

## Synovial Chondromatosis Elbow in a young male-A Rare Case report

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### Abstract

**Background-** Synovial chondromatosis is benign, proliferative disorder of synovium which occurs due to metaplastic changes in synovium. The characteristic feature of disorder is presence of cartilaginous nodules in large number in synovium. **Case presentation-** We report case of synovial chondromatosis of elbow in 18 years old male, presenting with history of pain, restricted motion and locking of left elbow.

**Keywords:** Synovial chondromatosis, MEPS score

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### Introduction

In 1918 Henderson was first to report synovial chondromatosis around elbow[1]. It commonly presents as pain and movement restriction and rarely locking can also occurs[2-3]. The disorder is commonly mono-articular and most frequently involved is knee joint[4]. It is commonly seen in 30-50years age group and male are involved more than females[5].

Synovial chondromatosis is benign, proliferative disorder of synovium which occurs due to metaplastic changes in synovium. The characteristic feature of disorder is presence of cartilaginous nodules in large number in synovium[6-8]. Few case of elbow synovial chondromatosis are reported. Treatment of choice of synovial chondromatosis is open or arthroscopic removal of loose bodies and synovectomy[9]. We report case of synovial chondromatosis of elbow in 18 years old young male.

### Case presentation

A 18 years old young male, presented with history of pain, restricted motion and locking of left elbow since one year. In physical examination, limitation of extension was 30° whereas flexion was 90°. Pronation and Supination were not affected. On palpation, painfull mass at posterior and anterior aspect of elbow joint. Neurovascular status of limb was normal.



Fig 1: Showing preoperative extensor block around left elbow

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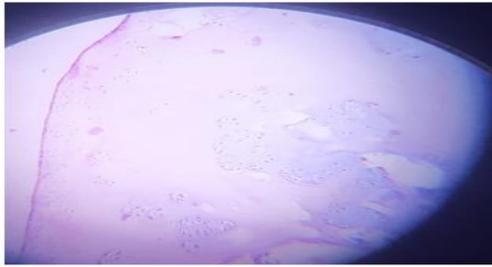


Fig 2: Preoperative digital radiograph ap and lateral view showing synovial osteochondromatosis of elbow

Radiograph of left elbow joint showed multiple calcified bodies in elbow joint with joint space narrowing. Magnetic resonance imaging (MRI elbow) showed distribution of multiple calcified bodies around anterior and posterior aspect of elbow joint. Blood investigations were done to rule out infection and mono-articular inflammatory arthritis. Open surgery was performed using standard posterior midline approach. Then lifting medial and lateral triceps were lifted olecranon fossa was exposed multiple loose bodies were removed and olecranon fossa was cleared. Removal of loose bodies situated anteriorly was done by making medial and lateral gutters followed by and capsulotomy and synovectomy subsequently. Then range of motion seen intra-operatively and improvement of preoperative extension and flexion of joint was noted. We removed and counted a total of 189 loose bodies and that to of varying size from few millimeters to 2.5cm.



Fig 3: Showing multiple synovial osteochondromatosis



**Fig 4: Showing histopathological slide suggestive of synovial osteochondromatosis**

Tissue collected during surgery was sent for histopathological examination and diagnosis was confirmed.

Initially for 2 weeks postoperatively above elbow plaster was given and after suture removal mobilization started.

At 6<sup>th</sup> and 12<sup>th</sup> month patient was assessed both clinically and radiologically showed volume reduction of elbow, improvement in flexion-extension of elbow. The patient was assessed using Mayo elbow performance score (MEPS)[9] pre-operatively score was 50 and 12<sup>th</sup> month follow-up score was 85 which showed significant improvement.



**Fig 5: Showing digital radiograph ap and lateral view at 1 year follow up**



**Fig 6: Showing postoperative improvement in extensor block at 1 year**

#### Discussion

Synovial chondromatosis is benign, proliferative disorder occurring due to metaplasia of synovium. The disease has characteristic of large number of cartilaginous nodules[6-8]. It is usually mono-articular with knee joint commonly involved<sup>4</sup> whereas involvement of elbow is rare as proved by studies conducted by Mueller et al(20 cases) and kamineni et al(12 cases)[11,12].

Synovial chondromatosis presents with pain, swelling, restricted range of motion and even snapping[2,3]. Clinical assessment, radiographs, MRI and CT-scan helps in making diagnosis. HPE helpful in confirming diagnosis. No cytogenetic analysis was done in our case but previous studies showed role of HLA-DR and CD-68 gene expression[6,13]. In our case we used digital radiograph and MRI for making diagnosis. Clinical examination, radiograph, CT-scan, MRI helpful in making early diagnosis. Synovial chondromatosis can develop secondary to osteochondral fractures, osteochondritis dissecans, infective arthritis[14]. Differential diagnosis of synovial chondromatosis can be arthritis, chondrosarcoma, pigmented villonodular synovitis, synovial haemangioma[15].

The treatment of synovial chondromatosis involves removal of loose body followed by capsulotomy and synovectomy. In our case we performed open synovectomy and loose body removal using posterior midline approach for elbow, now days arthroscopic removal is also done at many centres as it helps in early rehabilitation and less soft tissue injury[16,17].

In 12 months follow-up no malignant transformation was seen in our case as Anract et al in his study stated osseous involvement and progression of clinical findings can lead to malignant transformation.

#### Conclusion

Synovial chondromatosis is rare disorder with mono-articular involvement. For making diagnosis clinical assessment, radiological findings and HPE all are important for making diagnosis. Treatment is loose body removal along with synovectomy. Long term follow-up required for recurrence.

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