Case Report

Primary ankle synovial chondromatosis in a young post-partum female

Pallav Mishra, Prashant K. Mishra[1], Divya Pandey[2], Brajendra N. Tripathi[3]

Department of Orthopedics, Sports Injury Centre, Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi, [1]Department of Anesthesiology, Uttar Pradesh Rural Institute of Medical Sciences and Research, Saifai, Etawah, [2]Department of Obstetrics and Gynaecology, NDMC Medical College and Hindu Rao Hospital, Delhi, [3]Department of Radio-diagnosis, Moti Lal Nehru Medical College, Allahabad, Uttar Pradesh, India

Address for correspondence:
Dr. Pallav Mishra,
26-A, Pocket 4, Mayur Vihar Phase -1, New Delhi - 110 091, India.
E-mail: drpallavmishra1@gmail.com

ABSTRACT

Primary Synovial Chondromatosis is a rare, benign disorder. A 23-years-old, 4 months post-partum female presented with vague foot pain, found to be having Primary ankle synovial chondromatosis on clinico-radiological examination and was treated by arthroscopic removal of loose bodies with partial synovectomy.

Keywords: *Ankle, arthroscopic synovectomy, primary synovial chondromatosis*

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Introduction

Primary Synovial Chondromatosis (PSC), a rare benign disorder of unknown etiology, is characterized by the presence of multiple cartilaginous nodules in and around an otherwise normal joint. The mesenchymal cells at the junction of synovium and articular cartilage proliferate to form nodular foci of hyaline cartilage that may detach and remain as loose bodies within the articular cavity and synovial folds. With male sex predilection, it most commonly affects third to fifth decade of life, although clinical onset may vary from childhood to the seventh or eight decade of life.[1] Joints getting affected in descending order of frequency are knee, hip, gleno-humeral joint, elbow and ankle, although any joint may be involved.[1]

We report this case with clinico-radiological features of PSC, of the ankle in a young post-partum female patient discovered as an incidental finding. She came with complaint of vague foot pain and was treated with arthroscopic synovectomy with removal of the osteochondromatous lesions within the joint.

Case Report

A 23-years-old 4-months post-partum primiparous female presented with vague pain in left foot developing and increasing gradually over last 4 months. The pain was not localized to any particular region of the foot and the ankle was pain free. There was no history of any precipitating factor like trauma to the foot or ankle. The symptoms dated back to the early post-partum period which she initially ignored as it subsided on resting. The pain aggravated on walking. With this complaint when she turned up for her routine post-partum visit, she was referred by her treating Obstetrician to the Orthopedics Department.

Physical examination revealed mild, non-tender swelling present on the dorsal aspect of the left ankle joint. All movements at the joint were normal except the dorsiflexion movement which was 10 degrees less on left side as compared to the right side. Neurological examination was unremarkable.

The imaging study which was a simple weight bearing plain radiograph of the ankle [Figure 1] showed the picture characteristic of synovial chondromatosis.

Arthroscopic removal of the loose bodies along with partial synovectomy under spinal anesthesia was performed. The gross examination showed multiple loose bodies (osteochondral nodules) which were confirmed histologically.

Following arthroscopic synovectomy with removal of osteochondral nodules, the patient had significant symptomatic

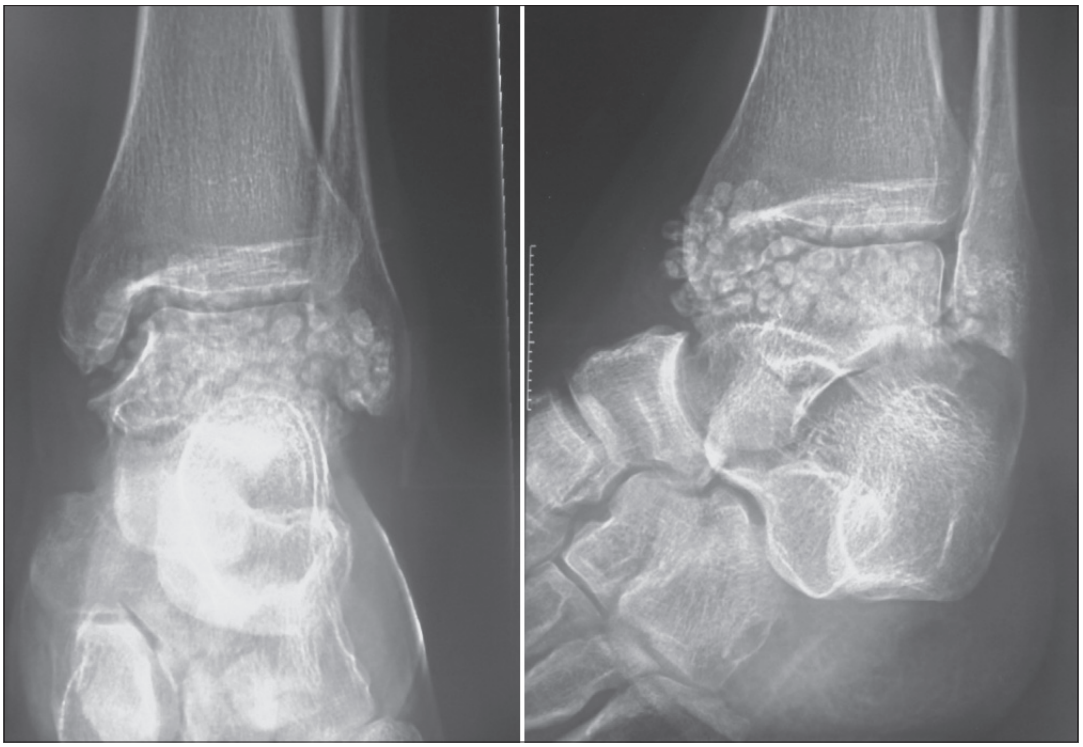

Figure 1: Plain weight bearing radiograph of left ankle joint showing multiple small fluffy calcified opacities at the anterior aspect of the ankle joint suggesting loose bodies along with mild soft tissue swelling. Features are suggestive of synovial chondromatosis

