Letters to the Editor

NEUROSURGICAL FORUM

Timing of radiographic assessment of fusion

TO THE EDITOR: In the July 2014 issue of the *Journal of Neurosurgery: Spine*, there is a review of the guidelines for fusions in degenerative disease of the lumbar spine (Choudhri TF, Mummaneni PV, Dhall SS, et al: Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 4: Radiographic assessment of fusion status. *J Neurosurg Spine* 21:23–30, July 2014). Choudhri et al.¹ discuss the pros and cons of various methods of determining if bony fusion has formed. However, fusion is a dynamic process occurring over many months. The authors failed to address the timing of the radiographic assessment. Could they give some guidance from the literature about when it is most appropriate to study the patient? Most importantly, at what point in time would a patient be expected to have a solid fusion? If there is no radiographic evidence of bony fusion, at what point in time after surgery is it reasonable to ascertain a pseudarthrosis? I have generally waited at least 1 year to assign a diagnosis of probable non-union.

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DISCLOSURE

The author reports no conflict of interest.

Reference

1. Choudhri TF, Mummaneni PV, Dhall SS, Eck JC, Groff MW, Ghogawala Z, et al: Guideline update for the performance of fusion procedures for degenerative disease of the lumbar spine. Part 4: Radiographic assessment of fusion status. *J Neurosurg Spine* 21:23–30, 2014

Response

Dr. Miller has posed a series of insightful and clinically relevant questions related to the timing of radiographic fu-

sion assessment and diagnosis of pseudarthrosis. Such issues are critical in the postoperative evaluation of patients undergoing lumbar fusion procedures and are an integral part of the outcome analysis. Unfortunately, the current guideline update and, more specifically, the chapter investigating the radiographic assessment of fusion were not explicitly constructed to address these issues. Therefore, a valid recommendation cannot be provided.

Although clinical guidelines involve a comprehensive review of the best available evidence, all subject matter pertaining to a specific topic is not included in the review. If such an approach were undertaken, it would create an unwieldy document too general and too extensive to function as an effective clinical tool. Guidelines must therefore have a specific directive to remain clinically relevant. The focus of the chapter in question was to evaluate which radiographic modalities were more reliable and which findings were consistent with a solid arthrodesis. The literature search, and therefore the evidence reviewed, did not address “when” the radiographic analysis should be performed or the diagnosis of pseudarthrosis considered.

A secondary objective of clinical guidelines, however, is to generate such inquiry and identify knowledge gaps to foster future research. As the current work was meant to serve as an update for the 2005 guidelines, the panel decided not to deviate from the previous search strategies or topics reviewed. It is hoped that these and other pertinent clinical questions will be generated from the current work and stimulate future investigation.

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