



Biopsy of Spinal Lesions: Advances with CT Guidance Review

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Objectives

- 1) Discuss the advancement of the CT guided biopsy of spinal lesions
- 2) Review the common indication for CT guided biopsies of the spine
- 3) Evaluate the literature
- 4) Discuss implications for Advanced Practice Providers

CT Guided Biopsy Advancements

- ❖ Robert & Ball first performed percutaneous biopsy of the spine in 1935
- ❖ Minimally invasive
- ❖ Safe
- ❖ Accurate
- ❖ Less complicated than open surgical method
- ❖ Open surgical method complication: risk of leakage and contamination to nearby organs and tissues
- ❖ Guided by needle using CT guidance

Indications

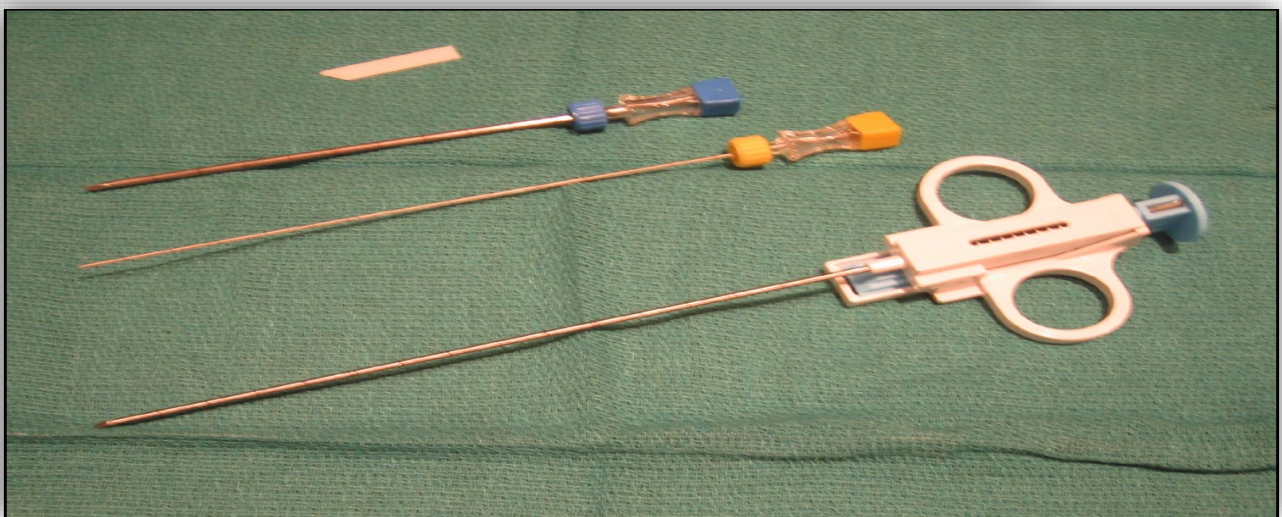
- ☐ Diagnosed primary tumor of spine
- ☐ Confirm or exclude metastasis tumor
- ☐ Diagnose infection: discitis or osteomyelitis
- ☐ Evaluate for tumor recurrence

Literature Review

- Katappuram et al.(1992) completed a retrospective review of 75 patients who underwent percutaneous spinal or paraspinal soft tissue biopsies from 1980-1987
- The study found a 69/75 accuracy based on needle biopsy and 96% accuracy based on diagnostic category. Metastatic disease had a highest diagnostic yield (96%) and benign, primary and fracture (82%)
- Females (97%) were found to have a better biopsy result than males (86%)
- Larger biopsy needle (97%) was found to yield a better result than a smaller needle (80%)
- Percutaneous need biopsy was found to be safe, accurate, inexpensive, quick, and reliable procedure of diagnosing a variety of spinal lesions (1991)

