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CASE REPORT

Chylothorax following anterior thoraco-lumbar spine exposure. A case report and review of literature☆

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KEYWORDS
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Abstract Pleural effusion is a possible complication of the thoraco-abdominal approach to the spine. It is more commonly a reactive effusion, but it also may be caused by hemothorax, empyema or, less commonly, a chylothorax. The case of a chylothorax is reported as a late onset complication of a double anterior and posterior instrumented fusion of the lumbar spine. Its management and clinical outcome, and a review of the literature are presented.

PALABRAS CLAVE
Quilotórax;
Derrame pleural;
Pleurodesis;
Ligadura del conducto torácico;
Cirugía de columna;
Complicaciones;
Disección diafragmática

Quilotórax tras abordaje anterior de columna toracolumbar. Revisión bibliográfica a propósito de un caso

Resumen El derrame pleural es una de las posibles complicaciones del abordaje toracoabdominal de la columna. Lo más frecuente es que se trate de una efusión reactiva, pero entre sus causas posibles se encuentran el hemotórax, el empiema o, con menor frecuencia, el quilotórax. Presentamos un caso de quilotórax como complicación tardía de una artrodesis instrumentada de columna lumbar mediante doble abordaje, su manejo y evolución clínica, y una revisión de la bibliografía.

Introduction

Pleural effusion is one of the possible complications in thoracoabdominal spinal approaches. It is most frequently a reactive effusion, but among its possible causes are also hemothorax, empyema and less frequently, chylothorax.

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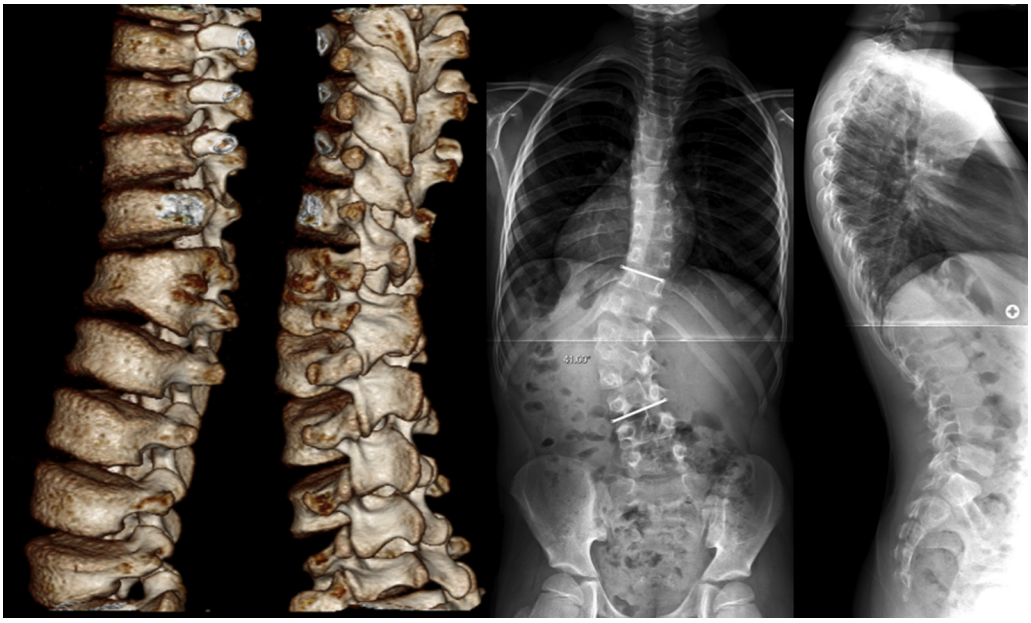

Figure 1 Congenital scoliosis with a T11-L4 thoracolumbar curve of 41. Left semi-segmented hemivertebra L2 fixed to L1.

Due to the low incidence of chylothorax, the lack of comparative clinical studies prevents a consensus on its treatment, as the data come from retrospective case series.[1]

We present a case of chylothorax as late complication in an instrumented arthrodesis of the lumbar spine through a double approach, along with its clinical evolution and management, and a literature review.

Case report

The patient was 9 years and 3 months old, following eutocia after 41 weeks, with no pathological history of interest and currently a regional taekwondo champion. At age 4 he was diagnosed with congenital scoliosis, which was not treated due its mild degree and slow progression, without pain or neurological deficit. The patient was seen at the clinic for the first time at age 9 due to a sudden increase in progression, with a height of 138.4 cm (65.4 cm in sitting position) and a weight of 25.4 kg. The radiographic study showed a left thoracolumbar curve of 41° from T11 to L4 (5 years earlier it was 27.6°) caused by a left semi-segmented hemivertebra L2 fixed to L1, a count of 6 lumbar vertebrae, a small compensatory thoracic curve and a coronal balance of 1 cm to the right of the C7 plumb line, within a normal range. Despite the level of growth remaining (Risser 0 and open triradiate cartilages), the surgical indication was established by the recent progression of the lumbar curve (Fig. 1).

One month after attending the clinic we conducted an intervention through double approach, under control with intraoperative neuromonitoring. In a first surgical stage (anterior release), we placed the patient in right lateral position with elevation of the table to the level of the waist so as to increase lumbar curve and exposure of the discs, thus facilitating the discectomies after subcutaneous sterilization and infiltration with lidocaine and adrenaline 1/200,000. We conducted a left thoracoabdominal approach through subperiosteal resection of the 10° left costal arch, which was preserved for subsequent use as autograft in discal spaces. After accessing the pleural cavity, we entered the abdominal cavity through the diaphragm, through blunt dissection of the retroperitoneum until the psoas was located, identifying the ureter and prevertebral plexus, and accessed the left anterolateral aspect of the lumbar curve, where the discal protrusion was enhanced by the curvature and position. After radiographically assessing the level, we conducted discectomy from T12 to L3 and placed the autograft from the resected rib in palisade. Once the surface was flattened, we verified the flexibility of the curve. We then proceeded to close the wound by planes and left a thoracic drainage.

Next, during the same surgical session, we placed the patient in prone position with 30° flexion of both hips and knees. We employed a posterior approach with release of the posterior elements and instrumentation through uniplanar pedicular screws with a diameter of 4.5 mm and a length of 30 mm. It was possible to instrument both pedicles of T12 and L3, as well as the right pedicle of L1 (the left pedicle of L1 and that of hemivertebra L2 were extremely atrophied and their instrumentation was not possible). The fixation was established with 2 chromium-cobalt bars, and the curve was corrected *in situ* by compression on the left bar and distraction on the right. Once the instrumentation, reduction and fixation of segments of the lumbar curve were completed, we observed a nearly complete spontaneous correction of the compensatory thoracic curve. Lastly, we proceeded to impact the allograft, begin prophylaxis with 1 g vancomycin powder and carry out closure by planes.

The intervention took place without complications, with a blood loss of approximately 200 mL (30% of the estimated volemia, with postoperative hemoglobin of 9.9 g/dL) and without any neurophysiological events observed in the normal motor and sensory evoked potentials up to 20 min after the last reduction maneuver.