

order to know the actual role of this procedure in diagnosis and treatment of non palpable breast lesions.

Material and Methods: We retrospectively analysed 745 consecutive MWGB (years 2003–2008) at the Gynaecology Department of the University Hospital "12 de Octubre" in Madrid.

Results: 18.5% of MWGB had previous core biopsy diagnosis, 81.5% had diagnostic intention (without previous core-biopsy), 2.4% confirmation of previous stereotactic diagnosis (8.7% benign, 8.7% atypical hyperplasia (AH), 1.4% in situ lobular carcinoma (ISLC)) and 16.1% excised carcinomas previously diagnosed by previous core biopsy.

39.5% of MWGB were invasive carcinomas, 13.6% in situ ductal carcinomas (ISDC), 1.2% microinvasive carcinomas, 2.3% ISLC, 7.5% AH and 35.6% had benign histology.

Of our MWGB we had 44.6% during years 2003–2004, 33.3% in 2005–2006 and 26.1% in 2007–2008 of benign results ($p=0.0001$). Inversely, diagnosis of malignancy increased (benign lesions not excised with MWGB after diagnostic core biopsy): 2003–2004: 44.6%, 2005–2006: 54.6%, 2007–2008: 65.9%.

Without previous core biopsy in carcinomas (ISDC or invasive carcinomas) we found 51.9% affected margins, with previous core biopsy 19.5% ($p=0.0001$). In 2003–2004 (no core biopsies yet) 53.6% of margins in carcinomas were affected; in 2005–2006 (beginning of core biopsies) 51.7%, and in 2007–2008 (progressive implantation of core biopsies) 28.8% ($p=0.001$). Because of this, we amplified on 66.4% of biopsies had to be re-excised in 2003–2004, 58.35% in 2005–2006, and only 32.7% in 2007–2008 ($p=0.0001$).

Conclusions: MWGB is an efficient management of non palpable breast lesions preferably after histological confirmation of malignant or premalignant breast disease. During last years diagnosis of non palpable lesions has been optimized. Core biopsies has permitted the avoidance of unnecessary surgeries (benign histologies) and the necessity of re-excisions for affected margins or planning a second surgery for sentinel node in case of invasive carcinomas.

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Poster

Comparisons between core needle biopsy and definite surgery in estrogen receptor, progesterone receptor and human epidermal growth factor receptor 2 expressions in breast carcinoma

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Background: To evaluate immunohistochemical detection of estrogen receptor (ER), progesterone receptors (PR) and human epidermal growth factor receptor 2 (HER2) expressions in core needle biopsy and definite surgery in breast carcinoma

Material and Methods: This series is a retrospective review of 310 invasive breast cancer patients who have received core needle biopsy and definite surgery at Chnaghua Christian Hospital between January 2006 and October 2007. We compare immunohistochemical detection of ER, PR and HER2 expressions in breast carcinoma using formalin fixed resection tissue. ER, PR and HER2 expressions were scored 0, 1+, 2+, and 3+ by immunohistochemical detection. The consistency of core needle biopsy and definite surgery were compared by stratifying pathology results with the Wilcoxon Signed Ranks test.

Results: The nonparametric test (2-tailed) for comparison of core needle biopsy and definite surgery in ER, PR and HER2 expressions showed no statistically difference ($p=0.572, 0.246, 0.198$). However, discrepancies of core needle biopsy and definite surgery in ER expression 0, 1+, 3+, PR expression 0, 1+, 2+, 3+ and HER2 expression 0, 2+, 3+ were shown in stratifying pathology results by the Wilcoxon Signed Ranks test ($p<0.001$). HER2 expression 1+ and ER expression 2+ in core needle biopsy is consistent to definite surgery ($p=0.994, 0.808$ respectively).

Conclusions: Immunohistochemical detection of estrogen receptor (ER), progesterone receptors (PR) and human epidermal growth factor receptor 2 (HER2) expressions in core needle biopsy is not strongly concordant with definite surgery in breast carcinoma.

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Poster

Safety and accuracy of MR-guided vacuum biopsy of breast lesions visible by breast MRI alone

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Background: To investigate the diagnostic accuracy and safety of MR-guided vacuum biopsy in routine clinical practice.

