Penetrating Trauma of the Lumbar Vertebrae: An Unusual Case
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Patient: 41 years, male

Clinical History:

Trauma associated with penetrating injuries is on the increase. The instrument used in such attacks is occasionally one that is relatively benign in its normal application. We present this unusual case of penetrating injury to a lumbar vertebra.

Imaging Findings:

A 41-year-old man presented to the Accident and Emergency department following an assault with a screwdriver. The location of the device was apparent (Fig. 1) and initial management according to trauma management guidelines were instigated. The patient remained physiologically stable throughout the initial resuscitation period, with no signs of shock, peritonism, or neurological deficit. He was promptly given broad-spectrum intravenous antibiotics as suggested by local guidelines and administered with anti-tetanus serum. Radiological assessment was performed via plain radiographs and computerised tomography. Precise anatomical detail was provided by computerised tomography which showed the screwdriver to be passing directly through the second lumbar vertebra, with its tip abutting the aorta (Fig. 2). It was clear the aorta had not been penetrated. The patient was admitted and the screwdriver removed with great care under a local anaesthetic and light sedation, as it was felt safer to monitor his neurological status whilst awake. A vascular surgeon remained in attendance throughout the procedure due to the close proximity of the screwdriver to the aorta and inferior vena cava. The wound was debrided and closed with primary suturing. The patient returned to the ward and was monitored with respect to his physiological and neurological status whilst on strict bed rest. Follow-up magnetic resonance imaging did not reveal any significant nerve injury.

Discussion:

Injuries involving screwdrivers, although uncommon, are not rare. The circumstances are often due to an assault on an individual. Impalement involving the cranium, hard palate, hard palate, eye, and rectum have all been described. Complications following dental procedures where the screwdriver tip has been either recovered from the caecum or aspirated following radical tumour facial surgery accounts for non-penetrating trauma associated with the instrument. Trauma to the lumbar vertebrae has not been reported previously. The above case demonstrates the importance of strict clinical and radiological assessment in such injuries. The requirement of prompt and thorough evaluation is necessary to avoid harm as treatment may ultimately require the help of specialist intervention or surgery. To remove devices in a setting not equipped for hazardous sequelae is foolhardy. The potential for vascular injury is clearly demonstrated and therefore necessitates early liaison with the appropriate team.

Differential Diagnosis List: Penetrating trauma to L2 vertebra with no complications
Final Diagnosis: Penetrating trauma to L2 vertebra with no complications

References:

Figure 1

Description: Impalement of L2 Origin:
Figure 2

Description: CT demonstrating the relationship of the aorta and IVC to screwdriver tip

Origin:
Figure 3

Description: Bending of screwdriver may have occurred when patient fell. Origin: