free floating fibrous, bony, cartilaginous or osteo cartilaginous fragments inside a synovial joint. While majority are asymptomatic, some of them are symptomatic and can present with swelling, knee pain, locking of joint as well as restriction of movement. A symptomatic loose body, whatever maybe the size, demands removal. Even though arthroscopy is the most common operative intervention used in removal, arthrotomy is indicated to remove bodies that are present at inaccessible areas or are very large in size.

Keywords: Loose body, knee, osteoarthritis, giant

Introduction

Loose bodies are very commonly seen in the orthopedic practice ^[1]. They are very common in the knee joint and affect men and women equally. They can be found anywhere in the knee joint cavity ^[2]. They usually are multiple in number and small in size, the arthroscopic appearance being described as snow storm knee ^[3]. Rarely, they can be exceptionally large. The excision alone is not always the complete treatment, because loose bodies are generally secondary to other diseases that can cause persistent symptoms with the risk of new loose body formation ^[4]. The common causes are osteochondritis dissecans, degenerative joint disease, direct or indirect trauma, damaged meniscus, fractured articular surfaces and synovial osteochondromatosis ^[5]. The current article presents a case of a 76 year old male with a giant loose body in the suprapatellar pouch residing in the joint since 40 years and removed by our team with an arthrotomy.

Case report

A 76 year old male patient presented to our orthopedics OPD with complaints of pain and restriction of motion in bilateral knee joints; pain insidious onset, gradually progressive, increased on squatting and climbing stairs and decreased on rest. Associated with the complaint of pain was a loose body in the right knee joint since 40 years. The swelling had grown progressively from size of a pea to its current large size. The body used to come and reside in the popliteal fossa when it was smaller in size.

The patient self manipulates the body with ankle while going to sleep. The body, as depicted by the patient, is freely mobile. Pain was present during knee range of motion. There was no history of trauma. No history of any other joint involvement. On palpation, the patient had a hard swelling in the suprapatellar region. The swelling was much larger than the size of patella and was freely mobile in all planes. It was hard in consistency and minimally tender to palpation. Patient underwent radiographs in 2 orthogonal planes and the hip knee ankle scanogram as a part of pre-operative evaluation along with routine blood tests. The radiographs showed swelling around region of lower shaft of femur being itself larger than the diameter of femur.

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Fig 1: Anteroposterior radiograph of bilateral knee joint of the patient



Fig 2: Lateral radiograph of bilateral knee joint of the patient

The patient was planned for total knee replacement for osteoarthritis. He was undertaken for total knee replacement staged with right knee first along with removal of the loose body. A standard midline incision was taken. Intraoperatively, the loose body was present in suprapatellar pouch just below quadriceps and anterior to femur. Dimensions 10.0* 9.5* 3 cms. Total Knee Replacement was done. Post op was uneventful with physiotherapy and mobilization beginning the very next day. The patient was discharged.



Fig 3: Intraoperative photograph of the specimen

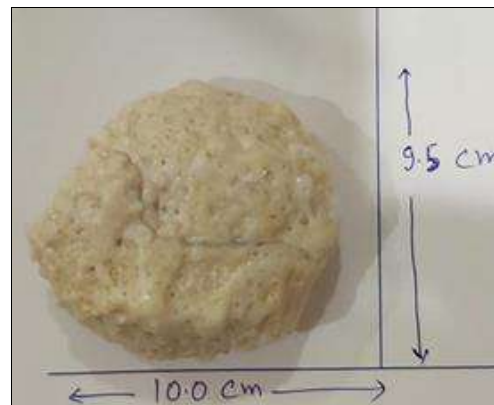


Fig 4: Size measurements for the specimen

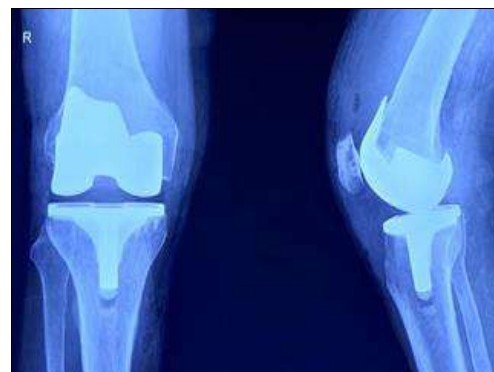


Fig 5: Post-operative radiograph of the patient

Discussion

A loose body can be single or multiple, stable or unstable, small or large. Single loose bodies are mostly a result of trauma. Multiple loose bodies are mostly associated with a disease. Stable loose bodies take up a position in the joint and are usually asymptomatic. Unstable ones are free floating and therefore, present with symptoms. Small loose bodies are not clinically evident whereas the larger ones are usually difficult for the patient [6]. On the basis of pathology, they can be cartilaginous (articular cartilage trauma), fibrinous (bleeding in the joint or a tissue trauma) or osteo cartilaginous (e.g. osteochondritis dissecans and synovial chondromatosis) [7]. Management be provided to the patient, the exact cause of any loose body in knee should be evaluated. Detailed history, proper clinical examination, radiographic evaluation must be done and basic management plan should be discussed. Management consists of conservative management in the form of analgesics. Surgical methods for a symptomatic loose body include arthroscopic removal, arthrotomy, pulverization and synovectomy.

Our patient had himself deliberately withheld the removal of loose body for 40 years. The patient didn't want to be subjected to an operative procedure just for the removal of body. He would self-manipulate the body into his knee and then carry out his daily activities with minimal morbidity. Although there was no definitive history of trauma, we speculate that some trauma in the past lead to formation of a fragment which has now grown to this current size. It was only when he developed significant osteoarthritis that the loose body could be removed owing to necessary total knee replacement procedure for his pain.

Review of literature

From 2000 to 2022, about 69 articles are published in the literature focusing on the issue of loose body in the knee joint. Most of these articles are either radiological assessment of the loose bodies or case reports for conditions like synovial chondromatosis, osteochondritis dissecans, and angioleiomyoma or dysplasia epiphysealis hemimelica. For loose bodies associated with osteoarthritis, maximum articles have reported small sized loose bodies which are easily removed by arthroscopic techniques. Only one article has reported a giant loose body presenting as an accessory patella which was removed by arthrotomy^[6].

Conclusion

In conclusion, a giant loose body in the knee joint is rare. An asymptomatic loose body may be treated conservatively. A loose body in the joint invariably is a predisposition to advancement of the osteoarthritis of the knee joint. If there are symptoms, one should get it removed by appropriate means to prevent further degeneration of the knee joint. These loose bodies are therefore, a common issue in knee joint and more studies are needed on this entity.

Presentation at conference

We acknowledge that paper was not presented at any conference.

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Conflict of Interest

Authors declare no conflict of interest.

Patient consent

Patient had consented for publication of case report to a journal.

Ethical approval

Consent of the patient and ethical approval of FEHI ethics committee was taken.

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