



Bilateral clavicle fracture treated with anatomical locking Plate –a rare case

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Received 03 November, 2015; Accepted 10 December, 2015 © The author(s) 2015. Published with open access at www.questjournals.org

I. INTRODUCTION

Clavicle fractures are common and represent 5–10% of all fractures of the human skeletal system [1,2]. Epidemiological studies show that 70–82% of all clavicle fractures are located in the middle third, 10– 16% in the lateral and only 3% are found in the medial third [2,3].

The mechanism of injury in majority is axial loading due to insult to shoulder girdle directly and fall on outstretched hand in remaining cases [4].

The common treatment though is conservative but recent literature shows increasing rates of delayed union and non unions with it [2,5,6].

Comminuted fractures, displaced fractures and increasing age are important causes for non union which can be avoided by using surgical line of management either in the form of plates and screws or intramedullary fixation though indications remain controversial [2,7,8].

Another indication for open reduction and internal fixation as highlighted by Schwarz et al [9] in 1992 was bilateral clavicular fractures though literature revealed that bilateral involvement of clavicle fracture is reported in a few studies [10] and distal bilateral fractures are even rarer [11].

In our case of bilateral midshaft clavicular fracture was fixed with open reduction internal fixation with anatomical locking compression plate.

II. CASE PRESENTATION

A 30 year old female was admitted with history of motor vehicle accident with direct blow to both shoulders. The x-rays showed displaced mid shaft clavicle fracture on both sides. Both the fractures were of type II b according to All man classification [18,19].

After the base line investigations, under general anaesthesia, open reduction internal fixation with anatomical locking compression plate was done on both sides in one sitting.

After fixation the fracture showed a good anatomic reduction.

Post operatively both shoulders were immobilized in a collar and cuff sling for three weeks.

Active assisted physiotherapy started from the first day of surgery with complete load reduction of both arms.

Six weeks following surgery follow up radiographs showed good bone healing in an anatomic position and she achieved full range of motion in both shoulders, totally free from pain.

At eight weeks, follow up radiograph showed a complete fracture healing of both clavicles. Subsequently patient was mobilized under full load.

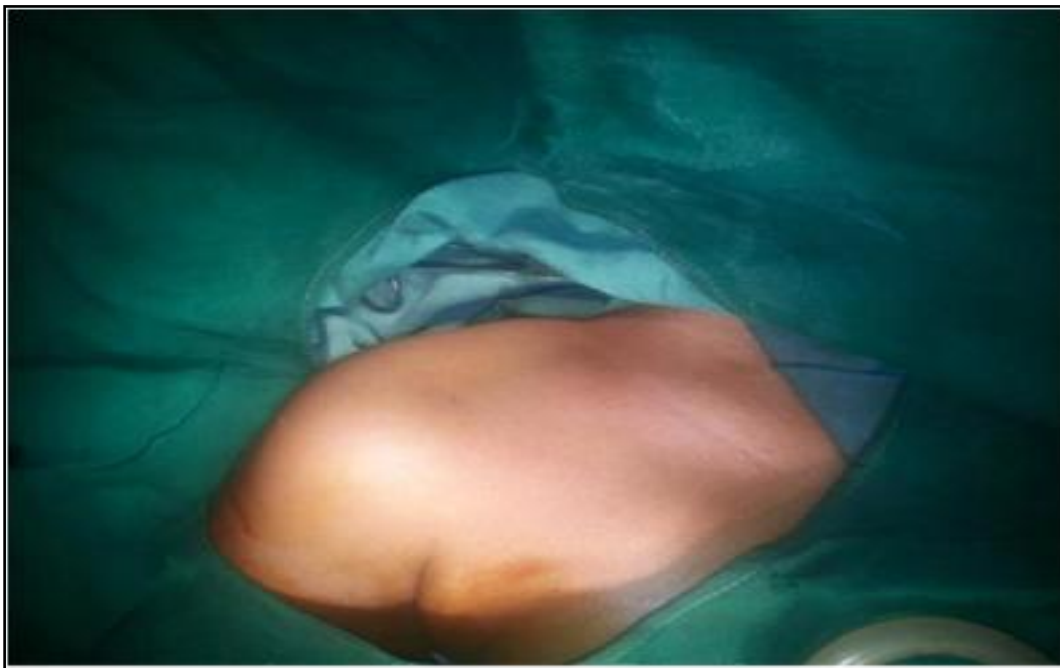
III. DISCUSSION

Based on the literature review the incidence of bilateral clavicle fractures is 0.43% of clavicle fractures with an overall incidence of between 0.011 and 0.017%. Bilateral clavicular fractures have been treated well with plates and screws [16], external fixation methods [10] and combination of conservative on one side and intramedullary fixation on other side. [20] We did not come across any literature support for concurrent bilateral traumatic fracture of clavicle treated with open reduction internal fixation with anatomical locking compression plate. Our aim was to check out the feasibility and functional outcome in terms of pain ,range of motion and union of fracture after surgical management of concurrent bilateral traumatic fracture of clavicle with open reduction internal fixation with anatomical locking compression plate in single sitting. The reasons for primary surgical stabilization in our case are completely displaced bilateral fractures and marked risk of non union or poor result in female patients as suggested by Smekal et al [25],Duijff et al [26] and Pieske et al [27]. Braunstein et al [20] revealed that quick analgesia and high mobility can be easily achieved in bilateral

clavicular fractures if treated with open reduction internal fixation with anatomical locking compression plate which is in accordance with our report.



Preoperative Radiograph



Draping



Incision



Plate fixation



Skin closure



Instruments



Post operative radiograph

IV. RESULTS

Patient achieved full range of motion in both shoulders without any pain and thus subsequently allowed to return to her daily activities after 6 weeks.

V. CONCLUSION

Bilateral clavicle fractures should be surgically managed to limit the duration of functional disability. Furthermore the use of anatomical locking compression plate provides the ideal fixation method allowing for an earlier functional outcome.

For simultaneously occurred bilateral fractures clavicle, Anatomical locking compression plate is a safe and effective modality for good pain relief and rapid recovery of range of motion.

VI. CLINICAL MESSAGE

Bilateral Clavicle fractures require internal fixation and Anatomical locking compression plate is minimally invasive and gives good results

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