



Orthopaedics

CASE REPORT: CLINICAL AND FUNCTIONAL OUTCOME OF PROXIMAL ROW CARPECTOMY IN CHRONIC SCAPHOID FRACTURE NON UNION

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KEYWORDS : Proximal Row Carpectomy, Carpectomy, Scaphoid Fracture, Scaphoid Non-Union.

INTRODUCTION

Scaphoid fracture is one of the commonly missed fractures [3] that undergo non-union. Delay in diagnosis and inadequate treatment for acute scaphoid fracture can cause non-union and avascular necrosis of proximal pole of scaphoid leading to subsequent degenerative wrist arthritis [1] within 5 years [3]. Risk of non-union can be high (14% to 50% if displaced) [3]. The retrograde nature of the blood supply of scaphoid leads to higher risk of proximal pole avascular necrosis [4]. Diagnosis of scaphoid non-union is difficult since patients may have normal radiograph in early clinical course [2].

Thorough history taking, clinical examination and radiological investigations are necessary for diagnosing and deciding surgical plan for the patient. Proximal row carpectomy (PRC) is a common surgery done in the hand surgery practice. It involves excising the scaphoid, lunate and triquetrum bones [5] in sequential manner. PRC is a motion-preserving procedure to treat degenerative disorders of the proximal carpal row [6]. PRC provides satisfaction at a minimum of 20 years with a survival rate of 65% [6].

Case Report

A 58-year-old male presented to the out-patient department with the complaint of left wrist pain since 6 months aggravated since 1 month. Patient had a history of fall on outstretched hand from bed. Pain is progressive in nature and aggravates on movement, relieved on rest and medication. Patient's wrist range of motion was normal but painful in full extension and radial deviation.

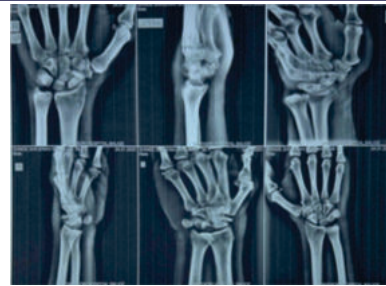
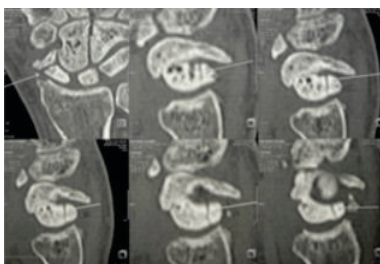
Patient has no history of chronic illness. On clinical examination patient elicited point tenderness over anatomical snuff box at the base of thumb. Pain aggravated on wrist dorsiflexion and radial deviation. There was no swelling observed over the wrist joint.

MATERIAL AND METHODS

Preoperative Planning

Patient gives the clinical history of fall on outstretched hand along with chronic pain near anatomical snuff box, sometimes diffused wrist pain.

Preoperatively clinical history, x-ray and CT plays an important role in making operative decision.



CT (axial and sagittal cuts) findings include irregular articular surfaces with few osteophytes. Sclerotic changes of scaphoid bone suggestive of avascular necrosis.

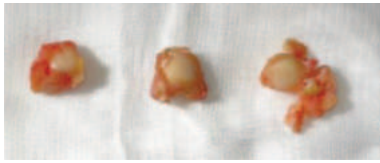
Surgical Techniques

Patient is posted for left wrist proximal row carpectomy under general anaesthesia on fracture table. Side table attachment used to support the left arm. Painting and draping done under all aseptic conditions. Horizontal incision taken over dorsal aspect of wrist joint. Skin incision measuring 6 cm taken, blunt dissection done and extensor retinaculum incised for complete exposure of carpal bones. Extensor compartments of forearm muscles identified. 3rd and 4th extensor compartment identified and tendons retracted to locate lunate bone. 2 mm threaded k-wire inserted in lunate bone and soft tissue attachments over released around it. Lunate bone removed. 2 mm threaded k wire inserted in triquetrum bone and soft tissue attachments released around it. Triquetrum bone removed. 1st and 2nd extensor compartment identified and tendons retracted to locate scaphoid bone. 2 mm threaded k wire inserted in scaphoid bone and soft tissue attachments released around it. Scaphoid bone removed. Capitulum docked over radius articular surface and position confirmed under fluoroscopy. Movements of wrist checked. Thorough wash given; extensor retinaculum sutured with vicryl 2-0. Closure done in layers. Dressing done and wrist immobilizer applied. Distal pulsation felt. Patient shifted to postoperative recovery room.



Postoperation Plan

10-degree extension slab given over volar aspect of forearm. Finger mobilisation and limb elevation advised to patient.



Dressing checked on postoperative date 1, 2, 8 and 14.
Suture removal on 14th day postoperatively.



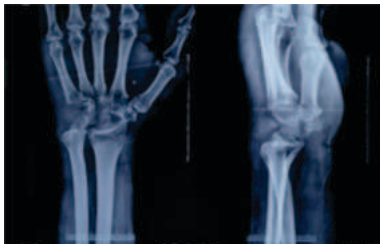
Postopx-ray



RESULT

Patient was discharged and called for suture removal on 14th day of surgery. Followed by followup-6 weeks and 3 months.

At 6 week follow up patient presented to OPD with protection splint. On examining surgical site, the scar was healthy and healed, there were no discharge or sinuses. Post op x-ray was done which showed docking of distal row of carpal bones over radius articular surface, particularly the capitate carpal bone.



Range of Motion

Patient's splint was removed on 6th week to start mobilisation of the wrist joint. On 6th week wrist joint showed restricted range of motion on volar flexion and dorsal flexion.

Volar flexion being 5-8 degrees as opposed to normal being 60-80 degrees and dorsal flexion being 10 degrees as opposed normal being 60-80 degrees.



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