PSEUDOTUMORAL CHEST WALL DISTORTION THROUGH SCOLIOSIS AND ROTATION – POSSIBLE COMPLICATION OF CHILDHOOD THORACOTOMY

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Abstract: *We present a 31-year-old female patient, with a history of postero-lateral thoracotomy performed during childhood for the correction of an aortic coarctation who was referred to our unit with the diagnosis of chest wall tumour for biopsy/resection. At the local examination, an obvious distortion of the left side of the antero-inferior chest wall was noted. The computed tomography (CT) scan showed a severe scoliosis associated with rotation, the pseudotumoral distortion being the result of the anterior displacement of the chest wall secondary to the rotation of the vertebral column and trunk. The patient follows a conservative treatment (kinetotherapy). The case is interesting through severity and imagistic aspect. A correct evaluation of the CT scan has avoided unnecessary invasive procedures.*

INTRODUCTION

Scoliosis remains a problem of modern medicine, requiring a complex and multi-disciplinary approach, including surgery in severe cases.(1-3) It has also been reported as a possible complication of lateral thoracotomy performed during childhood, although the mechanisms involved in this particular situation are not clear.(4,5)

PURPOSE

We present a case of severe scoliosis and trunk rotation which resulted in a pseudotumoral distortion of the chest wall, possible as a complication of a postero-lateral thoracotomy performed in childhood.

CASE REPORT

We report a 31-year-old female patient, with a history of aortic coarctation treated by open surgery through a postero-lateral thoracotomy performed at the age of 6. The patient developed progressive scoliosis without undergoing any specific treatment due to economic reasons. Her current complaints were esthetic concern, back pain and the development of a chest wall mass.

The patient was referred to our unit with the clinical diagnosis of chest wall tumour for biopsy or local resection.

At local examination, the patient presented scoliosis and a healed postero-lateral thoracotomy scar. In the lower part of the left anterior chest wall, an obvious mass was noted, with no clear delineation, hard consistence and no local pain.

A CT scan showed, in transversal sections, a distortion of the lower part of the left anterior chest wall but without any tumour.

The sagital and the frontal sections have shown a severe scoliosis with rotation. We concluded that the pseudotumoral mass was the result of the anterior displacement of the chest wall, secondary to the rotation of the vertebral column and trunk associated with the scoliosis.

We decided that there was no indication for biopsy or local excision and the patient was discharged with the recommendation of periodic follow-up and specific kinetotherapy.

Figure no. 1. Obvious distortion of the antero-inferior part of the chest – left side

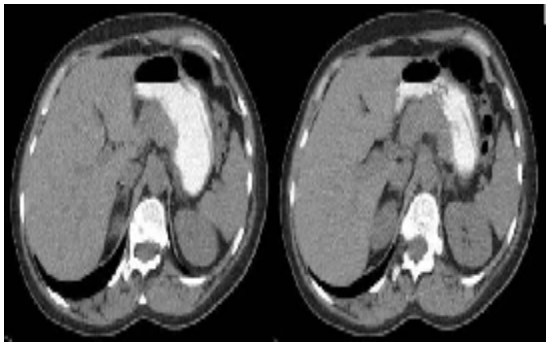

Figure no. 2. CT scan – transversal sections. Distortion of the chest wall with no obvious tumour

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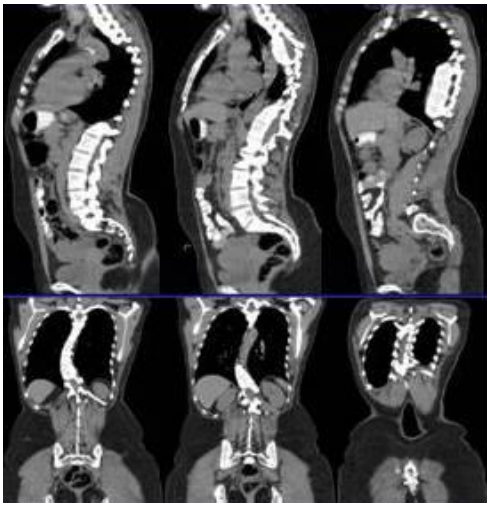
Figure no. 3. CT scan – sagittal and frontal sections showing the scoliosis and the rotation of the vertebral column and trunk



DISCUSSIONS

Scoliosis is a possible complication after lateral thoracotomy performed during childhood. Although the mechanisms involved in its development are not clear, it should be a matter of concern after any lateral thoracotomy performed in a pediatric patient.(4,5)

Most of the studies dealing with this problem were performed in children with cardio-vascular congenital defects that required surgical treatment.(6-9) Although the postero-lateral thoracotomy has been associated with a higher rate of scoliosis, there is no explanation why the non-operated patients have also a significantly higher rate of scoliosis compared to the general population. The higher rate observed after surgery for aortic coarctation compared with patent ductus arteriosus may be explained by the increased difficulty of the surgery for aortic coarctation, usually requiring a larger thoracotomy incision.(8,9)

In order to avoid the development of scoliosis after cardio-thoracic surgery in children, several strategies have been proposed:

- the use of endovascular procedures for the treatment of patent ductus arteriosus and aortic coarctation;(9)
- the use of sternotomy for the correction of congenital heart defects;(10)
- the use of thoracoscopic approach for esophageal and pulmonary diseases requiring surgery in pediatric population;(11,12)
- the use of more limited and muscle-sparing approaches instead of the classic postero-lateral thoracotomy.(13)

Other common-sense recommendations include careful follow-up and specific kinetotherapy. If corrective surgery is required in non-adult patients, modern procedures based on “growth-friendly” instrumentation systems should be preferred to allow further normal development of the spine and chest.(3)

CONCLUSIONS

The case reported by us is interesting due to the severity of the scoliosis and the association with a vertebral column and trunk rotation resulting in a pseudotumoral chest wall displacement. A careful analysis of the CT scan has allowed a correct diagnosis and avoided unnecessary invasive procedures (biopsy or local excision).

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