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Review Article

DUCTAL ORIENTED DOPPLER SONOELASTOGRAPHY – THE ALTERNATIVE OF CHOICE TO DRAW THE BENIGN VERSUS MALIGNANT FRONTIER IN BREAST DISEASES

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Abstract

The trial is aiming to asses *Ductal Oriented Breast SonoElatography* (DODSE) compared to mammography and to the pathological reference, hoping to reduce furtherly the number of breast biopsies. For some unclear breast lesions defined as BI-RADS 3 or 4, DODSE could stand for referee, as well as MRI or biopsy. Between 2008-2011 we evaluated 1758 patients by sonography; 232 patients were found to have unclear nature lesions and submitted to digital fullfield mammography, elastography and pathological examination. Considering the pathological report, 207 of the 232 (89.22%) were conclusively redefined as benign or malignant, but only 179 (77.15%) by digital mammography. Considering the whole trial, with 1526 patients cathegorically classified by ultrasonography and the aditional 207 patients conclusively classified by sonoelastography, in 98.57% of patients the DODSE evaluation proved to be correct. This included 8 of our 11 cases of DCIS in our trial.

Key-words: *Ductal Oriented Breast SonoElatography (DODSE), mammography, breast biopsies, unclear breast lesions*

Rezumat

Studiul îi propune să evalueze *SonoElastografia Doppler Ductal-Orientată* (SEDDO) comparativ cu mamografia sub arbitrajul anatomiei patologice, în speranţa de a reduce în viitor numărul biopsiilor mamare inutile. Pentru unele dintre leziunile mamare incerte,

definite ca BI-RADS 3 sau 4, SEDDO poate fi discriminatorie, la fel ca RMN sau biopsia. Între 2008 i 2011 am evaluat 1758 paciente prin ecografie; 232 paciente au prezentat leziuni de natură neclară i au fost examinate prin mamografie digitală, elastografie i biopsie. În urma rapoartelor anatomo-patologice a rezultat că 207 (89,22%) din cele 232 paciente au fost corect clasificate ca leziuni benigne sau maligne de către SEDDO, în timp ce numai 179 (77,15%) dintre ele au fost categorisite corect de către mamografia digitală. Având în vedere întregul lot, cu 1526 de paciente clasificate fără echivoc de către ecografie i cele încă 207 paciente cu leziuni clarificate în urma sonoelastografiei, SEDDO s-a dovedit exactă la 98,57% dintre paciente, inclusiv în 8 din cele 11 cazuri de carcinom ductal in situ din lot.

Cuvinte cheie: *SonoElastografia Doppler Ductal-Orientată (SEDDO), mamografia, biopsiilor mamare, leziunile mamare incerte*

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Introduction

The border between fibro-cystic disease and (micro-)invasive carcinoma is crossing-over the dysplasias with epithelial proliferation (either typical or atypical) as well as carcinomas in situ of all grades (low, mild or high).

The lesions defining the benign-malignant frontier are endo-cystic proliferation, severe or atypical dysplasia, plasma cell mastitis, borderline tumors (such as Phyllodes tumor) or even in situ carcinomas (DCIS, LCIS). Geographically, the border may be designed by the intraductal disemination, the presence of multiple neoplasic foci or lymphatic difusion nodules (1, 2).

But who is drawing the benign versus malignant (B/M) frontier? These won't be the patients, ranging from indolence to cancerofobia, nor the practitioners, often confused by misjudgments and physical exam's limitations. But they may be the explorers (radiologists or ultrasonographists) assessing the lesions by the BI-RADS. The no man's land will be a bit confusingly stated by the scores of 3 (meaning that the lesion is very probably benign, but asking, however, a close follow up) or 4 (meaning that lesion's nature is not clear and requiring breast biopsy). The only ones to be sure about B/M discrimination are the pathologists, but they need a breast biopsy for this purpose.

Concerning which images shall we trust and how much it is to be said that digital mammography has 30% false negative and 10% false positive results and can suggest a borderline lesion showing areas of microcalcifications, poorly defined dense lesions or architectural distorsions. Better data are offered by the *ductal oreinted Doppler sonoelastography* (DODSE), defined by 10% false positive and 5% false negative results, revealing evidence of epithelial proliferation, slightly irregular shape, blurred limits, posterior shadowing, ductal