Editorial

Evidence-based medicine

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Bakhsheshian et al. present a review paper evaluating the current state of evidence-based medicine in the nonoperative management of traumatic thoracolumbar burst fractures.¹ They performed a systematic review according to the Cochrane guidelines. This paper is very well written. They identified 45 papers, over 20 years, which primarily investigated nonoperative management, and found 9 of the 45 papers had either Level I or II evidence. The authors have comprehensively reviewed these 9 papers. They excluded papers that assessed osteoporotic or pathological fractures. They determined that for neurologically intact patients, better outcomes were often achieved with conservative treatment regimens compared to operative management. They clearly identified fewer complications in the nonoperative management groups, and often the functional outcomes were superior in the group that did not undergo surgery. The nonoperative management techniques evaluated included bed rest, closed reductions, orthoses, and body casts. They also demonstrated that the presence of a neurological deficit is not necessarily a contraindication to nonoperative treatment; however, they acknowledge that this question has not been satisfactorily addressed in the current literature. They attempted to compare different conservative treatment approaches but their review did not allow for concluding that a specific conservative treatment technique was better than the others. A potential shortcoming of this paper is that

the degree of kyphosis present, an indirect indicator of posterior ligamentous complex integrity, was not always stated (it was stated in the paper by Wood et al. and was an exclusion criterion). In reviewing these nonoperative management papers, it appears that they predominantly assessed lesser degrees of severity of bone and/or ligamentous injury. The majority of cases involved patients without neurological deficits. What is readily apparent is that all burst fractures, or what are reported as burst fractures, are not alike. Thoracolumbar burst fractures with significant neurological findings or with gross instability likely require surgical intervention; however, this review paper demonstrates that some lesser “burst” fractures likely are managed quite successfully with conservative treatment regimens. Importantly, the authors recognized the importance of both neurological and functional outcomes in this review.

(<http://thejns.org/doi/abs/10.3171/2014.5.FOCUS14190>)

Disclosure

Dr. Arnold has served as a consultant to Medtronic Sofamor Danek, LifeSpine, Integra Life, SpineWave, Stryker Spine, FzioMed, MIEMS, and AOSpine North America; has direct stock ownership in Z-Plasty; has served on the Board of Directors of LSRS; and has been a Committee Member for the NASS Professional Compliance Panel and the NASS Ethics Committee. Dr. Heary currently serves on the Board of Directors of CSRS and LSRS.

Reference

1. Bakhsheshian J, Dahdaleh NS, Fakurnejad S, Scheer JK, Smith ZA: Evidence-based management of traumatic thoracolumbar burst fractures: a systematic review of nonoperative management. *Neurosurg Focus* 37(1):E1, 2014

Please include this information when citing this paper: DOI: 10.3171/2014.5.FOCUS14190.