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Synovial chondromatosis of the elbow: A case report and review of literature

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Abstract

Synovial chondromatosis is not a very common disorder globally. We came across a case of chondromatosis of elbow which is even lesser involved joint as compared to other joints. Usual presentation is mechanical symptoms like locking or restriction of movement, pain and occasionally nerve compression or bursitis. It was treated by excision of the lesion along with synovium. Histopathology confirmed secondary chondromatosis. Although both surgical and non surgical treatments are described but large numbers of the patients are needed to know the indication and outcome of both the modalities. A long term follow-up is required to know the incidence of complications like secondary osteo-arthritis.

Keywords: Synovial Chondromatosis, elbow

Introduction

Synovial chondromatosis is an uncommon benign condition in which metaplasia occurs within the synovial membrane of joint, sheath and tendon. Knee and hip are the most commonly affected joints as compared to shoulder, elbow and other joints.

In the present article we would discuss a case of synovial chondromatosis of elbow who was treated at our hospital.

Case Report

A 37 year old right hand dominant male presented to our hospital with the complaint of pain and swelling in the left elbow of three months duration. Pain was insidious in onset, moderate in intensity, gradually progressive, aggravated by movement and relieved by rest and medication. The patient also had progressive restriction of the movement in the elbow. Physical examination revealed a firm swelling measuring 4x3 Cm in dimensions, on the medial aspect of the left elbow. The swelling was non adherent to the skin or bone, did not show any fluctuation or trans-illumination. Range of motion was restricted by 10 degree short of full extension and further flexion being possible till 120 degrees. Pronation and supination movements however were normal as compared to the opposite elbow.

X-ray of the elbow was normal but MRI scan revealed calcified swellings on posterior, medial and to some extent on anterior aspect of the joint (Figure 1). All other investigations like ESR, CRP and Complete blood counts were normal.

Based on clinical examination and investigations a provisional diagnosis of synovial swelling due to chondromatosis was made and patient advised to undergo surgical excision of the lesion. Patient underwent surgical process once declared fit at pre-anesthesia consultation. Lateral approach to the elbow was used to explore the lesion. Meticulous efforts were taken to save posterior interosseous nerve from injury and both the anterior and posterior extents of the lesion were approached through blunt dissection anterior and posterior. Multiple small, whitish cartilaginous bodies were found to be embedded in thickened synovium (Figure 2) which were excised along with subtotal synovectomy and sent for histopathology examination. Wound was closed in layers and compression bandage was given. Immediate post-op range of motion was allowed and sutures were removed in due course. Patient was followed up at regular intervals.

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Histopathology revealed focal synovial hyperplasia, lobules of cartilage some of which were covered with synovium (Figure 3). Sub synovial tissue had congestion and chronic inflammation. Atypia or binucleation were absent. Thus the diagnosis of secondary synovial chondromatosis was confirmed.

Patient was re-examined in out-patient department one year post-op and found to be faring well, had attained full range of motion as compared to the normal elbow. Surgical scar had healed with primary intention.



Fig 1: MRI



Fig 2: Intra-operative

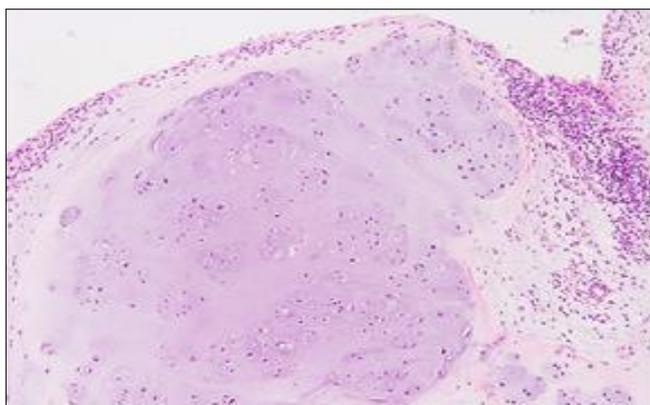


Fig 3: Histopathology Image showing synovium and cartilage

Discussion

Synovial chondromatosis presents clinically with swelling which may be painless or painful, locking or restriction of the movement [1]. Sometimes the patient may present with symptoms and signs of peripheral nerve compression involving ulnar and posterior interosseous nerve at elbow [2, 3]. Our Patient had restriction of movement however we did not find any symptoms related to the peripheral nerve involvement. This may be due to small size and early detection of the lesion.

Roentgenography in our case did not reveal any lesion but MRI was helpful to reveal the lesion. Kamineni S *et al.* [1] had also reported that only five of the seven primary cases had radiologically visible lesion.

Synovial chondromatosis has three phases. Phase 1 is active disease which involves intrasynovial lesion without loose body. Phase 2 is transitional stage with synovial lesion as well loose bodies in the joint cavity. Phase 3 is late phase with multiple loose bodies however; synovial lesion is inactive [4].

Primary chondromatosis on histopathological examination shows synovial thickening with clustered chondrocytes. The chondrocytes show nuclear atypia, pleomorphism or binucleation [5]. Secondary chondromatosis may reveal foci of implanted articular cartilage and the cells don't show atypia or binucleation [5]. On histological examination we found foci of chondrocytes in the synovial tissue but atypia or binucleation were absent. Thus, we concluded it as secondary chondromatosis.

Patients with chondromatosis have been treated both with non surgical and surgical methods. However, surgery is the more favored treatment [1, 3]. We had considered surgical intervention keeping in mind the mechanical symptom like movement restriction. The follow up at one year had satisfactory outcome with full movement and function regained.

Conclusion

Chondromatosis of the elbow is an uncommon condition. Clinical suspicion, early detection and surgical excision lead to good outcome. Long term follow-up and large number of cases is needed to find out long term benefits, recurrence, and incidence of secondary arthritis after surgical excision.

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