

PARAPLEGIA FROM FLEXION INJURY OF THE SPINE: A DANGER OF THE HIGH LITHOTOMY POSITION

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DAMAGE to the cervical spine is a recognized hazard of manhandling the unconscious patient. In the general experience of anaesthetists and surgeons, it is very uncommon. In consequence, a fracture in the upper dorsal spine, resulting from the abrupt lifting of an unconscious patient into the high lithotomy position, and that complicated by paraplegia, appears to be worthy of mention.

CASE REPORT

The patient was an African woman aged about 40 years. She was admitted to hospital with a vesico-vaginal fistula. On 12th August, 1960, a vaginal examination was performed under anaesthetic. The following day she complained of pains across the upper chest and was noted to be having extremely severe extensor spasms of the trunk and lower limbs. She was placed, empirically, on cervical traction by a neck harness.

Full neurological examination seven days later revealed signs of an incomplete transection of the spinal cord in the upper thoracic region. The chest pains were, in fact, bilateral root pains in the fourth thoracic dermatomes. Below that level there was generalized hypo-algesia and hypo-aesthesia. Abdominal reflexes were absent, knee and ankle jerks were exaggerated and both plantar responses were extensor. Very severe hypertonia of the trunk and lower limbs, with periodic painful spasms, was a particular feature. Deep tenderness was noted over the second, third and fourth thoracic spinous processes.

Lumbar puncture was performed forthwith. Pressure was 60 mm. of water and there was a very sluggish rise on jugular compression and no fall on releasing that pressure. The cerebrospinal fluid had no cells and protein content was 30 mg. per 100 ml. X-rays of the cervical spine were normal, but in the thoracic spine there was a recent and severe compression fracture of the body of the third thoracic vertebra.

Myelography was unavoidably delayed until 4th September, 1960, when complete block opposite the compression fracture was demonstrated.

There being no improvement in the physical signs whatever up to 15th September, laminectomy was performed on the following day. Laminae of the second, third and fourth thoracic vertebrae were removed to reveal a very poorly pulsating theca. This was opened and the cord was retracted gently to reveal a slight, diffuse posterior bulging of the anterior theca opposite the fractured vertebral body. It was decided that simple decompression should suffice: the theca was closed, covered with gelatin sponge and the wound sutured.

Recovery was prompt, with cessation of root pains and the severe spasms immediately after the operation. After four weeks the patient was starting to walk with assistance and steady improvement was maintained thereafter.

DISCUSSION

In this case there appeared to be very little doubt that the examination under anaesthetic

in the lithotomy position and the spinal injury stood as cause and effect. Radiologically the patient's spine was in no way porotic or otherwise abnormal.

Out of curiosity it was decided to test the effect of suddenly lifting the legs upwards from under the flexed knees in relaxed subjects lying supine with the neck extended. A jerking lift provoked sharp discomfort localized over the upper dorsal spine in three subjects. It was felt that it might be unwise to extend the experiment by fixing the neck in extension, as it would be during the manoeuvre in the operating theatre; there the neck would be held in extension by the anaesthetist holding a mask over the face or holding the head itself if an endotracheal tube had been inserted.

The spine, as is so well known, tends to fracture near the junction of its fixed and mobile parts. Although the dorsal spine is rather rigid in the adult, its very rigidity is its liability. The last cervical and upper two thoracic vertebrae are relatively powerful bones whereas the next highest thoracic vertebrae are smaller and not as fixed by short, rigid ribs. Fractures in the upper dorsal spine are, in consequence, not at all uncommon.

As a result of this case, extreme care is advocated in lifting unconscious patients from the supine to the high lithotomy position. Any undue jerking movement or violence should be avoided while the anaesthetist might observe the movements of the upper spine with caution. A firm pillow placed lengthwise under the head, neck and inter-scapular region might be useful as an additional safety measure.

SUMMARY

A case is described in which a picture of incomplete transection of the spinal cord, associated with a crush fracture of the third thoracic vertebra and with complete block on the myelogram at that level, followed examination under anaesthetic in the lithotomy position. Laminectomy and decompression was followed by a complete recovery of the cord.

The mechanism of the injury is discussed and certain simple precautions are suggested.

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