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FACTORS EFFECTING CORE NEEDLE BIOPSY IN MUSCULOSKELETAL SYSTEM

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Introduction:

Delve into the intricate landscape of musculoskeletal lesion diagnostics as we examine the influencing factors of core needle biopsy.

Objectives:

This study investigates variables that impact the accuracy and efficacy of this diagnostic procedure, offering valuable insights for clinicians and researchers in the field of orthopedic and musculoskeletal medicine.

Methodology:

Patients who had undergone percutaneous core needle biopsy of musculoskeletal lesions were included in the study. Lack or pre-procedure imaging and records on PACS and loss to follow up were the exclusion critera.

A total of 180 patients who had undergone percutaneous needle biopsy for musculoskeletal lesions were included in the study, and a total of 209 biopsy procedure performed.

Results:

A total of 209 consecutive core needle biopsy of the musculoskeletal system were performed on 180 patients (64 females and 116 males).

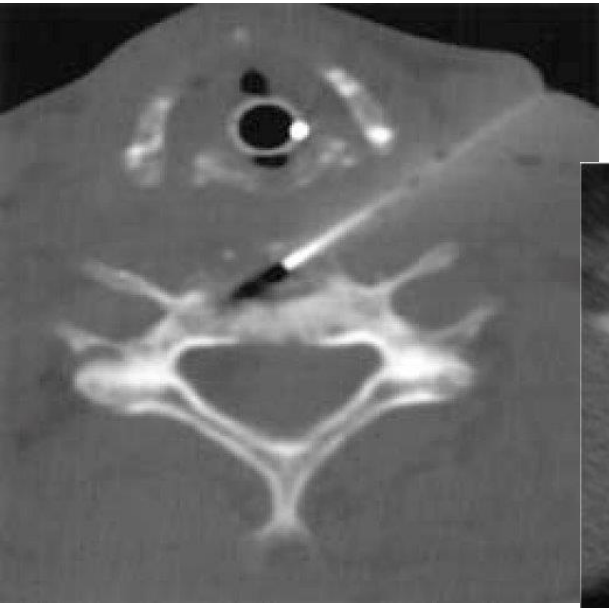
There were 75 (41.7%) patients with lytic lesion in the bone, 31(17.2%) patients with lytic with soft tissue component, 14(7.8%) patients with sclerotic lesions and 40(22.2%) patients with mixed lytic and sclerotic lesions and 20 with only soft tissue (11.1%).

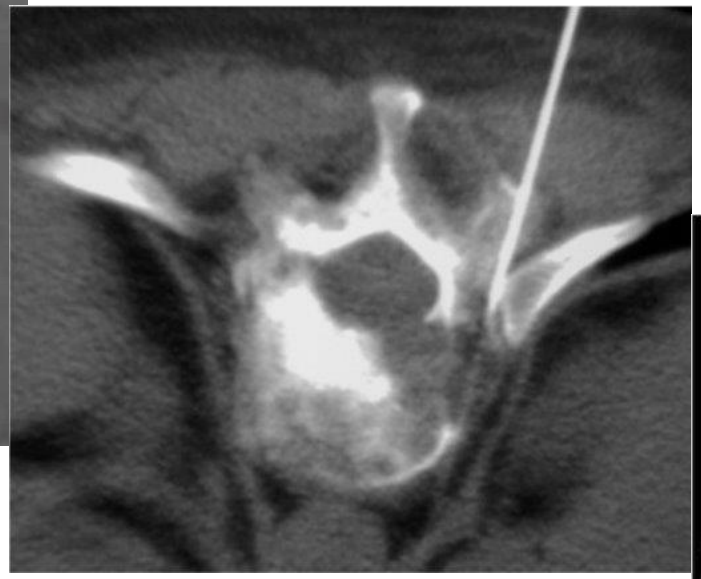
Lytic lesions had diagnostic accuracy of 97.3% (73/75), lytic with soft tissue had 96.8% (30/31) while that of mixed lesions was 75% (30/40) and sclerotic lesions was 57.1% (8/14). This was statically significant with p value of 0.001.

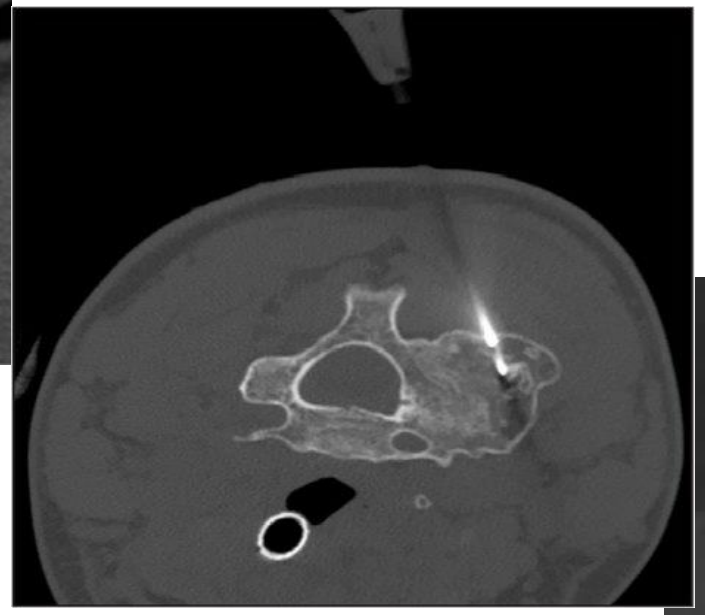
The diagnostic accuracy of the biopsy according to the lesion size was 100% (7/7) for lesions < 10 mm, 85.4% (41/48) for 10-25 mm lesions, 88.6% (78/88) for 25-50 mm lesions and 94.6% (35/37) for larger than 50 mm lesions. This was not statically significant with p=0.2.

The diagnostic accuracy in respect to needle size was as follows: 11G had 82.1% (55/67), 13 G had 100% (2/2), 18G had 93.9% (93/99), 11+18G had 90.9% (10/11) and 13+18G had 100% (1/1).

Representative images:







Conclusion:

The current study shows that CT guided percutaneous biopsy of musculoskeletal lesions is a safe, easy and effective outpatient procedure. The diagnostic yield correlated with the type of lesion (lytic vs sclerotic) whereas size of lesion and size of needle used did not significantly affect the outcome. Lower success was noted in the benign or inflammatory disease and also with vertebral lesions.

References:

The diagnostic value of needle biopsy for musculoskeletal lesions
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The tactics and technique of musculoskeletal biopsy
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Image Guided Core Needle Biopsy of Musculoskeletal Lesions: Are Nondiagnostic Results Clinically Useful?
Manjiri M Didolkar , Megan E Anderson , Mary G Hochman , Julia G Rissmiller , Jeffrey D Goldsmith , Mark G Gebhardt , Jim S Wu

Factors affecting the success of CT-guided core biopsy of musculoskeletal lesions with a 13-G needle
Khaldun Ghali Gataa, Fatih Inci, Pawel Szaro & Mats Geijer