

Arthroscopic Management and Treatment of Synovial Chondromatosis and Talus Osteochondral Defect in the Ankle Joint. A Case Study

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SUMMARY

Synovial chondromatosis has an unknown aetiology and is a benign lesion especially seen in joints like the knee and hip. However, it is extremely rare in the ankle joint. A review of the literature shows that ankle joint chondromatosis is usually treated by arthrotomy. However, excision of loose bodies by arthroscopy in the ankle joint is not common. Arthroscopic surgery provides a wide visualisation area for excision of loose bodies, allowing for synovectomy and microfracture. Our patient was a 60-year-old female who presented to our clinic with primary osteochondromatosis and osteochondral defect. Our patient underwent arthroscopic excision of loose bodies, microfracture and synovectomy. Arthroscopic management can be successful in selected patients with synovial osteochondromatosis localized to the ankle joint.

Key words: synovial chondromatosis, ankle joint, arthroscopy, talus microfracture

BACKGROUND

Synovial chondromatosis has an unknown aetiology and is a benign lesion especially seen in joints like the knee and hip after ossification of synovial based metaplastic cartilaginous nodules [1]. It is extremely rare in the ankle joint. Patients mostly present to outpatient clinics with pain, swelling and limited motion. Lee et al. reported that the disease mostly occurs after trauma, in the 3rd to 5th decade and with a preference for males [2]. Osteochondromatosis has been classified into 3 stages. At an early stage, there are no loose bodies, only intrasynovial changes. In a transition stage, cartilaginous nodules can be observed. Loose bodies are seen in a late stage [3].

A review of the literature shows that ankle joint chondromatosis is usually treated by arthrotomy. However, excision of loose bodies by arthroscopy in the ankle joint is not common [4-5].

For three decades, arthroscopy has been used in various joints for diagnosis and treatment. Arthroscopy has advantages like obtaining a wide view angle and evaluating the articular surface and cartilage. In addition, early rehabilitation, less morbidity and decreased wound problems are also advantages of arthroscopy. Accordingly, we chose to perform an ankle joint arthroscopy in our patient.

CASE REPORT

A 60-year-old female patient presented to our clinic with increasingly pain and progressively limited range of motion in her left ankle. She mentioned that the pain had started 2 years before and had increased during the preceding three months. She had no sys-

temic conditions. Her body mass index was calculated at 30.11. Physical examination revealed palpable loose bodies on the anterior aspect of the ankle joint. She presented antalgic gait. Active dorsiflexion of the ankle joint was severely limited and passive dorsiflexion was $< 5^\circ$ and painful. Plantar flexion was $< 25^\circ$. No instability was detected. There were no vascular or neurological abnormalities in the ankle and foot. Imaging studies revealed multiple chondromatosis lesions 3-10 mm in size on the anterior aspect of the ankle joint. MRI demonstrated that the lesions were calcified and well-circumscribed. There was also a 12x10 mm chondral defect on the lateral aspect of the talus joint surface (Figure 1). Laboratory studies were within the normal range. She was qualified for arthroscopic excision and microfracture.

The surgery was carried out under spinal anaesthesia with a pneumatic tourniquet applied. Standard anteromedial and anterolateral portals were used. Multiple loose bodies and hypertrophic synovia were seen (Figure 2). After partial synovectomy, loose bodies were excised (Figure 3). Then a microfracture was performed at the lateral aspect of the chondral surface of the talus. Portals were closed primarily and a suction drain was inserted. A short leg splint was applied.

The suction drain was removed on the 1st postoperative day. The patient was discharged from hospital on the 2nd postoperative day.

The patient was invited to the outpatient clinic for a follow-up examination. One surgeon examined and evaluated the physiotherapy of the patient. After two weeks sutures were removed. Ankle movements were evaluated and we found that there was no pain with



Fig. 1. MRI and CT images of the patient before surgery

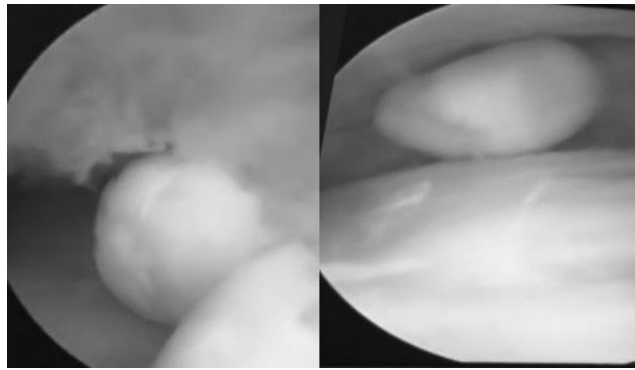


Fig. 2. Images of the ankle joint at arthroscopy



Fig. 3. Excised loose bodies of the ankle and x-ray radiograph of the ankle after surgery

