Atlantoaxial pseudoarticulation as a cause of neck pain: case illustration

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<https://thejns.org/doi/abs/10.3171/2018.8.SPINE18918>

KEYWORDS pseudoarticulation; rudimentary joint; false joint; Bertolotti syndrome; neck pain; cervical spine; atlantoaxial

PSEUDOARTICULATION in the setting of lumbosacral transitional vertebrae, named Bertolotti syndrome, is present in approximately 12.5% of the population, may often be confused with other etiologies of lumbosacral back pain, and can be difficult to diagnose.¹ Anesthetic injections into the pseudoarticulation, also termed a false or rudimentary joint, have a therapeutic effect and can be used as a diagnostic measure to predict who may benefit from surgical intervention in patients in whom conservative therapy fails.² Although well characterized in the lumbosacral spine, pseudoarticulation in the cervical spine has never, to our knowledge, been reported in the literature.

We present the case of a 27-year-old woman who noted neck pain without radicular symptoms for greater than 10 years. After exhaustion of conservative measures, a radiological workup with radiographs, CT scans, and MR images demonstrated a left-sided atlantoaxial false joint, suspected to be a congenital anomaly. This pseudoarticulation's position was medial and posterior to the true left C1–2 articulation, between the inferior aspect of the C1 lamina and the superior aspect of the C2 lamina (Fig. 1A–C). The patient received a lidocaine/dexamethasone injection into the false joint, and she experienced significant but temporary pain relief. Therefore, she subsequently underwent a left-sided C1–2 hemilaminectomy for resection of the pseudoarticulation (Fig. 1D). After the

immediate postoperative recovery, she reported sustained, complete resolution of her neck pain at the 10-week follow-up. The present case of atlantoaxial pseudoarticulation illustrates a previously unreported etiology of occult neck pain with its associated diagnostic imaging and surgical treatment.

References

1. Jancuska JM, Spivak JM, Bendo JA: A review of symptomatic lumbosacral transitional vertebrae: Bertolotti's syndrome. *Int J Spine Surg* 9:42, 2015
2. Jönsson B, Strömqvist B, Egund N: Anomalous lumbosacral articulations and low-back pain. Evaluation and treatment. *Spine (Phila Pa 1976)* 14:831–834, 1989

Disclosures

The authors report no conflict of interest concerning the materials or methods used in this study or the findings specified in this paper.

Author Contributions

Conception and design: all authors. Acquisition of data: Boucher, Kashlan, Refai. Analysis and interpretation of data: Boucher, Kashlan, Refai. Drafting the article: Boucher, Kashlan. Critically revising the article: all authors. Reviewed submitted version of manuscript: all authors. Administrative/technical/material support: Boucher, Kashlan, Refai. Study supervision: Refai.

SUBMITTED July 27, 2018. **ACCEPTED** August 31, 2018.

INCLUDE WHEN CITING Published online November 2, 2018; DOI: 10.3171/2018.8.SPINE18918.

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FIG. 1. Left C1–2 hemilaminectomy for removal of left atlantoaxial pseudoarticulation. **A:** Preoperative sagittal CT scan slightly to the left of midline demonstrates the C1–2 false joint. **B:** Preoperative lateral upright radiograph shows the lesion seen on CT (in panel A). Of note, there was no instability on dynamic flexion-extension radiographs. **C:** Preoperative axial T2 MR image shows the pseudoarticulation with mass effect on the spinal cord. **D:** Postoperative radiograph illustrates the absence of the resected pseudoarticulation and the remaining normal posterior ring of C1. The *red circles* throughout the figure highlight the lesion further. Figure is available in color online only.