Neurosurgical Forum

LETTERS TO THE EDITOR

Metastatic spine disease and outcome predictions

TO THE EDITOR: We read the article by Feghali et al.¹ with interest (Feghali J, Pennington Z, Ehresman J, et al. Predicting postoperative quality-of-life outcomes in patients with metastatic spine disease: who benefits? *J Neurosurg Spine*. 2021;34[3]:383–389). The title of the article states that the authors have discussed the existing validated measures of health-related quality of life (HRQOL) in patients with metastatic spine disease as well as the reported preoperative predictors of HRQOL outcomes following surgery.

Currently, the treatment of metastatic spine disease is rarely oncological and remains palliative; in addition, the median overall survival is less than 1 year. Indeed, metastatic spine disease often represents the terminal stage of the primary cancer. As previously studied, a chronological metastatic process has been described concerning the course of progression of cancer.^{2–4} After being debated, it is now established that surgical treatment does not play a role in improving survival, except in rare situations.⁵ Therefore, to date, maximal resections have been abandoned in favor of simple decompression and stabilization surgeries.

Ultimately, the majority of metastatic spine disease patients are operated on for emergency indications (compression or spinal instability) when no other management is possible. There is, therefore, a very limited use of HRQOL or other QOL questionnaires. Currently, even patients with poor survival (< 3–6 months) are operated on if their ambulatory status is threatened. It should be understood that in metastatic spine disease, the aim of surgery is to offer a few supplementary months of serenity regarding a patient's ambulatory condition or to relieve the pain, although sometimes only partially. Thus, we think that the scores predicting postoperative QOL outcomes in patients with metastatic spine disease can be contributory and useful in certain cancers with better survival rates, such as thyroid, kidney, or breast (*Her2* positive), but have only limited interest for other types with poor prognosis, including lung, prostate, and liver.

Thus, we presume that the majority of surgeons routinely use the WHO or Karnofsky Performance Status score to assess a patient's general condition, the Frankel score for the ambulatory prognosis, and the visual ana-

log scale score for pain but not QOL outcomes, which are often long to achieve and ultimately do not pose much interest for patients in a palliative stage. Thus, the question we could ask ourselves is, how may a patient's poor preoperative QOL questionnaire score lead to a change in our practice?

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Disclosures

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Response

We thank Amelot et al. for their insightful comments. The authors mention that surgery is often performed for emergency indications such as spinal cord compression

and that HRQOL prediction would have little impact on practice. Detailed analysis of patients who undergo surgical decompression for symptomatic spinal cord compression due to metastatic disease can reveal important findings worth considering. In a recent study by Lak et al., surgical decompression was performed in 151 patients with metastatic spinal cord compression.¹ The majority of patients (61%) had a relatively good preoperative grade on the American Spinal Injury Association Impairment Scale (grade D). QOL outcome analysis, as measured by the Eastern Cooperative Oncology Group Performance Status, revealed that 32% of patients experienced no improvement and 10% of patients experienced worsening with respect to their preoperative status.¹ This suggests that surgery might not achieve the intended outcome in a subset of cases.

Constructing predictive models for HRQOL can help identify this subset of patients and improve decision-making. Amelot et al. mentioned that HRQOL outcome scores are not very relevant for patients at the palliative stage. However, one of the main goals of palliative medicine is improving HRQOL, which is the main outcome of interest in major studies evaluating the efficacy of palliative measures.^{2,3} Given the tremendous heterogeneity and complexity encountered in patients with metastatic spine disease, predictive models can help determine which patients are likely to benefit from palliative surgical intervention, leading to more cost-effective care.⁴ It also provides patients with evidence-based expectations of what the surgery is likely to achieve, improving the informed consent process. Ultimately, we acknowledge that projected HRQOL outcomes only represent one of the outcomes relevant to decision-making. Other factors include survival, shared input from patients, and the best surgical approach in relation to the intended goal.

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Recurrent disc herniation and spinal instability

TO THE EDITOR: I read with interest the study by Brooks et al.,¹ which is attempting to analyze factors related to disc herniation that suggest segmental spinal instability even when there is no visible dislocation on the basis of defined radiological parameters or dynamic imaging (Brooks M, Dower A, Jalil MFA, Kohan S. Radiological predictors of recurrent lumbar disc herniation: a systematic review and meta-analysis. *J Neurosurg Spine*. 2021;34[3]:481–491). The authors have studied the association between the radiological parameters and recurrent lumbar disc herniation and have concluded that instability of the spinal segment has a role in the development of recurrence. They have identified that advanced degeneration likely reduces segmental motion and concurrently the risk of recurrence. They have discussed the parameters of reduction of disc space height, sagittal relative range of movements of vertebrae, and Modic endplate changes as indicators of spinal instability.

Several of my publications have identified the role of spinal instability in relationship to disc bulges leading to spinal canal stenosis and acute/chronic disc herniation for both cervical and lumbar spines.^{2–4} As the issues of disc herniation and instability are in discussion, the authors could have referenced our articles, particularly when there are no related articles in the literature.

We have identified that spinal instability is the cause of disc herniation or that disc herniation can result in spinal instability. Instability is also the cause of symptoms. This is suggested by the fact that the lumbar belt or cervical collar and movement restriction are the favored early forms of treatment. We have been so much convinced about the role of spinal instability in disc herniation that we have proposed “only spinal fixation” as the treatment for both degenerative canal stenosis and disc herniation.^{2–4} We have suggested “only fixation” for single- or multi-level spinal spondylosis leading to symptoms of radiculopathy and/or myelopathy. Our remarkably gratifying clinical outcomes in the case series reported by us are testimony for such a hypothesis.^{2–4} We have suggested the futility of the widely performed and universally agreed on surgical procedures of decompression by bone, ligament, osteophyte, and disc removal.

Our studies have identified that disc degeneration, “age-related” reduction in its “water content,” and the resultant reduction in disc height is not the primary point of pathogenesis of spinal degeneration.² Weakness of muscles that are involved in the standing human position results in “vertical” spinal instability that is initially manifested at the facets.^{2–4} Disc space reduction, osteophyte formation, liga-

mentous flavum hypertrophy, reduction in the spinal canal, and all the known pathological features of spinal degeneration are secondary features. Instability at the facets is difficult to diagnose because of its subtle nature and its lateral location away from neural structures. Earlier, we described facet distraction using intra-articular spacers as treatment for spinal degeneration. However, we now observe that spinal instability is the nodal point of pathogenesis of spinal degeneration, and spinal stabilization is the treatment.

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Response

No response was received from the authors of the original article.

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