Paediatric spinal trauma. When in doubt, scan again

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DESCRIPTION

A 9-year-old boy was a restrained back-seat passenger in a road traffic accident. He was assessed in the local hospital, where CT scans of his spine demonstrated undisplaced fractures of C1 and C2 vertebrae, and chance fracture of L1 vertebra with obliteration of the spinal canal (figure 1). He was transferred to a specialist paediatric unit for further assessment and management. Clinical examination revealed tenderness at the craniocervical and thoracolumbar junctions, but neurological examination was normal in all four limbs (American Spinal Injury Association (ASIA) score E).¹ The lower limb findings were felt to be inconsistent with the radiological imaging, and a repeat

CT was arranged (figure 2). The repeat CT and an MRI confirmed that no significant spinal injury had occurred. After further review of the case history, it was elucidated that the child had been distressed at the time of the initial CT, and had been crying when the images were taken. Subsequent review of the initial scans demonstrated subtle evidence of movement artefact at the craniocervical and thoracolumbar junctions. When clinical findings and radiological imaging are inconsistent or contradictory, repeat imaging is recommended, especially in the case of suspected major trauma in children. Repeat imaging in this case prevented a 9-year-old boy from undergoing an unnecessary spinal surgery.

Figure 1 Initial CT scans from peripheral institution seemingly demonstrating fracture of odontoid peg (A), fracture of right lateral mass of C1 (B) and bony chance fracture of L1 with obliteration of the spinal canal (C).

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Figure 2 Repeat CT scans with similar cuts demonstrating no evidence of fracture in C2 (A), C1 (B) or L1(C). These findings were further confirmed with MRI of same areas.

Learning points

- ▶ Major trauma in children can be stressful for the patient, the family and the medical team.
- ▶ Never value investigative results over a thorough history and clinical examination.
- ▶ When clinical findings are inconsistent with investigation results, do not hesitate to review the clinical findings and repeat the investigations.

proofread the manuscript. MN edited the images, proofread the manuscript and arranged parental consent for the use of the images. PJK is the consultant with overall responsibility for the case, and proofread and approved the final manuscript and images.

Competing interests None.

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REFERENCE

- 1 Marino RJ, Barros T, Biering-Sorensen F, *et al*. International standards for neurological classification of spinal cord injury. *J Spinal Cord Med* 2003;26(Suppl 1):S50–6.

Contributors BON was the receiving surgeon when the patient was transferred. BON wrote the manuscript and prepared the images. DFL arranged the repeat scans and

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