

# Anterior Glenohumeral Dislocation with Ipsilateral Shaft humerus fracture– A Rare Co-Occurrence; Case Report from Hills of North-India

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## Learning Point for this Article:

Gleno-humeral dislocation must be looked for in every patient of fracture shaft humerus.

## Abstract

**Introduction:** Combination of Anterior Glenohumeral Dislocation with Ipsilateral Shaft humerus fracture is an rare co occurrence and guidelines of its management are lacking. It is a rare opportunity for orthopaedic surgeon to observe simultaneous shoulder dislocation with ipsilateral humeral shaft fracture. There has been a total of around twenty cases reported since 1940.

**Case presentation:** A case of elderly female with medical co-morbidities who sustained this injury while working in wheat farms. She presented with complaints of pain and swelling in right arm with inability to move right arm. She was diagnosed as a case of ipsilateral fracture of proximal humerus with anterior glenohumeral dislocation. She was successfully treated with open reduction and internal fixation (ORIF) for fracture shaft humerus with long proximal humerus locking plate, because of proximal extension of long oblique fracture line using standard delto-pectoral approach with anterolateral distal extension of surgical approach after visualising radial nerve. Following fixation of shaft, close reduction was carried out for anterior shoulder dislocation under image intensifier. Patient was put on regular physiotherapy and follow up at 4 weekly interval for a period of 3 months and subsequently bimonthly interval upto 1 year. Patient achieved near normal and pain free range of motion at 1 year.

**Conclusion:** Anterior Glenohumeral Dislocation with Ipsilateral Shaft humerus fracture, can be easily missed clinically in obese patients. Close reduction is possible after attaining adequate lever arm by fixing shaft followed by attempt to reduce dislocation. Meticulous surgical technique coupled with dedicated and supervised physiotherapy is essential to bring out good functional outcome.

**Keywords:** Glenohumeral dislocation, Humeral shaft fracture, Co-Occurrence.

## Introduction

Shoulder joint is a ball and socket joint with humeral head being ball and glenoid cavity of scapula, being socket and this joint has wide range of mobility. It is the most frequent joint to get dislocated with incidence of 8.2 to 23.9 per 10000 persons per year [1]. It is a rare opportunity for orthopaedician to observe simultaneous shoulder dislocation with ipsilateral humeral shaft fracture. There has been a total of around twenty cases reported since 1940 [2-6].

We here present a case which is unique because of fracture of proximal third of shaft of humerus with ipsilateral anterior shoulder dislocation in elderly obese female with medical co-morbidities.

## Case report

A 62 year old female presented to the emergency department after 6 hours of sustaining injury due to a fall while working in wheat farms with chief complaints of pain, swelling and inability to use her right upper dominant extremity. Gentle clinical examination was done and a clinical possibility of fracture shaft humerus was made. Patient was also evaluated for associated vascular and neurological involvement and any obvious nerve/vascular involvement was ruled out clinically. Radiological investigations revealed fracture of proximal 3rd of shaft of right humerus with ipsilateral anterior dislocation of shoulder (fig.1 and fig .2). Gentle immediate close reduction was attempted for both fracture and dislocation but without any success.



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## Author's Photo Gallery

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**Figure 1:** X-ray showing ant. dislocated right shoulder with ipsilateral shaft fracture of humerus.(radiographs at presentation)



**Figure 2:** X-ray showing fracture geometry and distal and proximal extension of fracture lines.



**Figure 3:** Immediate post-operative X-ray in internal rotation.



**Figure 4:** Surgical wound gaping on 12th post-operative day.



**Figure 5:** Surgical wound after secondary suturing(3 weeks post-op from primary surgery).

Surgical intervention was planned and pre-operative investigations revealed hypertension with elevated blood sugar levels (fasting blood sugar: 180 mg% and glycosylated haemoglobin of 6.8%), medical consultation including that of cardiology and pulmonology was sought and patient was operated on 5th post admission day with open reduction and internal fixation (ORIF) for fracture shaft humerus with long proximal humerus locking plate because of proximal extension of long oblique fracture line through standard delto-pectoral approach with anterolateral distal extension of surgical approach. Radial nerve was identified and protected. Following fixation of shaft, close reduction was carried out for anterior shoulder dislocation. Reduction was found satisfactory under image intensifier and further on post-operative x-rays (fig 3).

On 4th post operative day, serous discharge was noted in surgical wound and full gaping/dehiscence of surgical wound was noticed on 12th post operative day (fig .4), for which secondary suturing was done. Patient was discharged on 21st post op day following primary surgery. She continued to improve on regular follow-up and was instructed for gradual progressive active range of motion exercises (fig 5 and fig 6). At 1 year follow-up, there was satisfactory bone union (fig 7. And fig.8) with painless, nearly full and free range of motion with patient returning to her pre-injury activities (fig.9 and fig.10).

## Discussion

Simultaneous occurrence of humeral shaft fracture with ipsilateral shoulder dislocation is an uncommon injury. Only about 20 such cases has been reported in literature as per pub med search done on the date of writing this article [3-6]. Significant amount of force is required in order to have fracture and dislocation in same limb. Axial loading forces transfer energy to the shaft and further into shoulder resulting in simultaneous injuries [7, 8]. Some authors have suggested dislocation due to indirect forces and fracture shaft due to direct impact [6, 9]. In our patient, we believe that possible mechanism of injury was fall on outstretched hand leading to transmission of force along shaft to shoulder.

Shoulder dislocation was not suspected clinically in our patient as patient was not co-operative during clinical examination owing to marked pain and also had morbid obesity which impaired judgement of shoulder contour. Various case reports show that major obstacle in achieving close reduction is lack of adequate lever arm, which demands surgical intervention to fix the shaft followed by closed reduction [10-12]. After thorough review of the literature (3-6) open reduction using standard deltopectoral approach was planned and shaft fragment was fixed with long plate and then closed reduction of joint was done. Regular follow-up along with appropriate physiotherapy helped in achieving good functional outcome.



**Figure 6:** Active abduction at 3 weeks post- op



**Figure 7:** Radiological union and consolidation at 1 year post-op. AP view



**Figure 8:** Radiological union and consolidation at 1 year post-op. AP view



**Figure 9:** Active overhead abduction with joined hands achieved at 1 year post-op



**Figure 10:** Active overhead abduction at 1 year post-op

## Conclusion

Shoulder dislocation with associated ipsilateral fracture shaft humerus, can be easily missed clinically in obese patient .Close reduction is possible after attaining adequate lever arm by fixing shaft followed by attempt to reduce dislocation.

## Clinical Message

Although combination of anterior glenohumeral dislocation with ipsilateral fracture shaft humerus injury is unusual, it is treatable with acceptable clinical results. Fixation of shaft fragment and then utilizing this lever arm for closed reduction of joint offers good option for treatment.

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