Fracture of cervical rib: a novel seat-belt injury

Numerous injuries have been described as a consequence of wearing a seat-belt restraint in road traffic accidents. This report describes a patient who sustained a fracture of a cervical rib with transient neurological damage, a previously unreported condition.

A 48-year-old female driver of a motor vehicle was involved in a head on collision with an impact speed of approximately 50 mile h\(^{-1}\). The patient was wearing a standard design diagonal/lap seat belt restraint at the time. Following the accident she experienced a momentary loss of consciousness and subsequently, increasing pain within the cervical spine and right shoulder.

On examination in the accident and emergency (A&E) department she was noted to have tenderness in the right supraclavicular fossa but no neurological loss in the shoulder or arm. A plain radiograph of the cervical spine (Fig. 1) revealed a fracture of the shaft of a cervical rib. Previous to this accident, the patient had been aware of the presence of the cervical rib since the age of 16.

Review 10 days later revealed the tender bony lump and also an area of altered sensation over the posterior lateral aspect of the right upper arm and shoulder tip. Subsequent review in 4 weeks confirmed that this area of sensory loss had recovered totally.

The diagonal/lap seat belt has been associated with soft tissue contusions, clavicular and sternal fractures and less commonly compression fractures of the thoracolumbar spine.\(^1\)\(^2\) Rib fractures tend to be single and characteristically situated in the lower ribs, on the side of anchorage.

Cervical ribs are usually asymptomatic but may present with ill defined neurological or vascular problems.

Fig. 1. Plain radiograph of the cervical spine.
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symptoms, commonly referred to as the 'thoracic outlet syndrome.' Cervical ribs typically produce root irritation or compression of the lower trunks of the brachial plexus resulting in pain or neurological loss in the hand. In this injury however, the fracture of the cervical rib has resulted in a neuropraxia of the upper lateral cutaneous nerve of arm and the suprascapular nerves. Fortunately no long-term ill effects were noted in this case.

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