



Case Report

Spinal cord compression by a pulmonary hernia[☆]



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ABSTRACT

Spinal cord compression by structures adjacent to the spine is a rare event. The authors present a case of spinal cord compression in an adult caused by a partial herniated lung after a traffic accident. No similar cases were found in the literature.

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Compressão medular traumática por hérnia pulmonar

RESUMO

A compressão medular traumática por estruturas adjacentes à coluna é um evento raro. Os autores apresentam um caso de compressão medular ocasionada por parte do pulmão herniado em um adulto após acidente automobilístico. Não foram identificados casos semelhantes na literatura.

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Introduction

Traumatic spinal cord compression is usually caused by traumatic disc herniation,^{1,2} bone fragment displacement,³ hematomas,⁴ or foreign bodies.⁵ They are usually

associated with high-energy trauma. The authors present a rare case of spinal cord compression caused by a herniated lung intruding into the medullary canal. The authors searched the literature for similar cases and retrieved no results.

[☆] Study conducted at Serviço de Ortopedia e Traumatologia, Hospital Governador Celso Ramos, Florianópolis, SC, Brazil.

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Fig. 1 – Computed tomography showing pneumorrhachis in the thoracic spine.

Case report

A 30-year-old male patient was riding a motorcycle when he crashed into a truck. He was taken to the emergency room; he was conscious and complained of dyspnea, thoracolumbar pain, and lack of sensitivity and strength in the lower limbs. The patient presented tachycardia, tachypnea, and decreased vesicular murmur in the right hemithorax; pleural drainage was performed.

The patient did not present deficits in the upper limbs, but was unable to mobilize the hips and lower limbs and presented anesthesia from the level of the root of L1 (Frankel grade A). He had no other injuries.

The radiographs demonstrated a right hemopneumothorax, with no signs of osteoligamentary lesions of the spine. Computed tomography indicated a spinal cord compression due to a soft tissue component between T9 and T10, and the air was visualized in the epidural space (Fig. 1). No signs of bone damage or dislocations were observed.

Two days after the accident, the patient underwent posterior decompression of the spine through T9 laminectomy; the right lung hernia was visualized through the intercostal space, lateral recess, and T9-T10 disc space to the left (Fig. 2). The intercostal space was sutured and reinforced with fibrin glue. There was no evidence of a herniated disc or other osteoligamentary structures compressing the spinal cord.

The spine was stabilized through a T8-T11 posterior arthrodesis. The patient presented no cardiorespiratory complications during the procedure and did not require further interventions. To date, the neurological level has not been restored.

Discussion

Compression of the spinal cord by the lung is very rare. In the brief review of the literature, the authors did not retrieve any pulmonary traumatic hernia through the intercostal space,⁶ diaphragm,⁷ and cervical area,⁸ and a search in PubMed also

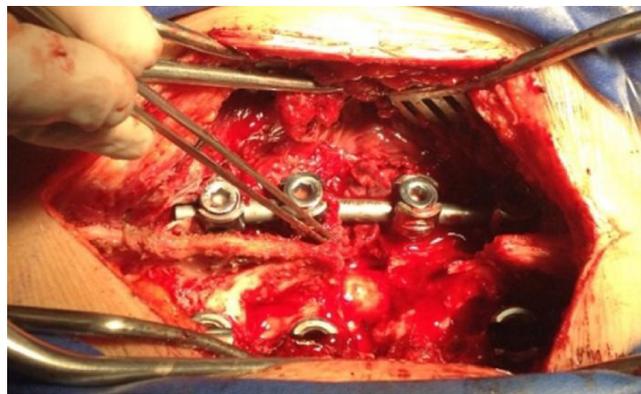


Fig. 2 – Clamp with a piece of lung removed from the spinal canal.

failed to retrieve any case of spinal cord compression due to a traumatic pulmonary hernia. The authors found only one case⁹ of a traumatic jejunal hernia between the L1 and L2 bodies in a 3-week-old infant, but without spinal compression; the trauma mechanism was a spinal hyperextension.

In the present case, it is assumed that the probable trauma mechanism was an extension movement, which generated an intersomatic opening; the pulmonary lobe, through a vacuum mechanism, was sucked and trapped between the vertebral bodies when returning to a neutral position. In this case, the posterior approach was sufficient for spinal decompression.

Conflicts of interest

The authors declare no conflicts of interest.

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