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Case Report

Excision of 93 loose bodies of synovial osteochondromatosis in the left ankle: a case report

Respati S. Dradjat*, Ananto S. Pradana, Fajar S. Salim, I. Gusti Ngurah A. A. Oktafandi

Department of Orthopaedics and Traumatology, Faculty of Medicine, Universitas Brawijaya-Saiful Anwar General Hospital, Malang, East Java, Indonesia

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***Correspondence:**
Dr. Respati S. Dradjat,
E-mail: respatisdradjat@ub.ac.id

ABSTRACT

Primary synovial osteochondromatosis is an uncommon benign joint disorder characterized by the formation of cartilaginous bodies within the synovial of the different joints, tendon sheaths, and bursae. Loose bodies occur in the late stage of the disease. Excision of loose bodies is needed to treat synovial osteochondromatosis. A 20-year-old female patient presented to us with a chief complaint of pain, swelling, and discomfort sensation in the left ankle while walking. Plain X-ray on her left ankle showed loose bodies surrounding the ankle. We performed excision to remove the loose bodies. Histological examination confirmed the diagnosis. The range of motion (ROM) of the ankle increased after surgery. The patient was able to walk more comfortably. Synovial osteochondromatosis is considered benign. In this case, open excision was chosen because the ankle joint is not amenable to arthroscopy. Follow up is needed to detect early recurrence and transformation of malignancy.

Keywords: Excision, Loose bodies, Synovial osteochondromatosis

INTRODUCTION

Primary synovial osteochondromatosis, also known as Reichel's syndrome, is an uncommon benign joint disorder characterized by the formation of cartilaginous bodies within the synovial of the different joints, tendon sheaths, and bursae. It most commonly involves a large joint such as the knee, hip, and elbow, but the presence in smaller joints has been reported. The etiology is still unknown.[1] H.T. Jones first reported it in 1924.[2]

It is hypothesized that fibroblast growth receptor factor receptor-3 (FGF and FGFR3) is responsible for the formation of the loose bodies. They have roles in endochondral bone formation, and active mutation in FGFR3 are the cause of loose bodies in synovial osteochondromatosis. We described here a case report of synovial osteochondromatosis in ankle along with clinical, radiological, and pathological findings.

CASE REPORT

A 20 year old female was admitted to the hospital due to pain and swelling in her left ankle for 15 years, which more painful and uncomfortable while walking. The patient did not have the same history of complaints in the family regarding her current complaint. No history of trauma involved her left ankle. On physical examination, there was a ROM limitation of the ankle due to the patient's inability to dorsiflex the ankle fully. The examiner observed swelling at the ankle, but no atrophy nor deformity was found. Moreover, the patient felt discomfort while she is walking. On radiological examination, there were multiple radiopaque suggesting the loose bodies surround the ankle in the plain X-ray.

We did an excision to remove the loose bodies. The incision was made at the lateral and medial side of the ankle. A total of 93 of loose bodies were found in this

case. The loose bodies were examined histologically to confirm the diagnosis.

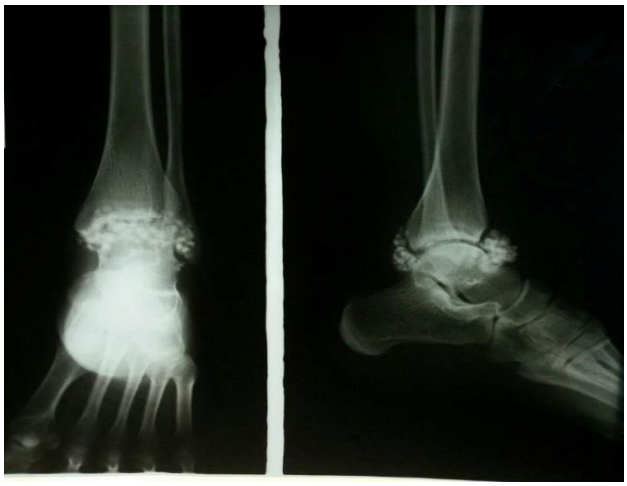

Figure 1: Plain X-ray preoperative.

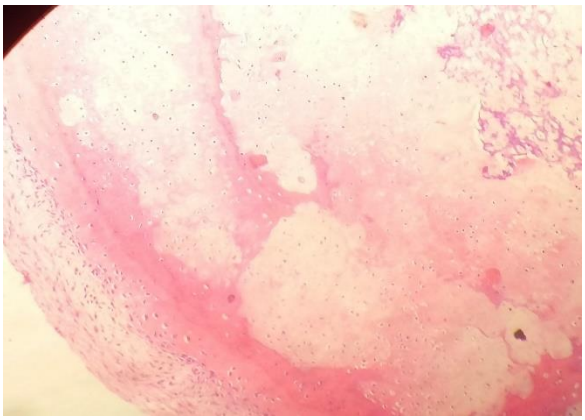

Figure 2: Histopathology of synovial osteochondromatosis.

