Severe thoracic spinal fracture-dislocation: good neurological outcome without reduction. Case report

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Introduction

Many consider that very severe thoracic fracture-dislocations should be reduced by whatever means is necessary, including spinal surgery. This case report illustrates how an excellent neurological and general outcome can be achieved without any such reduction.

Case report

On 4 May 1992 a 33-year-old policeman was riding his motorcycle at 50 mph when he collided with an oncoming car. He sustained bilateral haemothoraces and fractures of the right scapula, several ribs, the right tibia and fibula and vertebrae T6–9 inclusive.

On clinical examination he had a partial left Brown-Séquard mid-thoracic paraparesis. Leg muscle power was up to grade 3 on the right. Only a few flickers of voluntary movement were present on the left. Joint position and touch sensation were relatively well preserved bilaterally. Nociception was absent on the right but good on the left. He had partial control of his urinary bladder and of his bowels.

He was resuscitated. Chest drains were inserted bilaterally. On 5 May 1992 he was transferred to a spinal injuries unit for further management.

Figure 1 shows his anteroposterior plain X-ray film, Figure 2 (a–d) his horizontal CT scans and Figure 3 his T1-weighted sagittal MRI scan. The vertebral levels are indicated. There are comminuted spinal fractures from T6–9 with gross anterolateral displacement of the vertebral bodies, maximal at T7. A large right intrathoracic haematoma is present.

His extraordinary situation, both neurological and orthopaedic, was carefully considered. There were concerns that although no spontaneous neurological improvement had occurred, surgical intervention might compromise either his spinal cord or his thoracic aorta or both. Accordingly a non-operative approach on a turning bed was instituted with no attempt being made to correct the gross spinal displacement.

Figure 1 Anteroposterior thoracic spine plain X-ray film

He made a slow neurological recovery over many months. On discharge home he was walking with a stick. Muscle power in both legs was almost normal apart from a right foot drop caused by a lateral popliteal nerve palsy. Bladder and bowel control were normal. He had lost one

Figure 2 Horizontal CT scans. Note that 2(c) shows three vertebral levels in one cut

and half inches in height. Sensation in his left leg was normal; on the right the impairment of nociception persisted.

Following discharge he continued with physiotherapy. Initially he had some back pain but this resolved.

His current status is that he has no pain. He is able to walk for well over a mile without any aid apart from a raised foot insole. He can manage stairs without difficulty. Bladder, bowel and sexual functions are normal. His posture is good. He plans to return to active duty with the police force.

Discussion

The correct management of unstable thoracic fractures with spinal cord neurological deficit is a source of controversy.¹⁻⁴ We advise an eclectic approach. All the relevant circumstances of each patient must be considered before the appropriate course of treatment is determined. Factors that influence the decision include, amongst others, the general state of the patient, the presence of other injuries and the ability of the

Figure 3 T1-weighted sagittal MRI scan. Vertebral levels indicated

treating centre to succeed in every aspect of management.

In this case the patient had an exceptionally uncommon vertebral injury with a great potential to be either harmed or benefited substantially through treatment. Fortunately he was admitted very early to a spinal cord injuries centre capable of evaluating and treating thoracic fractures either operatively or non-operatively. He recovered very well neurologically and is now able to function extremely effectively even though his spinal position remains frighteningly abnormal.

References

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