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Orhopedic Surgery

Pneumothorax Complicating an Isolated Fracture of The Clavicle: A Rare Case And Literature Review

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Abstract Case Report

Isolated clavicle fractures are among the most common traumatic fractures in the emergency department. Pneumothorax has been described only rarely as a complication of a clavicle fracture in English literature. In all reported cases, pneumothorax was treated by thoracostomy and clavicle fracture was treated conservatively. In our case, the pneumothorax requires chest drain insertion and the fracture of the clavicle was treated surgically and a good result was given.

Key words: Clavicle, fracture, pneumothorax.

INTRODUCTION

Clavicle fractures are common in the emergency Department. They are about 4% of all fractures. These fractures are relatively easy to manage and are usually treated with routine immobilization. Pneumothorax resulting from a clavicle fracture is a very rare but have a potentially fatal complication.

CASE REPORT

A young male patient was admitted to the emergency department having fallen off his bicycle. He complained of a pain in his left shoulder exacerbating his breathing. He did not have a relevant medical history. The patient was presented without clinical respiratory distress.

The initial respiratory examination was normal without any visible point of impact of the chest wall. The patient was hemodynamically stable and clinically, there was an obvious fracture of the left clavicle with intact skin and no neurovascular abnormalities.

Radiographs of the clavicle showed a displaced fracture of the left clavicle with sternoclavicular dislocation and a left-sided pneumothorax (Figure 1). The patient continued to complain about pains of inspiration. An X-ray of the frontal chest revealed a large pneumothorax on the same side as the clavicle fracture. There were no rib fractures.

Pneumothorax was treated by insertion of a chest tube under local anesthesia. The lung was fully returned to the wall two days later and the drain was removed. The clavicle fracture was surgically treated or an internal fixation with centromedullary broaching osteosynthesis was performed osteosynthesis of both clavicle fracture and sternoclavicular dislocation (two-pin diameter 22) (Figure 2 and 3). Regular chest X-rays during follow-up of the patient showed no recurrence of pneumothorax, and at 8 weeks post-op fracture of the clavicle completely consolidated with complete recovery of mobility. Ablation of the pins was performed at 10 weeks after the surgical operation.

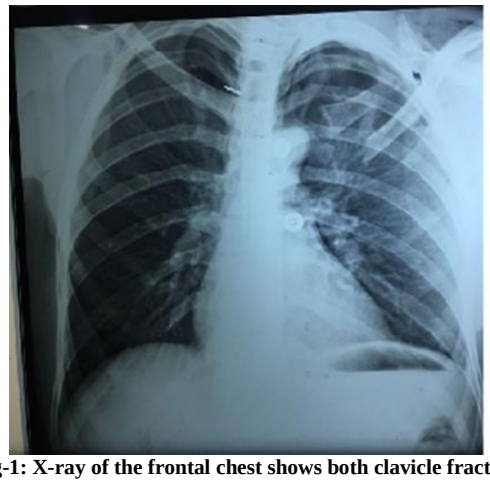

Fig-1: X-ray of the frontal chest shows both clavicle fracture, sternoclavicular dislocation and left pneumothorax

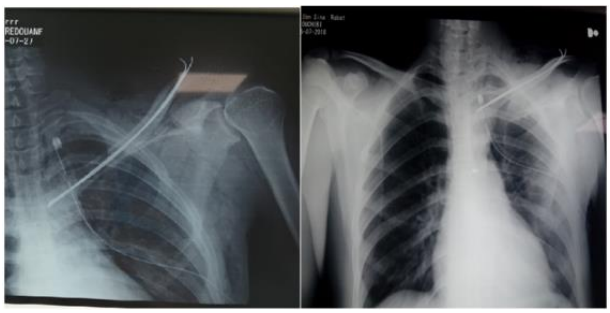

Fig-2 and 3 : shows the postoperative control of osteosynthesis and the position of the chest tube

DISCUSSION

The clavicle is one of the most frequently fractured bones, representing up to 4% of all fractures [1]. These fractures are relatively easy to manage and are usually treated with routine immobilization [2]. Anatomically, the top of the lung lies behind and above the medial third of the clavicle, with the anterior scalene muscle, the brachial plexus, and the subclavian vessels. However, rare cases of clavicle fractures complicated by pneumothorax, lesion of subclavian vessels or brachial plexus have been reported in the literature [1,3].

The overall incidence of these complications is less than 1-3% including fractures of the first rib and scapula associated with clavicle fracture [4]. Most clavicle fractures result from a fall on the ipsilateral shoulder. Nevertheless, surgical treatment is indicated in cases of clavicle fractures with an initial shortening of more than 15 mm, a risk of perforation of the skin, neurovascular complications and non-union [5]. Because of the non-negligible rate of pseudarthrosis of orthopedically treated clavicle fractures, open reduction and internal osteosynthesis have become readily accepted in the management of clavicle fracture.

CONCLUSION

Clavicle fractures are common, usually requiring routine orthopedic immobilization. Pneumothorax should be considered a potential complication and should be excluded by rigorous clinical examination and appropriate X-rays.

REFERENCES

1. Yates DW. Complications of fractures of the clavicle. Injury.1976 Feb; 7 (3): 189-193.
2. Dugdale TW, Fulkerson JP. Pneumothorax complicating a closed fracture of the clavicle. Clin Orthop Relat Res. 1987 Aug; (221): 212-4.
3. Raymond J, Meeks MD, Gregory D. Isolated clavicle with pneumothorax: a case report. Am JEmerg Med 1991 Nov; 9 (6): 555-6.
4. Roe CR. An atlas of anatomy and treatment of midclavicular fractures. Clin Orthop.1968; 58: 29-42.
5. Khan LA, Bradnock TJ, Scott C. Fractures of the clavicle. J Bone Joint Surg Am.2009; 91 (2): 447-60.