relief in early post-operative period and was completely asymptomatic at the time of stitch removal (i.e. 2 weeks) and at further follow up visits at 1 month, 6 months and 1 year. The post-operative radiograph done after 2 weeks was absolutely normal [Figure 2].

Discussion

Synovial Osteochondromatosis is a rare benign monoarticular disease characterized by synovium metaplasia to form cartilaginous bodies affecting more commonly the young and middle aged males.[1,2] There are three stages of pathogenesis (1) active synovial disease (2) transitional lesion with both active intrasynovial proliferation and free loose bodies with no demonstrable intra-synovial disease.[3]

Clinical presentation is often insidious starting from non-specific symptomatology like vague history of pain and stiffness in the affected joint. There is often a history of sensation of clicking, locking or catching in the afflicted joint. Physical examination includes point tenderness, diminished quality and range of joint motion and presence of palpable mass adjacent to the joint.[4-6]

Radiographic finding of multiple intra-articular bodies of same shape and size with "ring of arc" appearance of chondroid mineralization are suggestive of synovial chondromatosis.[7] Magnetic Resonance Imaging (MRI) can demonstrate the degree of synovial thickening, thus differentiating between synovitis and effusion. On T1 weighed images, the calcific bodies demonstrate

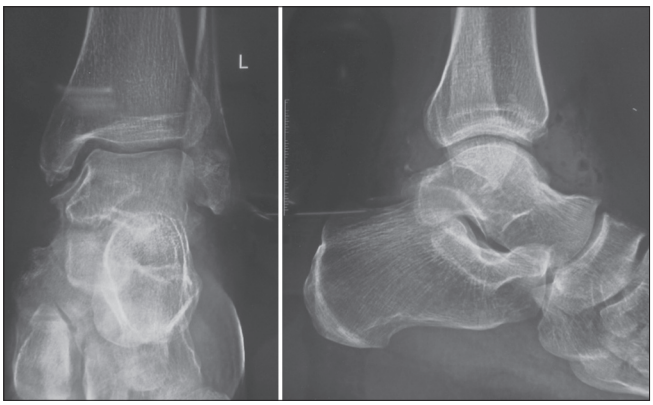

Figure 2: Normal post-operative radiograph of the same patient

intermediate or low signal intensity whereas T2 weighed images typically show high internal signal intensity. Intravenous contrast can enhance these characteristics.[7,8] In contrast, Computerized Tomography (CT) scans show calcified bodies optimally with better visualization of extrinsic bone erosion, thus can be the preferred imaging modality over MRI.[7] Histo-pathology examination shows a "cobble-stone"appearance of lobulated hyaline cartilage surrounded by synovium with some degree of nuclear atypia (which is not seen in secondary synovial chondromatosis) without presence of mitosis.[7]

In addition to the involvement of ankle joint which is fairly rare for synovial chondromatosis, this case was also unique

in its presentation which was in the form of non-localizing vague foot pain, (ankle joint being completely pain free) that too in a young post-partum female. The condition was discovered on clinical examination, diagnosed radiologically and further confirmed by histopathological examination. Standard weight bearing radiograph of the left ankle showed multiple intra-articular bodies of about 2-3 mm diameter each of cartilaginous origin situated in the anterior aspect of the left ankle without any evidence of adjacent cortical disruption (ruling out malignancy), osteophytic proliferation, cyst formation or presence of degenerative changes within the affected joint. So just a plain radiograph with the characteristic appearance helped in clinching the diagnosis. There was no history of previous trauma or any systemic inflammatory disease. Thus based on clinical and radiographic findings, the diagnosis of Primary Ankle Synovial Chondromatosis was reached.

The chief complaint of the patient at first look seemed to be unrelated to her ankle synovial chondromatosis per se, but our decision of arthroscopic removal was taken in view of the probable stretching of ligament and tendons leading to the foot pain which as per history aggravated on walking and subsided on rest.

The patient responded well to the arthroscopic synovectomy with significant symptomatic relief by the time of stitch removal i.e. 2 weeks and was completely pain free at follow-up. Further annual follow up has been planned for the patient.

Few cases of ankle synovial chondromatosis have been reported so far. While patient was a 58-year-old post-menopausal female with asymptomatic presentation in one case.[9] It was a prepubescent 7-year-old boy in another.[10] The involvement of ankle joint and the presentation in post-partum female makes this case unique, with no matched reference on literature search.

Conclusion

Synovial Chondromatosis is an uncommon entity with rare involvement of the ankle joint and with male sex predilection. In our case, the patient was a young post-partum female with short history of vague foot pain, where diagnosis was made on clinico-radiological examination and was treated successfully arthroscopically.

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