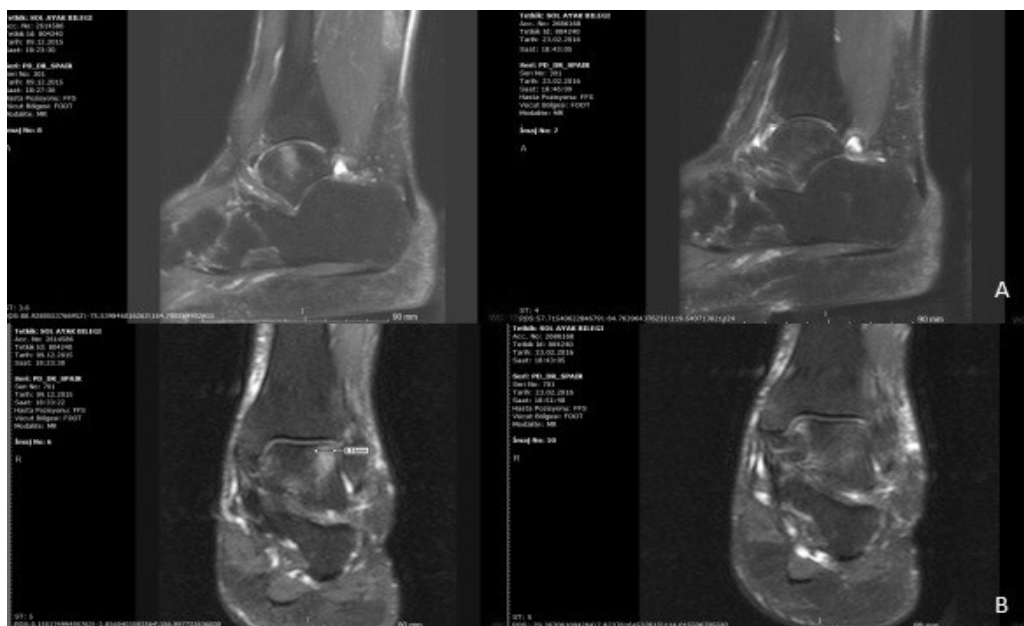


Fig. 4. Comparison of preoperative and 3-month postoperative MRI image of the osteochondral talar defect

passive movements of the ankle. However, weight bearing was not allowed on account of the talar microfracture. In the sixth week of follow-up, there was no pain with active and passive exercises and pain with active ankle movements had subsided almost completely. There was no joint movement restriction in comparison to the other ankle and partial weight bearing was allowed by 10% of body mass. In the third month of follow-up, an MRI scan was performed and compared with the previous MRI. The talar lesion and edema around the osteochondral lesion had regressed (Figure 4). The patient is still followed up.

DISCUSSION

Synovial chondromatosis is a disease characterised by the presence of multiple loose bodies originating from benign synovial metaplasia. The disease can develop secondary to a trauma, degenerative joint disease, rheumatoid arthritis and arthritis of tuberculosis [6]. The knee is affected most often (%50), followed by the hip and elbow joints [4]. Primary osteochondromatosis of the ankle joint is regarded as extremely rare [7]. We diagnosed our case as primary synovial chondromatosis as a result of our patient not having experienced a trauma or inflammatory condition.

The main symptoms of osteochondromatosis are pain, a limited range of motion and locking of joints. Osteochondromatosis is a progressive and self-limiting disease [7].

Chondroid calcifications can be seen as well-circumscribed multiple intraarticular lesions on plain radiographs, although MRI assessment is important. Evaluation of synovial thickness, the intraarticular

chondral surface and synovitis findings can give the surgeon crucial information [8]. While conservative treatment can be used in asymptomatic patients, surgery is more beneficial for symptomatic patients. According to the literature, chondromatosis of the ankle joint is mostly treated by open excision [5]. Progressively increasing pain and limited motion are also described in the literature. However, it cannot be ascertained whether the pain was associated with the osteochondral lesion on the talus or the loose bodies. Arthroscopic surgery is crucial and we preferred it for diagnosis of the chondral surface and treatment of both the osteochondral lesion and excision of loose bodies and early rehabilitation [9]. Advantages of arthroscopic surgery listed in the literature include the provision of a wide visualisation area allowing for synovectomy and excision of loose bodies. Although arthroscopic surgery has its advantages, arthrotomy is still the basic technique in the literature [5].

CONCLUSION

Our patient underwent arthroscopic excision of loose bodies and, in addition, a synovectomy. We did not encounter in published papers reports about open surgery for conditions of the talus and chondral surface of the tibia. The superiority of arthroscopy for evaluation of chondral surfaces has been indicated in many case reports [10]. In addition we also performed a microfracture after the synovectomy and loose body excision. We have been unable to find a similar case report in the literature. We therefore believe that our case report could contribute to the literature.

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