Synovial Chondromatosis of the Ankle Joint: 2 Cases Treated by Open Arthrotomy and Synovectomy

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Purpose

Synovial Chondromatosis is a rare arthritic condition and usually presents in large joints like the knee and hip. The incidence in the foot and ankle joints is extremely rare, only a few cases are reported in the literature. (1,3,4,6,8,9) We had two separate cases of synovial chondromatosis present to our office within a three year span. Due to the scarcity of this disease we present these two cases to provide added depth to the current literature.

Literature Review

Synovial Chondromatosis (SC) is a benign, monoarticular synovial joint disease that can be extra or intra-articular (11). It is characterized by metaplastic cartilaginous foci/nodules in the synovial cavities of joints, tendons, bursae, or tendon sheaths (1,4,9). The exact stimulus causing the metaplastic process is still unknown (1,10). There is a predilection for males that has been reports at a 2:1 ratio (1,5,6,7,9). It most commonly appears between the 3rd and 5th decades of life (9,10). SC is an extremely rare condition in the ankle joint (1,3,4,6,8,9,10). Larger joints such as the elbow, hip or knee are usually involved (1,3,4,9). More than 50% of the reported cases involve the knee joint (1). Reported cases in the foot include the tibiotalar, subtalar, calcaneocuboid, and metatarsophalangeal joints. (1,3).

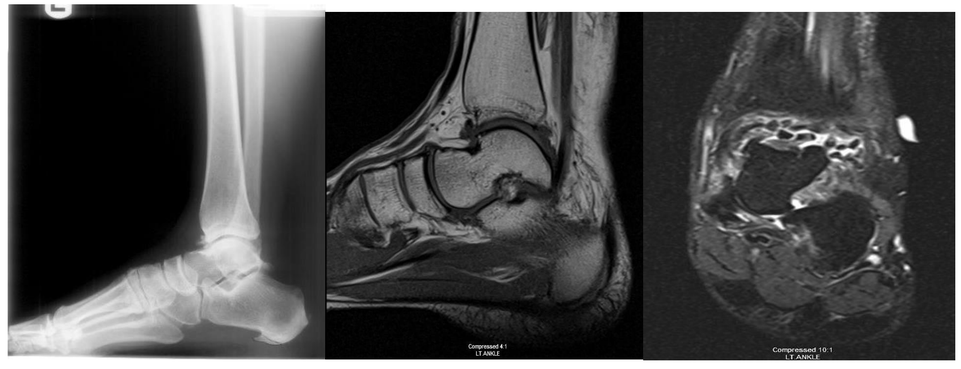
Patients typically have complaints of pain, stiffness, swelling, with decreased range of motion with or without locking, and palpable masses (1,2,3). This can limit activity and consequently lead to joint damage. Imaging consists of radiographs and MRI being the agreed upon studies. Plain radiographs show multiple, round, calcified loose bodies (1). MRI reveals loose bodies with low signal on T1-weighted images, and high signal intensity on T2-weighted images (4). Treatment of choice includes open or arthroscopic surgery with/without synovectomy (1,2,10,11). Diagnosis by a pathologist is paramount because some cases have been found to transform to a low-grade chondrosarcoma (4).

Malignancy has been reported to be a rare occurrence being roughly 5% (2,4,10) When there are multiple recurrences of the disease the rate of malignancy increases. Recurrence happens in 3-23% of cases (10). Typically the disease leads to a low grade chondrosarcoma (2). Reports showed that irrigation with hydrogen peroxide reduced recurrence (2). Histologic analysis should be performed to rule out malignancy (2,4).

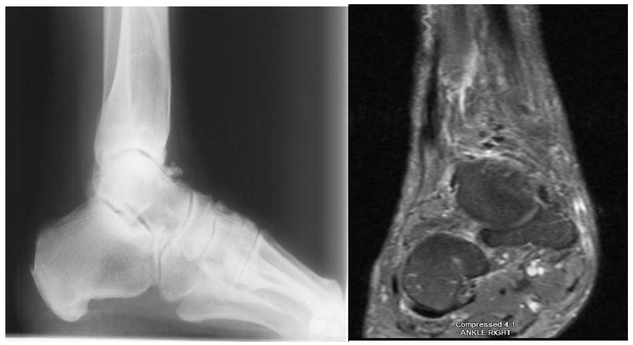
Financial Disclosure
None

Case 1

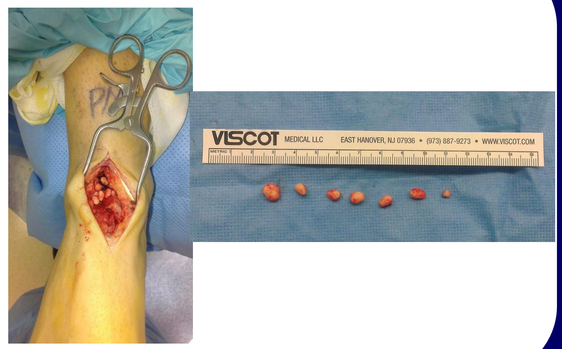
A 48 year old female presented with greater than one year history of sharp and achy pain to the anterior left ankle. Physical exam revealed several small palpable nodules at the anterior ankle. ROM is smooth without any grinding or locking. Muscle strength and neurovascular status is intact. Radiographs revealed multiple radiopaque masses located anterior to the ankle joint. MRI demonstrated tibiotalar joint effusion with multiple low density round bodies measuring up to 5mm with the largest measuring 4 x 7mm suggestive of synovial metaplasia with osteochondromatosis. Treatment include a left ankle open arthrotomy with synovectomy. A total of 11 loose bodies were removed in toto. Pathology diagnosed cartilaginous fragments with focal ossification and perichondral fibrosis. No signs of malignancy were reported. Patient continued to be symptom free 2 weeks post-surgical intervention. She followed up at 31 months post operation without new ankle complaints. She continues to be symptom free. No recurrence followed.



Case 2



A 53 year old male presented with longstanding sharp and achy right anterior ankle pain. Pain is worse when walking uphill and limits him at work where he finds himself limping around. His neurovascular status is intact. ROM is limited in dorsiflexion with crepitation. Radiographs show anterior tibia and talus spurring and no widening to the medial or lateral clear spaces. MRI displayed joint effusion with loose bodies. Patient was treated with an open ankle arthrotomy and multiple loose bodies were identified. Seven total bodies were retrieved. Pathology confirmed the diagnosis of osseocartilaginous tissue compatible with loose bodies. Measurements ranged from 3 to 8 mm. At the three week mark the patient was pain free and was transitioned out of a CAM boot. At six weeks he was pain free. He followed up at 19 months and continued to be pain free. There was no recurrence.



Discussion

Synovial Chondromatosis is a rare, benign monoarticular disease characterized by cartilaginous loose bodies in the synovium of joints, tendons, bursae, or tendon sheaths (1,4,9). It usually affects larger joints. Synovial chondromatosis of the ankle is extremely rare making reports in the literature insufficient. Treatment is through open arthrotomy with or without synovectomy, and arthroscopy. Recurrence is rare but is significant. It has been shown that recurrence increases the likelihood of malignant transformations. Galat et. al. presented 8 cases and reported that 3 cases had recurrence. Of those 3 cases all 3 went on to a BKA and 2 had low grade malignancy transformation to chondrosarcoma. No features of malignancy were found in our patients. Continued monitoring is of vital importance to recognize recurrence and possible malignant transformations.

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