

TIME BOMB TICKING IN THE NECK: A Case of Blunt Neck Trauma Resulting in Subclavian Artery Abutment and Brachial Plexus Injury

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INTRODUCTION

Blunt neck trauma is rare but potentially fatal, accounting for 10–12% of trauma-related mortality². Subclavian artery injuries are uncommon due to its deep anatomical position but are life-threatening when present. Early detection is vital to prevent catastrophic outcomes.

CASE DESCRIPTION

A 19-year-old Malay male motorcyclist was involved in a high-impact road traffic accident. He presented with severe left upper limb pain and complete loss of movement. A pulsatile swelling was visible at the left supraclavicular region. The limb was cold, pale, flaccid, and pulseless.

Radiography showed a displaced posterior fracture of the left first rib. CTA revealed both right and left posterior first-rib fractures, with a fracture fragment from the left rib abutting the subclavian artery—raising concern for vascular injury.

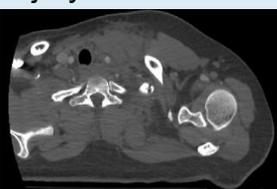


Figure 1: CTA of patient showing left first rib fracture abutting subclavian artery

Despite this, no active extravasation or dissection was noted. Due to neck swelling, a head immobilizer was used instead of a standard cervical collar.

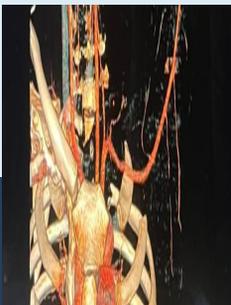


Figure 2: CTA 3D reconstruction of patient showing left first rib fracture abutting subclavian artery

The patient was stabilized with IV tranexamic acid and admitted under Surgical and Orthopaedic teams.

MRI performed three days later showed a supraclavicular hematoma compressing the thoracic inlet. Neurological assessment confirmed complete motor paralysis of the left upper limb, consistent with brachial plexus injury. A halo vest was applied for stabilization.

DISCUSSION

The subclavian artery is shielded by the clavicle, first rib, and deep cervical fascia³. However, high-energy trauma with posterior first-rib fractures can threaten this vessel. Phillips et al. reported that displaced posterior fractures involving >50% of the rib thickness increase the risk of arterial injury⁴. In our case, the artery remained intact but was critically compressed by a displaced rib fragment, posing a "time bomb" risk for delayed rupture or thrombosis.

CONCLUSION

Posterior first-rib fractures with displacement near the subclavian artery demand urgent evaluation and close monitoring. Even in the absence of rupture, arterial abutment poses a high risk for delayed complications.

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KEYWORDS

subclavian artery, first-rib fracture, blunt trauma, brachial plexus injury, vascular compression