Preparing for a biopsy

Needles



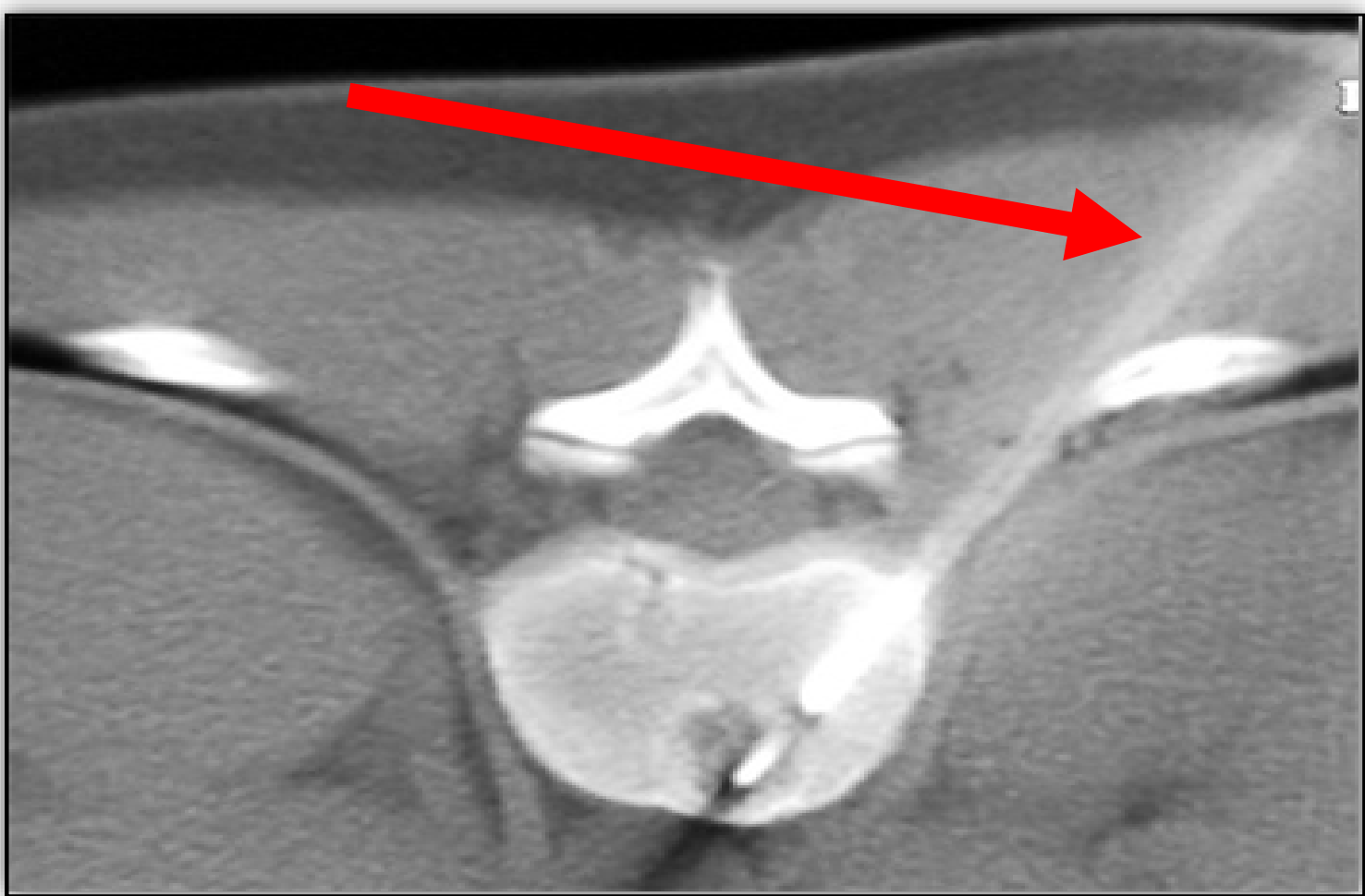
Imaging Techniques

Computed Tomography (CT)

