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Case Report

Congenital Thoraco-Lumbar Scoliosis with Hemi Vertebra in a 16-Year-Old Male: A Case Report

Scoliose Thoraco-Lombaire Congénitale avec Hémivertèbre chez un Adolescent : À Propos d'un Cas

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ABSTRACT

Scoliosis is a spinal deformity characterized by a lateral curvature of the spine in the coronal plane. It is a rare phenomenon which affects various age groups in children and adolescents. Most cases of scoliosis are idiopathic but other causes due to congenital malformations, neurological, muscular and collagen disorders are also found. Although not symptomatic most of the time, patients with scoliosis can suffer from stigmatization and psychological distress of being different from others. The goal of the treatment is to be able to correct the deformity and restore a normal growth curve and also for disfigurement reasons. We report the case of an adolescent male with congenital thoraco-lumbar scoliosis and hemi-vertebra. On physical examination, he was thin and had an S-shaped midline curve on his back with mild right hip gibbosity. Laminectomy and arthrodesis were done using 15 pedicle screws (4.5x40mm for thoracic vertebra and 5.5x50mm for lumbar vertebra), three connectors and two rods. Follow up after surgery was uneventful with no post-op complications. A post-operative x-ray obtained four days after surgery was unremarkable. The patient was verticalized at 10 days after surgery and had no motor deficits. The patient was discharged on after 14 days post-op.

RÉSUMÉ

La scoliose est une déformation de la colonne vertébrale caractérisée par une courbure latérale de la colonne dans le plan coronal. Il s'agit d'un phénomène rare qui touche différentes tranches d'âge chez les enfants et les adolescents. La plupart des cas de scoliose sont idiopathiques, mais d'autres causes dues à des malformations congénitales, des troubles neurologiques, musculaires et du collagène sont également observées. Bien qu'ils ne présentent pas de symptômes la plupart du temps, les patients atteints de scoliose peuvent souffrir de stigmatisation et de détresse psychologique du fait d'être différents des autres. L'objectif du traitement est de corriger la déformation et de rétablir une courbe de croissance normale, mais aussi de remédier au problème de défiguration. Ce cas clinique est celui d'un adolescent atteint d'une scoliose thoraco-lombaire congénitale avec hémi-vertébrale. À l'examen physique, il était mince et présentait une courbe médiane en forme de S sur le dos avec une légère gibbosité de la hanche droite. La laminectomie et l'arthrodèse ont été réalisées à l'aide de 15 vis pédiculaires (4,5x40 mm pour la vertèbre thoracique et 5,5x50 mm pour la vertèbre lombaire), de 3 connecteurs et de 2 tiges. Le suivi postopératoire a été simple et n'a donné lieu à aucune complication. Une radiographie postopératoire a été réalisée quatre jours après l'intervention. Le patient a été verticalisé 10 jours après l'opération et ne présentait pas de déficit moteur. Le patient est sorti de l'hôpital 14 jours après l'opération.

INTRODUCTION

Scoliosis is a spinal deformity consisting of an abnormal lateral curvature and rotation of the vertebra of more than 10°. There are many causes of scoliosis but most cases are idiopathic. Idiopathic scoliosis can be classified using age, etiology, severity and type of curve. In Europe, scoliosis varies between 1.7 to 5.2%[1] and is more frequent in males than in females [2]. Large curve scoliosis can result in significant restrictive lung disease and cor pulmonale and also degenerative osteoarthritis with causes severe back pain. Also, adolescents with this deformity often feel stigmatized by this disfigurement(1).The treatment for scoliosis requires surgery which is very costly and does not always has perfect results but the importance of treatment must be considered after thoughtful balancing between functional disorders and cosmetic. This is a case report on a 17-

year-old male with congenital thoracolumbar scoliosis with hemi-vertebra.

CASE REPORT

A 16-year-old male, with no significant past history, brought by his mother on outpatient consultation after noticing an unusual posture of her son while standing. The patient had no major complains. On physical examination, he was thin and had an S-shaped midline curve on his back with mild right hip gibbosity (Fig 1).

Figure 1. Physical examination with a S-shape

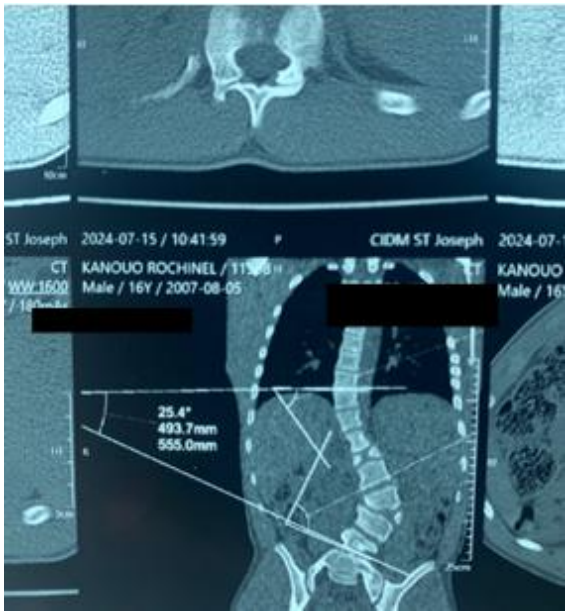

Fig 2. Thoraco-lumbar CT scan with Cobb angle measurement

This confirmed the diagnosis of congenital thoraco-lumbar scoliosis. A surgery was indicated for correction of the spinal deformity and an informed consent was obtained.

