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Clinical Image

Flail Chest: The Renaissance of Rib Osteosynthesis

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1. Clinical Image

Rib fracture is the most common injury in the setting of thoracic trauma and is associated with a higher morbimortality. In the last 60 years, positive pressure mechanical ventilation was the first line treatment of respiratory insufficiency caused by rib fractures. However, severe complications associated with prolonged mechanical ventilation, have elicited the rising implementation of open rib reduction and internal fixation techniques. The most consensual indications for rib osteosynthesis are: flail chest with fracture of at least 3 ribs, significant displacement of bone edges or uncontrolled pain.

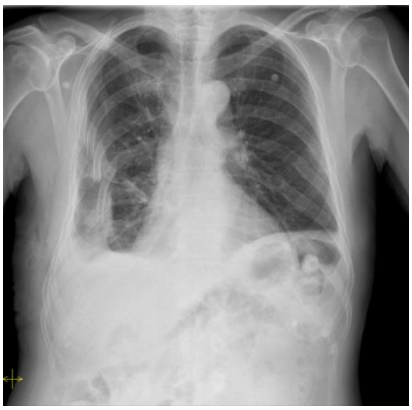

Figure 1: Posteroanterior thorax x-ray showing the rib fractures with displacement of bone edges.

We present the clinical case of a male patient of 79 years old. Injury mechanism: fall from his own height over the right hemithorax. Injury: 5 rib fractures with flail chest and significant displacement of bone edges **(Figure 1 and 2)**. Symptoms: intense thoracic pain. Treatment: multimodal analgesia. On the 4th day, he developed a tension pneumothorax. Even after adequate intercostal drainage, the pneumothorax relapsed. On the 8th day, he underwent a right posterolateral thoracotomy, open reduction and internal fixation of 3 ribs with plates and screws and intercostal drainage. Evolution: he received respiratory kinesiotherapy and was discharged home on the 8th post-operative

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day. Follow-up at 1st **(Figure 3)** and 5th months, without functional impairment and with preservation of quality of life.

Rib osteosynthesis is a simple method but requires clinical experience in thoracic approaches and handling of specific instruments and material. Its implementation in non-ventilated patients reduces the need for mechanical ventilation, pain, length of stay and allows preservation of quality of life [1,2,3].

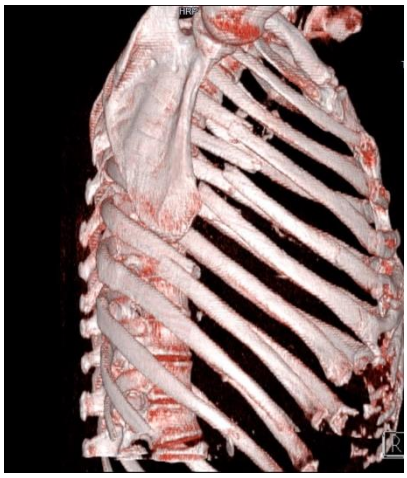

Figure 2: Side view of thoracic computerized tomography (CT) reconstruction showing the rib fractures with displacement of bone edges.

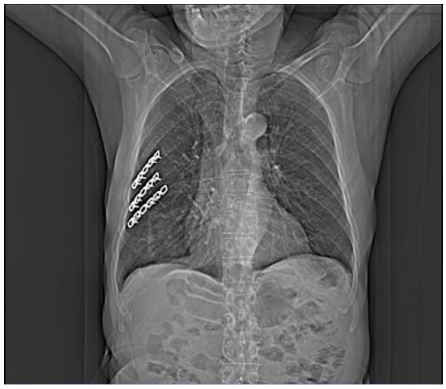

Figure 3: Coronal view of thoracic CT in the 1st post-operative month.

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