Isolated traumatic bilateral fracture of first rib: A rare case report

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ABSTRACT

According to medical literature, fractures of the first rib are quite rare and bilateral isolated first rib fracture are extremely rare. Such injury is usually associated with severe intrathoracic trauma, associated other rib fractures and other concomitant bony or neurovascular injuries. This injury is a harbinger of major trauma. However we present a case report of a traumatic isolated bilateral low velocity first rib fracture which was not associated with any complication and did well on analgesics and rest, due to rarity of such kind of injury.

Keywords: Bilateral first rib fracture.

CASE REPORT

A 20 years old male truck driver presented to the emergency with history of fall from truck with complaints of severe pain in base of neck extending towards both shoulders. Pain could be reproduced by applying pressure to both clavicles there was tenderness over lower cervical spine and sternum. He was fully conscious, oriented, vitals were stable, oxygen saturation 99%. He had normal bilateral carotid and peripheral pulses and had no signs of any neurovascular or brachial plexus injuries. Radiographs of cervical spine was normal but that of chest showed bilateral first rib fracture. CT scan of the neck and chest was done to rule out concomitant cervical spine and intrathoracic injuries and was normal. Patient was managed conservatively with analgesics and rest and discharged after 3 days. Patient was asymptomatic 4 weeks after injury as seen on outpatient basis (Fig. 1).

DISCUSSION

The first rib is deeply placed and protected by the shoulder girdle and muscles, and fracture of the first rib remains the rarest of all rib fractures¹. The first rib is kept relatively rigid with attachments posteriorly to the first thoracic vertebra and anteriorly to the sternum. First rib fractures are caused by direct trauma, violent muscular contraction of scalenius anterior or serratus anterior, or by chronic stress². Most fractures occur at a point of anatomical weakness, the subclavian groove and symptoms include pain in the shoulder, chest and base of the cervical spine, as well as neurological Sequelae³. Isolated bilateral first rib fractures are extremely rare⁴. Fractures of upper ribs indicate major trauma and should arouse suspicion of

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damage to adjacent structures such as lungs, subclavian vessels and brachial plexus. Associated complication may include delayed deep vessel thrombosis, aortic aneurysm, tracheobronchial fistula, and thoracic outlet syndrome. Although the potential for life-threatening injuries was great, this patient had isolated bilateral first rib fractures, but no associated cervico-mediastinal, thoraco-abdominal or neurological sequelae. His rib fractures appear to have been caused by the whiplash mechanism rather than by direct trauma. Therefore, first rib fractures may occur in isolation, without multiple rib fractures, or signs of multiple trauma but one should always be cautious and alert while managing such a case so that any potential serious complication should not go unnoticed.

**REFERENCES**

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