North American Spine Society Journal (NASSJ) 20 (2024) 100568

Contents lists available at ScienceDirect

North American Spine Society Journal (NASSJ)

journal homepage: www.elsevier.com/locate/xnsj

Letters to the Editor

Letter to the editor regarding: "The utility of vertebral Hounsfield units as a prognostic indicator of adverse events following treatment of spinal epidural abscess"

To the Editor,

We read with interest the article by Crawford et al. published in your respected journal [1]. The efforts of many authors worldwide are aimed at discovering the predictors of possible complications after treatment of patients with spinal epidural abscesses (SEA), in which the mortality varies between 5% and 16% and less than 50% of the surviving patients completely recover [2]. Knowledge of the predictors of complications will help optimize treatment and reduce costs, both for the funding institutions, as well as for the patients themselves. In this regard, the study by Crawford et al. investigating the possible association of Hounsfield units (HUs) with complications and mortality in this high-risk population is a step in the right direction [1].

At the same time, the publication of Crawford et al. raises some questions for us, the answers to which we did not find in their presentation, and we would like to share them. There are 2 types of SEA—spontaneous and iatrogenic (after surgical and anesthetic interventions), and we believe that the authors should have indicated whether they excluded iatrogenic SEA in their study. Spontaneous SEA are further classified into: a/ primary (PSEA)—from a remote focal infection by a hematogenous route (arterial or venous) or through lymphatic vessels directly into the epidural space, and b/ secondary (SSEA) – per continuitatem from an adjacent infected structure (spondylodiscitis or paravertebral abscess) [3]. In their paper, Crawford et al. also do not distinguish primary from secondary SEA, which have a different pathogenesis, clinical course, treatment and possible complications. When SSEA occur due to spondylodiscitis, there is often some degree of bone destruction, and despite response to antibiotic therapy, about 40% of them require subsequent surgical intervention and instrumentation to avoid future instability [4]. In these cases, the study of HUs is of utmost importance in predicting future mechanical complications, which however, would appear after the 90-day period. The more common dorsal localization of PSEA allows evacuation of the abscess by percutaneous aspiration or through a smaller surgical approach. The lack of involvement of the vertebral bodies and intervertebral discs by the infection significantly reduces the risk of subsequent development of instability, which does not require instrumentation [3]. In these cases, the possibility of subsequent mechanical complications is minimal and not related to the SEA. From the 90-day complications presented in Table 2 by Crawford et al., none could be attributed to the bone mineral density and osteoporosis, which can be determined by measuring HUs [1].

We fully support the opinion of Crawford et al. that HUs values and 3-dimensional images may show predictors of adverse complications, such as sarcopenia or the size and functionality of the psoas major and minor, and erector spinae muscles.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

[1] Crawford AM, Striano BM, Amakiri IC, et al. The utility of vertebral Hounsfield units as a prognostic indicator of adverse events following treatment of spinal epidural abscess. North Am Spine Soc J (NASSJ) 2024;17:100308.
[2] Lener S, Hartmann S, Barbagallo GMV, et al. Management of spinal infection: a review of the literature. Acta Neurochirurgica 2018;160:487–96.
[3] Magrassi L, Mussa M, Montalbetti A, et al. Primary spinal epidural abscesses not associated with pyogenic infectious spondylodiscitis: a new pathogenetic hypothesis. Front Surg. 2020;20. doi:10.3389/fsurg.2020.00020.
[4] Korovessis P, Repantis T, Iliopoulos P, Hadjipavlou A. Beneficial influence of titanium mesh cage on infection healing and spinal reconstruction in hematogenous septic spondylitis: a retrospective analysis of surgical outcome of twenty five consecutive cases and review of literature. Spine (Phila Pa 1976) 2008;33:E759–67.

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Received 20 September 2024
Revised 24 September 2024
Accepted 26 October 2024

FDA device/drug status: Not applicable.
Author disclosures: ***BK:*** Nothing to disclose. ***DM:*** Nothing to disclose. ***AND:*** Nothing to disclose.
DOI of original article: 10.1016/j.xnsj.2024.100572

https://doi.org/10.1016/j.xnsj.2024.100568
Received 20 September 2024; Received in revised form 24 September 2024; Accepted 26 October 2024
Available online 4 November 2024