



Case Report

Clinical Implications of the Rare Anomaly of a Cervical Hemivertebra over a Period of 30 Year

Catharina Löhnert^{1*}, Athanasios K. Petridis^{1**}, Homajoun Maslehaty¹ and Martin Scholz¹

Abstract

Objective: We stress out the rare anomaly of a cervical Hemivertebra associated with adjacent level radiculitis due to degeneration.

Results: We present a case of a 58 years old female with spontaneous finding of a cervical hemivertebra at the level C5. The patient suffered from cervical nerve root compression syndrome at the level C6/7 at the convex side of the scoliosis. She was treated by a ventral cervical surgery with discectomy C6/7, nerve root decompression at the foraminal stenosis C7 and poly-methylmethacrylate fusion of this segment.

Conclusion: The entity of a developmental anomaly of a hemivertebra lead to adjacent level disease which can cause radicular compression. The therapeutic strategy to choose in such cases can be difficult. In the present case we decided to perform a foraminotomy and fuse the adjacent level with poly-methylmethacrylate. We did not remove the hemivertebra.

Keywords

Hemivertebra; Cervical spine

Introduction

Occurrences of cervical hemivertebrae are described very infrequently in the literature and are usually diagnosed in the childhood. Commonly they occur in the lumbar and thoracic spine with associated congenital scoliosis.

Concerning cervical hemivertebrae just few cases are reported, in which the children were treated by excision of the hemivertebra and fusion of the affected spine level [1,2]. The indication for surgery was scoliosis and aesthetic aspects in all cases. Surgery led to satisfying results in correcting the angle of scoliosis [1].

We present a very rare case of an adult patient, suffering from cervical radicular pain syndrome, in which a cervical vertebra was diagnosed to be the source of the symptoms. We describe clinical aspects and performed therapy.

*Corresponding author: Athanasios K. Petridis, University Hospital Kiel, Department of Neurosurgery, Duisburg Wedau clinics, Zu den Rehwiesen 9,47055 Duisburg, Germany, Tel: +49-203-733-2425; Fax: +49-203-733-0; E-mail: optidisc@aol.com

Received: January 30, 2013 Accepted: March 29, 2013 Published: April 01, 2013

Case Report

A 58 years old female patient presented with progressive cervico-brachialgia since 30 years. In her childhood a cervical scoliosis was diagnosed and she was treated conservatively by a stiff neck over night. On examination she presented radicular pain and paresthesias corresponding to the right sided C7 nerve root. Neuroimaging (CT scanning and MRI of the cervical spine) showed a right sided hemivertebra formation at the level C5, causing a right convex scoliosis of the cervical spine (Figure 1). Furthermore a right sided osteophyte at the C6 level and foraminal stenosis at the C7 level was visible. The patient underwent surgical treatment in terms of ventral decompression and fusion of the C6/C7 level.

In the postoperative course the patient recovered well and her symptoms improved significantly. She was mobilized rapidly under physiotherapeutical assistance and presented no neurological symptoms. Due to the rapid improvement of her symptoms she declined postoperative imaging was discharged home in good clinical condition.

Discussion

There are several bone anomalies of the cervical spine, which are described in the literature. These are absent cervical spine pedicles [3-5] and phalanx-like osseous structures [6]. It is presumed that occurrence of cervical or thoracic hemivertebra is associated with significantly more intraspinal abnormalities, compared to lumbar localization [7]. This hypothesis is exemplary supported by the report of a cervical hemivertebra with associated cervical intradural lipoma [8]. Additionally, cardiac and urogenital anomalies might occur

