



Letter to the Editor: Role of Transpedicular Percutaneous Vertebral Biopsy for Diagnosis of Pathology in Vertebral Compression Fractures

Surabhi Subramanian¹, Vibhu Krishnan Viswanathan²

¹Department of Radiology, Government Medical College, Nagpur, India

²Department of Clinical Spine, Ohio State University, Wexner Medical Center, Columbus, OH, USA

We read with interest the article “Role of transpedicular percutaneous vertebral biopsy for diagnosis of pathology in vertebral compression fractures” by Pagdal et al. [1]. The authors retrospectively evaluated the biopsy results of 84 patients with vertebral compression fractures. The use of biopsies in identifying occult malignancy was excellently described, and the article is an eye-opener for the readers. We have some questions for the authors.

1. Did the authors perform vertebral percutaneous biopsies for all the vertebral compression fractures at initial presentation or only when there was clinical or radiological suspicion of an underlying malignancy? This question is relevant because only one person in the entire series had an underlying unsuspected malignancy.

2. The authors have not mentioned performing additional cement augmentation in any of the patients. It would be interesting to know what proportion of these patients needed a cementoplasty or an additional stabilization. Allen et al. [2] has discussed the need for biopsy prior to any cement augmentation procedure in vertebral compression fractures. We would like to know the circumstances under which authors would consider biopsy in the absence of any additional interventions (e.g., vertebroplasty or instrumented stabilization) in compression

fractures.

3. Seven patients with a previous diagnosis of malignancy had histopathological evidence of a malignant vertebral lesion. However, literature indicates that one-third of patients with co-existing malignancies elsewhere, present with a benign osteoporotic fracture instead of a neoplastic vertebral lesion [3,4]. It would be interesting to know how many patients with known malignancies in the current series had benign vertebral lesions based on the histopathological diagnosis.

4. Was there any correlation between any of the imaging findings and biopsy results? Magnetic resonance imaging [3] is considered as an important diagnostic modality to differentiate between malignancies and osteoporotic fractures. Although water-line sign and sharp vertebral wedging favor osteoporotic fractures, a bulging contour of the posterior vertebral body wall, homogenous T1 hypointensity, epidural or paravertebral soft tissue masses, non-signal drop in out-of-phase sequence and restriction in diffusion-weighted imaging strongly favor malignancy. Did the authors observe a strong association between any of the MRI findings and presence of malignancies?

5. Literature quotes “osteitis” or inflammation as the histo-pathological finding in approximately 20% of

Received Nov 19, 2016; Accepted Nov 20, 2016

Corresponding author: Vibhu Krishnan Viswanathan

Clinical Spine, Department of Neurosurgery, Ohio State University, Wexner Medical Centre, 410 W, 10th Ave, Columbus, Ohio-43210, USA

Tel: +16143023859, E-mail: drvibu007@gmail.com

patients with osteoporotic fracture [2], possibly due to the increased inflammatory cells around the fracture healing site. We also have quite often observed chronic inflammation reported in such cases. Did the authors have any such reports in their series?

6. Since transpedicular biopsies may show inconclusive results in up to 10% of patients [2], would obtaining a biopsy from all patients in addition to clinicoradiological findings further reduce the yield of such a procedure? It would be enlightening if the authors can share the indications for biopsy in their patients, although we understand that it was a retrospective study.

The current article discusses a very relevant issue faced by most clinicians: the ambiguity in the diagnosis of vertebral compression fractures in elderly patients. It is indeed a commendable effort. We would really appreciate the comments of authors regarding our queries.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

References

1. Pagdal SS, Nadkarni S, Hardikar SM, Hardikar MS. Role of transpedicular percutaneous vertebral biopsy for diagnosis of pathology in vertebral compression fractures. *Asian Spine J* 2016;10:925-9.
2. Allen RT, Kum JB, Weidner N, Hulst JB, Garfin SR. Biopsy of osteoporotic vertebral compression fractures during kyphoplasty: unsuspected histologic findings of chronic osteitis without clinical evidence of osteomyelitis. *Spine* 2009;34:1486-91.
3. Hamimi A, Kassab F, Kazkaz G. Osteoporotic or malignant vertebral fracture? This is the question. What can we do about it? *Egyptian J Radiol Nucl Med* 2015;46:97-103.
4. Muijs SP, Akkermans PA, van Erkel AR, Dijkstra SD. The value of routinely performing a bone biopsy during percutaneous vertebroplasty in treatment of osteoporotic vertebral compression fractures. *Spine (Phila Pa 1976)* 2009;34:2395-9.