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Vacuum-assisted breast biopsy under ultrasound guidance: multicentre, prospective registry of 1016 cases

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Objective: The objective was to assess, under actual practical conditions, the feasibility of vacuum-assisted breast biopsy under ultrasound guidance (US-VAB), and the benefit in terms of the number of immediate surgeries avoided.

Materials and Methods: It is a non-randomised, multicenter prospective, longitudinal observational study. Between June 2006 and 2008, more than 1000 US-VAB were included, by 26 radiologists operating in different facilities, with various levels of experience in terms of procedures.

Data were collected concerning: the operators, the patients, characteristics of the lesions, the procedures, complications and tolerance, histological results of US-VAB and surgeries, 6-months follow-up and the impact of the US-VAB.

The efficiency was evaluated by the number of surgeries avoided.

Results: Before the US-VAB, patients had a fine needle aspiration (7%) or a core needle biopsy (38%). US-VAB were carried out for diagnostic purpose (63%): because of radiological discordance, technical reason or diagnostic strategy; or for excising a probably benign lesion (37%). US-VAB results yielded: benign lesions (72%), lesions of uncertain potential (10%), carcinoma (18%). Surgery was recommended for 252 cases.

There was a very good correlation between US-VAB and surgery. Out of the 1016 cases included, the US-VAB spared 829 unnecessary surgeries (81.8%).

Conclusion: This registry concerning 1016 procedures objectively reflects the practices of US-VAB operators in different professional settings and illustrates the contribution of the technique to the overall management of patients.

It shows the possibility for an operator with very little experience to practice this technique effectively subject to respecting precise rules in the choice of indications, the efficiency of the procedure and the final validation of the management of the patient.

US-VAB does not compete with US-CNB; it is an additional tool in the management of patients with breast disease and enables some unnecessary surgeries to be avoided. Its technique is reliable, its indications are acknowledged, the procedure can be easily implemented and is well tolerated.

The benefit is major when the patients are selected and spares a large number of unnecessary surgical procedures.

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Comparison of clinicopathologic characteristics between breast cancer patients above and under age of 40

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Breast cancer is the most common cancer all around the world. Although the common age for this cancer is above 50, but there are many patients that are involved under 40. It seems that there are some differences between breast cancer in young age and old age. Finding similarities and differences between young breast cancer patients and older patients may help to determine the pathophysiology of this cancer and determine more effective treatment for different age groups. In this study we tried to compare some characteristics of 2 age groups of breast cancer patients under age 40; and 40 or above.

Material and Methods: 374 patients age 40 or under 40 compared with 806 patients above 40. Data about clinical characteristics such as main complaint at presentation, side and site of breast cancer, family history of breast cancer in first and second degree relatives, history of oral contraceptive use; histological characteristics such as: size and type of tumor, estrogen and progesterone receptor status, her 2 over expression, p53, vascular, lymphatic and perinoural invasion, tumor grade, number of involved lymph nodes extracted from medical record of patients and compared.

Results: in clinical characteristics, there was no significant difference between two groups except that more patients in >40 year group had skin

symptoms (4.8 vs 0.8). In pathologic characteristics, Lobular carcinoma insitue was significantly higher in <40 years group (5.1 vs 2.1). 56% of our patients in both groups had at least one involved lymph node and about 10% in both groups had 10 or more involved lymph nodes. Estrogen receptor was positive in 35% of <40 year age group and 33% of >40 year age group and progesterone receptor positivity was also a little more in <40 year age group (39% vs 38%) and HER2 over expression was determined in 42% of <40 year age group and 35.4% of >40 year age groups. In characteristics that we found non significant differences, we can do another study with more patients in each group.

Conclusion: There are some differences in clinicopathological characteristics between patients younger than 40 and older than this, also there are some differences between patients in different nationalities and races, so more studies should be conducted with a larger number of patients that can determine differences accurately and help us to increase our knowledge about diagnosis and treatment of patients in different age and ethnic groups.

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Bloody nipple discharge – simple ultrasound guided duct papilloma excision

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Background: Bloody nipple discharge accounts for <5% of breast cancer symptoms at presentation in the absence of a palpable lump. Most of these bloody nipple discharge are due to intraductal papillomas which also predispose to malignancy. We have a technique of accurately cannulating the affected duct and excising it with help of ultrasound guidance.

Methods: Patients presenting with bloody or pathological nipple discharge in the absence of palpable lump were evaluated with ultrasound of both breasts and mammogram in indicated patients. Those with visible precancerous mammographic findings were excluded and worked up appropriately. Patients with only nipple discharge with sonographic features of intraductal lesions were included. Under ultrasound guidance and with magnifying lens or operating loops the ducts were cannulated with fine 4-0 or 5-0 prolene suture material and their intraductal position is confirmed with high frequency ultrasound. The ductal orifice in patients that are wide open are also injected with vital blue for intraoperative mapping. The cannulated pathological ductal lesion were excised under anesthesia and confirmed with ultrasound on the specimen.

Results: In last 24 months, there were 16 patients who presented with pathological nipple discharge. 4 patients had Mammographic features of early carcinoma. 12 were found to have nipple discharge with corresponding dilated duct and absence of Mammographic abnormalities. These patients underwent ultrasound guided cannulation of the pathological duct and excision biopsy as described above. 8 of them found to have only intra ductal papillomas, 3 found to have papillomas with DCIS features and 1 had an early invasive cancer.

Conclusion: This is a simple and cost effective technique of finding the pathological duct causing the nipple discharge and excision of the duct precisely causing the pathology.

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Objective cosmetic analysis after breast surgery with the breast analysing tool (BAT) correlates with subjective scores: improved tool for clinical trials

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Introduction: Objective cosmetic analyses are important to reproducibly evaluate the cosmetic outcome after breast surgery and radiotherapy. So far, only subjective irreproducible scores have been used such as the Harris scale. We have developed an objective tool to reproducibly analyse digital pictures, the "breast analysing tool" (BAT). The aim of this study was to compare subjective with objective breast cosmesis scores.

Materials and Methods: Digital pictures (frontal view) from 129 breast cancer patients (60 from Porto and 69 from Vienna) after breast conserving therapy and radiotherapy were analyzed with the above described software. All calculations were transferred to a breast symmetry index (BSI) ranging between 0 (excellent cosmesis) and 11 (bad cosmesis). The same pictures were analyzed by 10 experts (surgeons) and 8 non-experts (students) using the Harris scale (subjective score from 1-4; excellent, good, fair and poor cosmesis). These subjective scores were correlated with the objective scores from the BAT software using the Pearson correlation test.

Results: All subjective scores significantly ($p < 0.05$) correlated with the BAT score with a Pearson correlation coefficient of 0.716 (non-experts), 0.697 (experts) and 0.719 (overall).