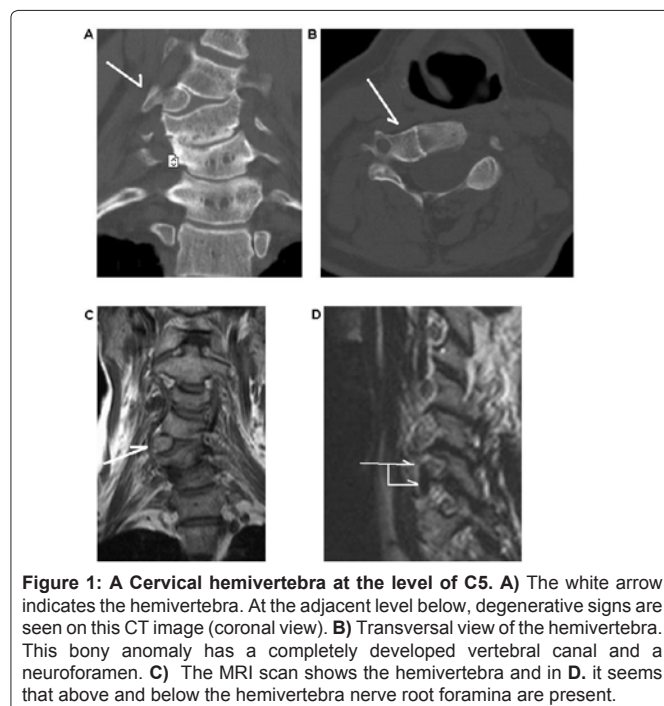


Figure 1: A Cervical hemivertebra at the level of C5. A) The white arrow indicates the hemivertebra. At the adjacent level below, degenerative signs are seen on this CT image (coronal view). B) Transversal view of the hemivertebra. This bony anomaly has a completely developed vertebral canal and a neuroforamen. C) The MRI scan shows the hemivertebra and in D, it seems that above and below the hemivertebra nerve root foramina are present.

[7]. In our case the patient did not have any cardiac or urogenital anomalies and there were no other intraspinal abnormalities. The only anomalies seen on the CT images were associated neck ribs at the level of C7. The issue that made this case interesting for us is that the patient suffered from radicular pain for a long period and the hemivertebra remained undetected.

There are different treatment options in cases of cervical hemivertebrae. Resection of the hemivertebra aims to improve the scoliosis axis [2]. In the present case the scoliosis was not cosmetically important, however, cervical disbalance and adjacent level disease with osteophytes and neuroforaminal stenosis was caused by this anomaly. Decompression of the C7 foramen and PMMA fusion of C6 and C7 vertebral bodies achieved a satisfying pain relief, avoiding the risk of a hemivertebra resection, in terms of injury of the vertebral artery or nerve roots. Since the hemivertebra had an intact and complete vertebral artery canal the removal of the bony anomaly could lead to an injury of the vertebral artery.

Conclusion

A hemivertebra of the cervical spine does not always lead to a significant visible scoliosis. In cases of adjacent level disease with nerve root compression the surgical treatment strategy has to be chosen individually. Resection of the hemivertebra is not always necessary. If scoliosis is not distinct and the risk of removing the bony

anomaly appears high a simple nerve root decompression through a foraminotomy and ventral (anterior) vertebral fusion can be the right therapeutic strategy.

References

1. Ruf M, Jensen R, Harms J (2005) Hemivertebra resection in the cervical spine. *Spine* 30: 380-385.
2. Deburge A, Briard JL (1981) Cervical hemivertebra excision. *J Bone Joint Surg Am* 63: 1335-1338.
3. Mays S (2007) Absent cervical spine pedicle: report of a case in a mediaeval skeleton. *Skeletal Radiol* 36: 773-777.
4. Morales-Cano MD, Vazquez-Saez V, Reus-Pintado M, Climent- Oltra V, Martinez Perez M (2004) Congenital absence of a cervical spine pedicle. Incidental finding in patient with cervical pain. Diagnostic approach by helical CT. *Neurocirugia* 15: 476-479.
5. Gomez MA, Damie F, Besson M, Roger R, Alison D (2003) Congenital absence of a cervical spine pedicle: misdiagnosis in a context of trauma. *Rev Chir Orthop Reparatrice Appar Mot* 89: 738-741.
6. Atalar H, Yavuz OY, Dogruel H, Catal SA, Sayli U (2005) Phalanx-like osseous structure posterior to the cervical vertebrae: a hitherto unreported location for a rare anomaly. *Acta Orthop Traumatol Turc* 39: 361-364.
7. Basu PS, Elsebaie H, Noorden MH (2002) Congenital spinal deformity: a comprehensive assessment at presentation. *Spine* 27: 2255-2259.
8. Moghaddam AM, Tanrıöver N, Ulu MO, Muhammedrezai S, Akar Z (2008) Cervical intradural lipoma with associated hemivertebra formation at C6 level: a case report. *Turk Neurosurg* 18: 187-190.

Author Affiliation

Top

¹Department of Neurosurgery, Wedau Kliniken Duisburg, Germany
[#]First and second author contributed equally

Submit your next manuscript and get advantages of SciTechnol submissions

- ❖ 50 Journals
- ❖ 21 Day rapid review process
- ❖ 1000 Editorial team
- ❖ 2 Million readers
- ❖ More than 5000 
- ❖ Publication immediately after acceptance
- ❖ Quality and quick editorial, review processing

Submit your next manuscript at • www.scitechnol.com/submission