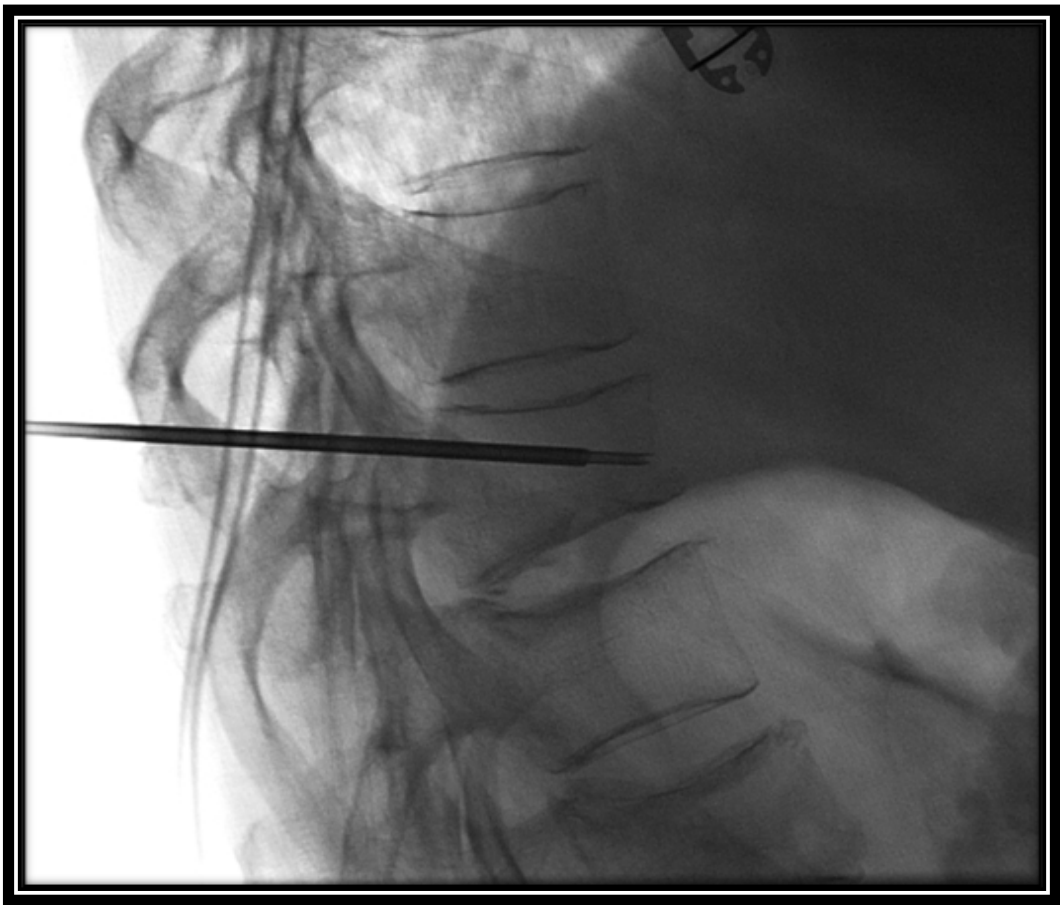


Vertebral Biopsy

- ✓ The key to a successful and safe vertebral biopsy includes:
- ✓ planning for appropriate technique
- ✓ positioning the patient for appropriate approach
- ✓ protection of vital neurovascular structures



Fluoroscopy



Implications for Advanced Practice Providers (APP)

- Advancement and expansion in the field of interventional radiology
- Opportunity for APPs to answer the call of this complex specialty
- Opportunities for APPs to evaluate and manage patients pre and post IR procedure
- APPs who are not directly employed in the IR department can also play a role by coordinating referrals and educating patients

References

- Crum, E. A., & Varma, M. K. (2019). Advanced practice professionals and an outpatient clinic: Improving longitudinal care in an interventional radiology practice. *Seminars in Interventional Radiology*, 36(1), 13–16. <https://doi.org/10.1055/s-0039-1683357>
- Kattapuram MD, S., Khurana MB, M. J., & Rosenthal MD, D. (1992). Percutaneous needle biopsy of the spine. *Spine*, 17(5), 562-564.
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