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Khelifa Adel, Aichaoui Fayçal, Berchiche Lakhdar, Morsli Abdelhalim

Algiers University/Faculty of Medicine; and Department of Neurosurgery, Mohamed Lamine Debaghine University Hospital (BEO), Algiers - ALGERIA

ABSTRACT

Spontaneous regaining of radiological normal shape with vertebral compression fracture is very uncommon in the cervical spine; conducting confusion regarding the presence of a potentially surgical lesion. We report the case of 48 years old man without past medical history who presented post traumatic compression fracture that resolved spontaneously after transcranial traction. The patient was operated on with a good outcome. This report aims to confirm the presence of such phenomena already reported in the dorso-lumbar spine.

INTRODUCTION

Vertebral compression fracture is a common lesion in the cervical spine trauma; characterized by a loss of the vertebral height. Spontaneous regaining of the initial radiological normal shape is very uncommon in the cervical spine; conducting to confusion regarding the presence of potentially surgical lesion.

CASE REPORT

The patient is a 48 years old man without past medical history victim of road traffic accident. The clinical exam at the admission found a conscious patient without neurologic deficiency presenting neck pain. The patient is scored E on the ASIA Impairment scale. Initial X-rays performed in standing position objectified C6-C7 bilateral facet joint dislocation and distraction; with anterior compression fracture of the C7 body causing an angulation of 40°; without body listhesis; resulting in a significant regional kyphosis (Figure A). With slight careful distraction-extension movement while putting the cervical collar the spine CT performed in supine position objectified partial facet joint reduction (Figures B, C and D). Cervical spine MRI objectified no significant intervertebral disk hernia and no spinal compression (Figure E and F). The patient was put under transcranial traction using Gardner-

Keywords

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Corresponding author:
Khelifa Adel

Department of Neurosurgery,
Mohamed Lamine Debaghine
University Hospital (BEO);
Algiers - Algeria

drkhelifaadel@gmail.com

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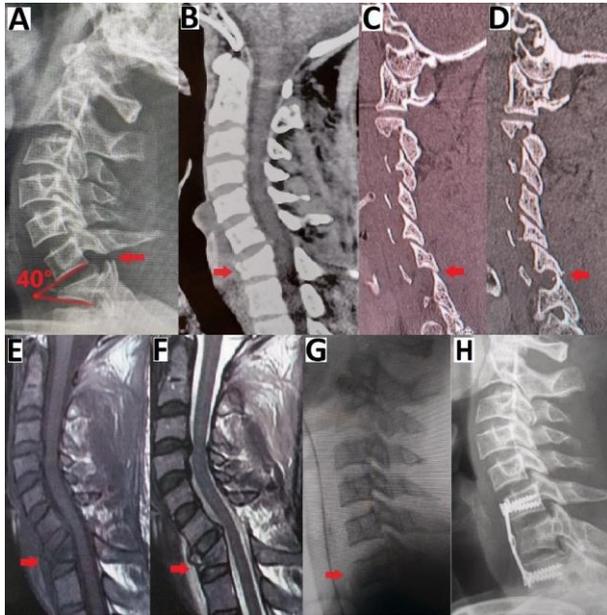
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Wellstongs, gradually to 6 Kg (1/10 the boy weight). Impressively per-operative fluoroscopy at the operating room objectified not only a total reduction of facet joint dislocation, but also C7 spontaneously regained totally a normal height. Through a Smith Robinson approach; a C6-C7 and C7-D1 discectomy were performed with partial corpectomy of C7, autografting and C6-D1 fixation. Postoperatively, the patient preserved his neurologic integrity.



A: initial lateral X-rays; showing the degrees of angulation caused by C7 compression lesion and the arrow is showing the amount of facet joint initial dislocation. **B:** Sagittal CT, the arrow is showing the slight improvement in vertebral height in supine position. **C&D:** Parasagittal CT passing through left and right facet joints, the arrow is showing the partial reduction of facet joint dislocation. **E&F:** Spinal MRI in sagittal T1 and T2 WIs, the arrow is showing the pre-vertebral hematoma. **G:** per-operative lateral fluoroscopy, the arrow is showing a total reduction of C7 body height. **H:** Post-operative lateral X-rays.

DISCUSSION

McKiernan *et al.* described on dorso-lumbar levels; the phenomena of “Dynamic Mobility of Vertebral Compression Fractures” in osteoporotic patients where a postural height reduction was noted in many patients candidates for vertebroplasty^[1]. In our case -although a slight normalization in vertebral height was noted in CT performed in supine position compared to X-rays performed in standing position- we explain height restoration by the transcranial traction force applied on the superior end plate of the inferior vertebra transmitted by an undamaged

disk. In fact, based on the relatively healthy disk aspect on MRI, the absence of body listhesis and the per-operative harmonious aspect of the disk; we think that the relatively integrity of the disk contributed to this phenomena. In the presented case the compression fracture was associated with bilateral facet joint dislocation and though the mechanism is hyperflexion, posterior distraction and anterior compression^[2]. In such cases closed reduction with transcranial traction is highly indicated; and giving the absence of significant disk hernia it is without risks. Although the patient is neurologically intact and kyphosis has been corrected; the lesion is still highly unstable, giving the facet joint dislocation^[2], sign of severe ligamentous damage^[3]. With reduced bilateral facet joint dislocation, anterior fixation is our choice; it offers the possibility of rigid fixation with both arthrodesis and osteosynthesis, allows to perform a discectomy and especially in that case to perform a corpectomy. In fact although preoperative X-rays body aspect seemed to be normal we insisted on corpectomy and body reconstruction using graft, because we think that histological architecture of the body has been severely damaged and though will not be able to support the force transmitted by head and neck weight. We find this rational in dorso-lumbar compression fractures where vertebroplasty is performed with best outcome in patients with spontaneous height reduction after hyperextension positions^[1,4]

CONCLUSION

In this report we confirm the presence of spontaneous height restoration of compression fractures in cervical spine. This radiological normalization should not hold back body replacement in case of surgical management.

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