Open Arthrolysis for a Stiff Elbow because of an unusual Etiology

Prashant Upadhyaya[1,*], Jayant Sharma[2]

[1]DNB Resident, Unique Superspeciality Hospitality Indore.M.P
[2]Associate Professor, Index Medical College Indore.

***Corresponding Author:**
E-mail: Prashant.ju@gmail.com

ABSTRACT

We present a study of open arthrolysis of the elbow for Elbow stiffness due to an unusual aetiology. The range of movement of the elbow, pain scores and functional outcomes were recorded pre- and postoperatively. An improvement in the mean range of movement from 70° (0° to 95°) to 110°(55° to 135°) was obtained in our patients at one year. On the basis of this study, we believe that the results of open arthrolysis for posttraumatic stiffness of the elbow are durable over the medium term.

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INTRODUCTION

In the Elbow Joint because of the presence of three articulations with a single synovial tissue lined capsule and close proximity of the joint capsule to the ligaments and extracapsular muscles and the intrinsic congruity of humeroulnar articulation predispose it to stiffness. The position of minimal intra articular pressure and maximum compliance of normal elbow (resting position) is 70 degrees. If the elbow is immobilized in this position for an extended period of time, the risk of elbow joint capsule, contracture might increase.

CAUSES OF STIFFNESS

- Intrinsic= Intra Articular-
- Post Traumatic Arthritis, Incongruity, Ankylosis, Adhesion, Loose Bodies, Bone Spurs, Synovitis
- Extrinsic= Heterotrophic Ossification, Musculotendinous Contractures

If a patient has an extension deformity of more than 30 degree and flexion of less than 130 degree for a period of more than 6 months post injury should be considered for arthrolysis. Open arthrolysis has been the gold standard for the treatment of post-traumatic stiffness of the elbow. Various techniques and surgical approaches have been described.

CASE REPORT

Our patient was a farmer, 45 year old male with no history of any fracture or major trauma. He presented to us with restricted movements at elbow and tingling along inner side of forearm. Gradually increasing over a period of six months. Took massage and physiotherapy both, with further increase in pain in front of elbow. Restricted extension passive range upto 80 degrees and active extension lag of70 degree. Flexion of 110 degrees.

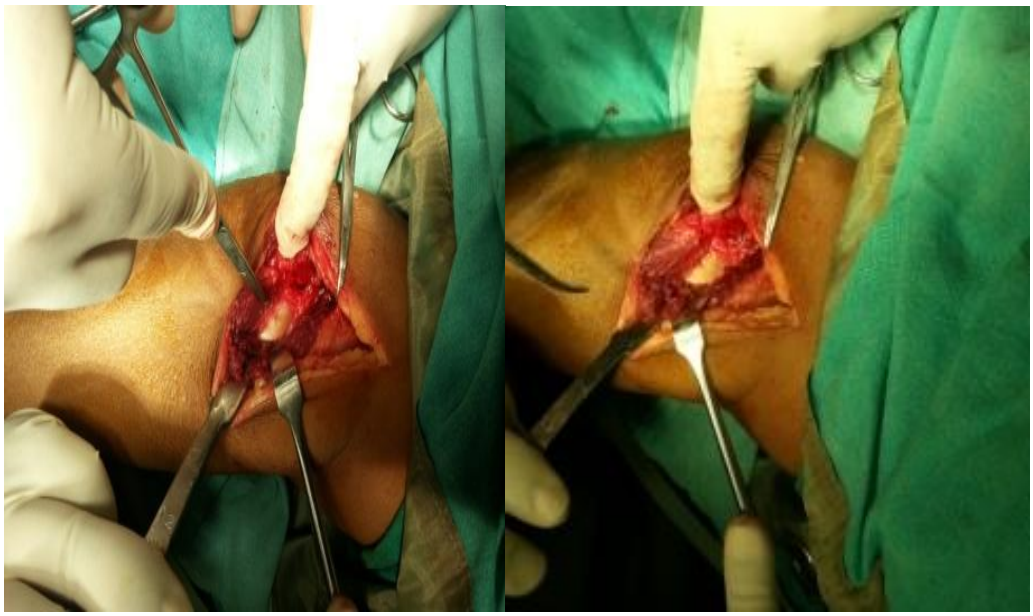
RADIOLOGY

X-ray were taken in ap lateral and oblique views, and were not very conclusive of any myositis, or old fracture or malunion. Only olecrenon osteophytosis were noted along with mild sclerosis around radial tuberosity.

MRI Revealed Lateral Condylar Degeneration and A? Soft Tissue Mass in Superior Radioulnar Joint.

OPERATIVE FINDINGS

Patient was taken up for surgery under brachial block anaesthesia and a tourniquet was applied. Open arthrolysis was performed using an extensive lateral and medial incision. Initially it was opened through a lateral incision, a kocher incision was taken extending from the lateral intermuscular septum laterally, then the capsule was released, lateral collateral ligaments were cut. On exploring further an intra articular ganglion was found at the level of superior radioulnar joint beyound the brachioradialis and pronator teres muscle. Lastly, triceps and brachialis tenolysis was also done.



After release of lateral side the medial side was approached where after releasing the tight band medially, ulnar nerve was identified and released and anteriorly trasnsposed in a fascial tunnel created.(Anterior Transposition)

Intra operative assesment of range of motion was done on table after every tight structures release. That being a guide towards the complertion of the procedure.

POST OPERATIVE PROTOCOL

Stitch removal was done on 10th post-operative day, active range of movement exercises were started and a elbow mobilization brace was given. Physiotherapy was the main stay in obtaining excellent results.

At the end of six months the range of motion was assesed with almost full functional level of extension and flexion arch was achieved. An improvement in the mean range of movement from 70° to 110 degree of flexion and extension of 160 °was obtained in our patients at one year.

Vas of the patient was calculated after 6 months and one year and the end result showed it to be between 0 to 2 for touch, pin prick and pressure.

DISCUSSION

Established loss of movement following elbow injury can occasionally be treated by conservative measures such as braces or dynamic splints. A careful patient selection is necessary, for obtaining a good result taking into consideration the cooperation of the patient. The principles of releasing the contracted capsule and ligaments around the elbow have not changed. Arthroscopic release is of limited value, except for minor extension or flexion intrinsic contractures. A limited postero lateral release is indicated in extension deficiencies, but the postoperative treatment does not differ from the more extensive procedures. Distraction arthroplasty is useful in the severe intrinsic contractures, especially in the penoperative unstable elbow. Extensive release through a lateral and medial approach to the joint mayreestablish a functional range of motion in the pain free contracted elbow.

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