



Utility of Routine Biopsy at Vertebroplasty in the Management of Vertebral Compression Fractures – A
Tertiary Centre Experience

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Introduction

We aimed to assess the utility of routine biopsy at vertebroplasty for vertebral compression fracture (VCF), as a tool in the early detection of malignancy in presumed benign VCF.

Methods

A prospective observational study was conducted on a cohort of consecutive patients undergoing vertebroplasty over a 5-year period. Polymethylmethacrylate (PMMA) cement injection was used in every procedure. Intraoperative vertebral body biopsy was performed routinely at every level of VCF. Pain visual analogue scale (VAS) scores, Oswestry Disability Index (ODI) scores, and complications were recorded preoperatively and at 1 day, 1 week, 1 month, 6 months and 1 year postoperatively.

Results

Analysis of 184 routine vertebral biopsies in 135 patients revealed that in 86 patients with presumed osteoporosis and no prior cancer diagnosis, 4 (4.7%) had a malignant VCF. In 20 known cancer patients presumed to be in remission, 2 (10%) had a malignant VCF. Routine vertebral biopsy returned an overall cancer diagnosis rate of 5.5% (6/109) when combining the two groups (patients with no prior history of cancer or cancer thought to be in remission). In these 6 patients, history, examination, laboratory tests and pre-procedure imaging all failed to suggest malignancy diagnosed at routine biopsy. Significant reductions in pain VAS and ODI scores were evident at day 1 and sustained at up to 1 year postoperatively (p <. 0.001). They were not dependent on the level of fracture, number of levels treated or aetiology of VCF. The complication rate was 6%. There were 5 mortalities, none related to surgery.

Conclusions

Routine vertebral biopsy performed at vertebroplasty may demonstrate cancer-related VCFs in unsuspected patients with no previous cancer diagnosis, or active malignancy in patients previously thought to be in remission. This early diagnosis of cancer or relapsed disease will play an important role in expediting patients’ subsequent cancer management.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the rationale for intraoperative vertebral body biopsy during vertebroplasty for VCF, 2) Discuss the data in favour of vertebral body biopsy in the early detection of otherwise unsuspected malignancy

References

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