Material and Methods: Over a 3-year-period (07–2006 through 07–2009) MR-guided vacuum assisted biopsy (VAB) was performed according to a standardized clinical protocol. The interventions were done on a 1.5 T closed bore magnet using an ATEC-system (Suros) with 9G needles. Validation of VAB results of each lesion was obtained by a careful radiological-pathological correlation; in addition, VAB histology results categorized as B3–5 underwent subsequent surgical resection, and VAB results categorized as B2 underwent follow-up MRI after 6 months. In cases of uncertain radiological-pathological concordance control MRI was done within one week after VAB. All patients were followed clinically to document local complications.

Results: 491 MR-guided vacuum biopsies were performed in 321 patients, with 170 women undergoing VAB of more than one target lesion uni- or bilaterally within one session. Age range of patients was 30–77 years (mean 53 ± 11). VAB histology was malignant in 185/491 (38%) cases: 55/185 invasive cancers (29.7%), 93/185 pure DCIS (50.3%), 33/185 both invasive cancer and DCIS (17.8%) and 4/185 LCIS (2.2%). In 307/491 cases (62%) benign changes were found including radial scar and ADH. Average size of target lesion was 10.4 mm with a minimal size of 3 mm. Over the entire study no false-negative VAB results were observed, i.e. no malignant lesion identified at follow up after benign VAB. In patients undergoing surgical biopsy or treatment after MR-guided VAB, the final surgical pathology result was concordant with the VAB histology in all cases. One patient (0.3%) developed a hematoma requiring surgical evacuation, no other serious adverse events were observed.

Conclusions: MR-guided VAB is an extremely accurate and safe method to biopsy even very small breast lesions visible by MRI alone. The accuracy and reliability of target tissue sampling offered by MR-guided VAB appears to be higher than that achieved by MR-guided needle localization and surgical biopsy. Accordingly, MR-guided VAB can safely replace open biopsy, thereby avoiding unnecessary surgery. This is especially important for women in BIRADS 6 situation, who require histological verification of additional lesions identified at pre-operative MRI.

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Poster

New approach for histological diagnosis of additional breast lesions using ultrasound with magnetic resonance volume navigation and fusion imaging as reference: initial results

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Background: High percentage of benignancy of incidental and additional lesions at breast magnetic resonance (MR) guided biopsy are widely reported as well as low cost-effectiveness compared to ultrasound guided (US). Second look US seems to solve this clinical problem only in one-third of cases. Nowadays is possible to use MR volume for navigation and fusion during US exam (VNav). Purpose of this study was to evaluate this new approach to obtain lesion correlation and histology.

Materials and Methods: Fifteen consecutive patients (53 ± 14 years, range 35–75) with additional only MR-detected lesions underwent bilateral contrast-enhanced breast MR in supine position using flexible surface body coil. Three vitamin E pills and the corresponding drawing pen signs were used as skin reference for final alignment. Breast US and MR co-registration was manually obtained and maintained by means of a dual electromagnetic systems consisting of a magnetic transmitter positioned close to the patient and two small magnetic receivers positioned on a linear probe's bracket. Large core US guided biopsy with VNav was used for lesion sampling and carbon clip positioning. Clip-to-lesion distance at surgical pathologic examination was used as standard of reference.

Results: All twenty-two additional lesions had a correlation during US with VNav. No additional MR-guided biopsy was needed. At pathologic examination clip position distance from the lesion was reported 0.7 ± 0.4 cm (mean \pm SD). Seventy-three percent of lesions (16/22) were malignant and 26% (6/22) were benign. Three out of 6 benign lesions were classified as high-risk lesions.

Conclusions: Breast US guided biopsy with VNav for only MR-detected lesions is feasible and seems to allow an accurate tool for sampling breast lesions with a strong reduction of MR guided procedures.

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Poster

A prospective study of breast trauma presenting to a rapid-access clinic

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Background: Approximately 1% of all patients present to our rapid-access breast clinic with a history of trauma and a palpable lump. The aim of this study was to determine the frequency with which the lump was directly related to trauma or was an incidental finding by the patients examining themselves post-injury.