We are reporting a case of synovial osteochondromatosis in the ankle treated by excision of the loose bodies (Figure 1, Figure 2, and Figure 3). A total of 93 loose bodies were extracted after the excision (Figure 4).

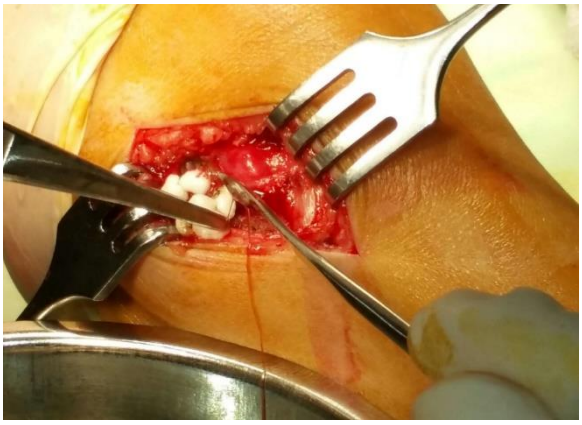

Figure 3: Open excision of the ankle.

The patient recovered without any complications postoperatively. There was no sign of infection at the incision site. ROM of the ankle improved, and the patient felt more comfortable while standing and walking (Figure 5).

Figure 4: Multiple cartilaginous nodules (loose bodies) in synovial osteochondromatosis. A total of 93 of loose bodies were found.

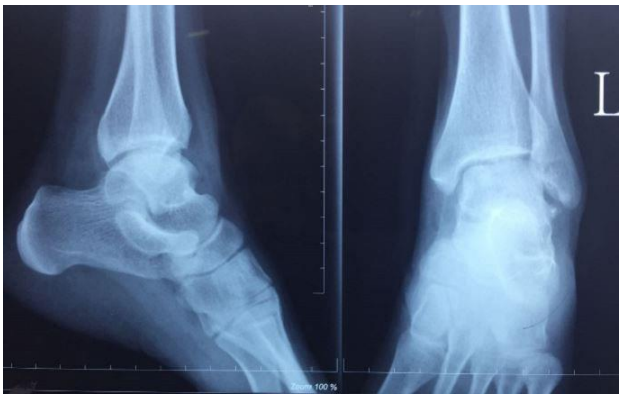

Figure 5: Plain X-ray postoperative.

DISCUSSION

Synovial chondromatosis is a chronic progressive disease whose etiology is unknown.[1] The disorder was first reported by Jones HT in 1924.[2] It is typically monoarticular, with large joints being most involved. However, the involvement of a smaller joint, such as the ankle, is a rare condition.[3] It is characterized by multiple cartilaginous nodules within the synovial or tenosynovial membrane.[4] It is present in males twice as often in females, usually in the third to fifth decades of life.[5]

Synovial osteochondromatosis is originating from chondrocyte metaplasia within the synovium, forming interarticular and extraarticular pedunculated cartilage. The cartilaginous may ossify, proliferate, or break free.[5]

Trauma is considered the risk factor of the disease, although no statistically reported in any literature.[6]

In 1977, Milgram classified synovial osteochondromatosis based on the location of the loose bodies within the joint and the pathologic findings of the synovium and the loose bodies. He described phase one as intrasynovial involvement of cartilaginous loose bodies within the synovial membrane. Metaplasia of the synovial intima occurs in this phase. Phase two was considered nodular synovitis, and loose bodies are present in the joint. In phase three, the loose bodies remain, but the synovitis has resolved.[7]

Signs of the disease are pain, swelling, joint effusion, decreased ROM, and sometimes atrophy of adjacent muscle with loose bodies may be palpable beneath the skin.[8] Patient may felt locking or clicking of the joint. The pain exacerbated by physical activity.[6] The role of trauma or genetic is still unknown.[9]

In the radiographical examination, calcifications occur in 70 to 95% of cases. Multiple calcified bodies, smooth, round with variable size in the joint capsule, are findings with diagnostic significance. MRI can be used if plain radiograph cannot demonstrate ossification or calcification.[3]

In histopathological examination, nodules have a mucus-covered, hyaline cartilage shell with a cartilaginous or osseous center. Their shape is commonly spherical or ovoid and ranges in size from several millimeters to several centimeters in diameter. The nodules may be solitary or multiple.[10] Microscopic shows fragment of articular cartilage, zonal ring-like calcification, and superficial loose connective tissue.[11]

Synovial osteochondromatosis can be recurrent or even transform into malignancy. The recurrence rates are ranging from 5% to 11% after surgical excision. Malignant transformation occurs 5% of cases to become synovial chondrosarcoma.[10]

CONCLUSION

Synovial osteochondromatosis is considered benign. Open excision was chosen in this case because the ankle joint is not amenable to arthroscopy. Follow up is needed to detect early recurrence and transformation of malignancy.

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