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The Revisited Role of Ultrasound Guided Core Needle Biopsy in the Breast Cancer Diagnosis

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Abstract
Background: Core needle biopsy (CNB) is an alternative to surgical biopsy in establishing the histopathological diagnosis of mammary lesions.
Aim of the study: The aim is to determine the accuracy of ultrasound guided CNB (US-CNB) in establishing breast cancer diagnosis.
Materials and methods: We retrospectively analyzed the data of US-CNB patients between May 2012 – December 2014. One hundred sixty-three biopsies were performed in 155 patients. To assess the diagnostic accuracy of US-CNB, the results were correlated with the gold-standard of surgical excision of the breast lesions, thus, 90 patients (94 breast lesions) were included in the study group. We calculated the concordance of the results using the Kappa Coefficient, sensitivity and specificity using the ROC curve and the false-negative rate.
Results: US-CNB identified 74 (79%) malignant lesions, 1 (1%) precursor high-risk lesion, and 19 (20%) benign lesions. Concordance between histopathological results was 96.8% (kappa: 0.91). The 94.2% (kappa: 0.80) consensus of the histological type could be calculated for 70 invasive carcinomas. The 61.8% (kappa: 0.41) concordance of the histological grade could be calculated for 55 invasive carcinomas. Sensitivity and specificity were 98.6%, and 100%, respectively. The false-negative rate was 1.3%.
Conclusions: US-CNB is an excellent alternative to surgical biopsy in establishing the histo-pathological diagnosis of breast lesions, provided it is performed by a specialized team and there is clinical-radiological-histopathological concordance in all cases.
Key words: ultrasound guided core needle biopsy, sensibility, specificity, breast cancer