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
American Academy of Ambulatory Care Nursing Conference (AAACN)