ROLE OF ELASTOGRAPHY IN DIAGNOSTIC OF APPARENT BENIGN BREAST TUMOR LESIONS

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Objectives: Sonoelastography is a noninvasive, real time procedure, complementary diagnostic method that increases the diagnostic qualities of conventional ductal ultrasound. We want to evaluate the added diagnostic value of sonoelastography in cases of apparent benign lesions in conventional ultrasound.

Method: Prospective study: 875 women, under 45 years of age, mean age 36.5± 5.4 7 years, who came in in our Ultrasound Unit for a breast evaluation. Recruitment period: January 2011-December 2012. Ductal breast ultrasound and elastography was performed with a HITACHI EUB 7500 HV machine, with 6-13 MHz variable frequency linear probe, with water bag, Hitachi Medical System Tokyo, Japan. Ueno score and also strain ratio were measured for all described lesions. All cases with ACR 4 evaluation were operated. Extemporaneous and postsurgical histopathological exam was performed in all cases. Some ACR 3 lesions were also referred to the surgeons because of cosmetic, pre-pregnancy, need of hormonal contraception use reasons.

Results: From the total of 875 cases, we diagnosed 246 solid tumors, of which 113 cases had typical characteristics in conventional and Doppler ultrasound of fibroadenoma. When we performed elastography we observed in 21/113 nodules a very low elasticity, described as 4 Ueno score (12/21), respectively very low elasticity: Ueno score 5 (9/21). All other fibroadenoma apparent lesions had high elasticity: Ueno score 1 (31/92), 2 (42/92), and 3 (19/92). Despite the surgical indication of all 21 suspicious cases, surgery was performed only in 18 cases. From the 92 unsuspicious cases, 31 were operated, from safety, cosmetic, emotional balance reasons. Breast cancer was diagnosed in one of the unsuspicious 31 operated cases, respectively 16 out of the 18 operated suspicious cases. The specificity of real time elastography was 93.75%, with a sensitivity of 94.11%, PPV= 0.888, NPV =0.967. There were no differences in positions - TDLU level, maximum nodule diameter 1.8±0.4 ml vs 1.6±0.4 ml, vascularization or omogenicity.

Results: Without sonoelastography, an important number of cases would not be diagnosed as cancer.