There were no other neurological, cardiovascular or genito-urinary disorders found. The diagnosis of scoliosis was done and a thoraco-lumbar CT scan (Fig 2) was realized which showed a left thoraco-lumbar scoliosis with a Cobb angle measured at 25° with a T12 and L3 hemi-vertebra well seen on 3D reconstruction image (Fig 3).

Laminectomy and arthrodesis was done using 15 pedicle screws (4.5x40mm for thoracic vertebra and 5.5x50mm for lumbar vertebra), 3 connectors and 2 rods (Fig 4). Follow up after surgery was simple with no post-op complications.

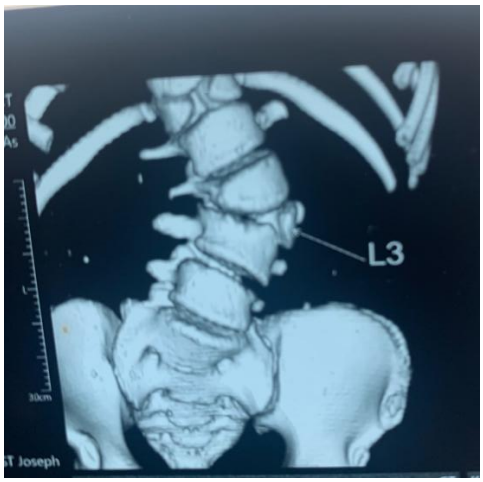

Fig 3. 3D reconstruction image of the hemi-vertebra

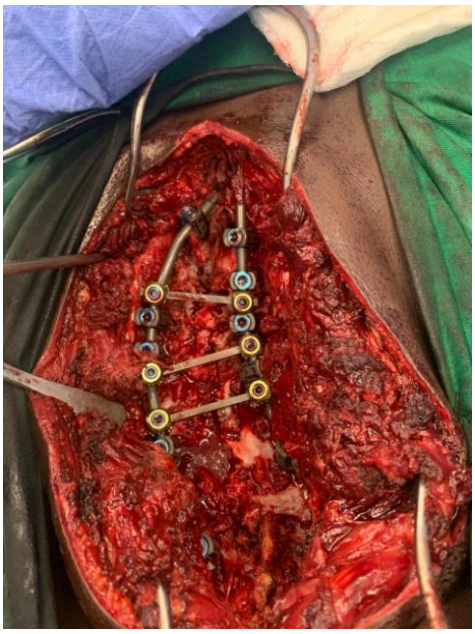

Fig 4. Laminectomy and arthrodesis image

A post-operative x-ray was obtained 4days after surgery was normal. The patient was verticalized at 10 days after surgery and had no motor deficits. The patient was discharged on after 14 days post-op.

DISCUSSION

Congenital scoliosis due to Hemi vertebra has found mostly on male children than female as Antonio Oliveira and the frequent clinical presentation concerned more thoracic spine than other segments [3] . Many children presented with complaint of low back pain, which began earlier than our case and could associate

with neurologic, cardiac genito-urinary disorders[4]. Also, our patient presents deformation with Cobbs angle at 25° without significant clinical complaints contrary to many cases which presented many neurologic and pain complaints at earlier similar to Wang [5]or at approximative ages as Haouas[6]. Normally, congenital scoliosis with one hemi vertebra is discovered earlier compared to that has two because the second one gives a certain spine stability with generally less or no clinical complaints and cobbs angle less than 60° found by Yang[7]. The late discovery of congenital with Hemi vertebra does not permit using of non-operative management options as Carreda demonstrated (8), therefore the surgical option required is the fusion with pedicle screws which is more expensive and can induce another skeletal disabilities showed by He (9) . The interest of this case is various. Firstly, our case shows that congenital scoliosis can be seen later, without clinical complaints or organ's disorders likewise, fusion as surgical option can be a better option to prevent late neurological or skeletal disabilities and postoperative complications as observed by Yang (7). In addition, the congenital scoliosis can be discovering later in teenage. The limits of our study are many: the first one is the number of patients; we needed many samples for finding more significant results. This difficulty can be explaining by poverty, low level of education, non-adapted local equipment and short postoperative follow-up.

CONCLUSION

Scoliosis is a spinal deformity consisting of an abnormal lateral curvature and rotation of the vertebra of more than 10°. Congenital scoliosis with hemi vertebra is a common of congenital scoliosis and occurs mainly to male child than female. our patient is male who presents this deformity with Cobbs angle at 25° without other organ's abnormalities nor neurological disorders. The surgery has done with fusion by scrolls without noticed issues and the postoperative follow-up was simple without any complications. The patient was verticalized at 10 days and discharged at 14 days after surgery. This case shows it is important to follow up patient, congenital scoliosis with hemi vertebra can be found later in teenage and can be associated without organ disabilities and neurological disorders. The postoperative follow-up shows no complications and the patient actually at 3 months post-surgery has no more pain complaints.

DECLARATIONS

Conflicts of interest

The authors declare no conflict of interest

Funding

The work was carried out with own funds

Ethical considerations

All stages of the work were carried out in compliance with the Declaration of Helsinki. The informed consent of the patient was obtained for publication.

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