Elevated Shear Wave Elastography Values as a New Malignancy Criteria Despite Normal Biopsy Results

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Figure 1: a) On USG image; retroareolar located intraductal solid lesion is seen; b) On SWE: Mean value of normal tissue 2.15 m/s; c) 13.9 kPa is measured in normal breast parenchyma; d) On elastographic assessment of intraductal solid lesion; mean quantitative values have revealed as 5.38 m/s; e) 80.8 kPa.
Introduction

Shear Wave Elastography (SWE) is a recently developed technique that enables detailed information on characterization of breast lesions. We reported a case that is elastography findings of breast lesion which is high grade DCIS focus within papilloma in 58-year-old female whose tru-cut biopsy has formerly resulted as benign.

Case

A 58-year-old female presented to our outpatient clinic complaining of pain with a palpable retroareolar mass on 27 × 20 × 25 and microcalcifications also were seen on mammography. Tru-cut biopsy resulted as intraductal papilloma. We draw the contour of lesion manually with free ROI which is provided by Toshiba Applio 500. On SWE; while mean value of normal tissue obtained from four quadrants 2.15 m/sn and 13.9 kPa, it was 5.38 m/sn and 80.8 kPa for retroareolar solid lesion (Figure 1). According to the literature this was highly significant for malignancy or aggressive subtype of Ductal Carcinoma In Situ (DCIS). Surgically removed lesion diagnosed as cribriform pattern DCIS focus within papilloma.

Discussion

SWE provide quantitative measurement of tissue stiffness in kilopascals and m/sn can be integrated into a routine breast ultrasound examinations. Recent studies reported that SWE can contribute to differentiate solid malignant breast masses from benign using their mean stiffness values [1]. In our case, elastographic measurements were significantly higher, supporting malignancy despite benign pathology result. Barr, et al. found that integration of qualitative and quantitative elastography measurements into BI-RADS system can facilitate accurate diagnosis [2]. Chang, et al. also revealed that tumour stiffness evaluated by SWE correlates with aggressive subtypes of breast cancer that invasive cancers with aggressive prognostic features [3]. In our case high grade focus within lesion were pathologically confirmed.

Conclusion

SWE can reduce unnecessary procedures by improving the selection of patients more appropriate for biopsy or surgery.

References