600   Poster

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

C. Labbe-Devilliers[1], C. Tourasse[2], V. Vetsmany[3], P. Sebag[4], P. Lebas[5]. [1]Centre R. Gauducheau, Radiology, Nantes Saint Herblain, France; [2]C. L.Mermoz, Radiology, Lyon, France; [3]Ethicon Endo Surgery, Breast Care, Issy Les Moulineaux, France; [4]Radiology Center, Radiology Center, Nice, France; [5]Hospital Center, Radiology, Orleans, France

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 efficency 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.

601   Poster

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

N. Alavishahreza[1], N. Mehrdad[2], A. Olfatbakhsh[3], M. Najafi[3], E. Hashemi[3], S. Najanajafi[4], M. Ebrahimi[2], A. Sadjadian[2]. [1]Academic Center For Education Culture And Research, Breast Surgery, Tehran, Iran; [2]Academic Center For Education Culture And Research, Breast Cancer Research, Tehran, Iran; [3]Academic Center For Education Culture And Research, Surgery, Tehran, Iran; [4]Academic Center For Education Culture And Research, Medical Oncology, Tehran, Iran

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 under40 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.

602   Poster

Bloody nipple discharge − simple ultrasound guided duct papilloma excision

S. Thiruvengadathan[1], P. Rajkumar[2], T.S. Swaminathan[1]. [1]Dr. Kamahsi memorial Hospital, Radiological sciences, Chennai, India; [2]Dr. Kamahsi memorial Hospital, Surgical oncology, Chennai, India

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 sonografic 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.

603   Poster

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

W. Krois[1], T. Wild[1], F. Fitzal[1]. [1]Medical University Vienna, General Surgery, Vienna, Austria

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 reproducible 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).

Conclusion: The technical modifications of the BAT-software have lead to the achievement of accurate and reliable results. This qualifies the use of BAT in prospective and retrospective trials on breast cosmesis.

604   Poster
The additional value of whole-breast ultrasonography in the evaluation of women with mammography-negative dense breast

M. Najafi[1], E. Hashemi[1], A. Kaviani[2], T. Beheshtian[3], N. Alavi[4], L. Fonooni[3], N. Sedighi[5], S.H. Haghighat[6], A. Olfatbakhsh[1]. [1]Iranian Center for Breast Cancer, Surgery, Tehran, Iran; [2]Tehran University of Medical Sciences, Surgery, Tehran, Iran; [3]Iranian Center for Breast Cancer, Radiology, Tehran, Iran; [4]Iranian Center for Breast Cancer, Surgery, Tehran, Iran; [5]Tehran University of Medical Sciences, Radiology, Tehran, Iran; [6]Iranian Center for Breast Cancer, Research center, Tehran, Iran

Background: Mammography is the standard method of breast cancer screening but increased breast density reduces the sensitivity of both diagnostic and screening mammography. In the present study, the clinical utility of bilateral whole-breast ultrasonography as an adjunct examination to mammography in asymptomatic women with dense (Breast Imaging Reporting and Data System [BI-RADS] density category 2−4) breast tissue was examined.

Materials and Methods: Between January 2006 and January 2008, 592 asymptomatic women with normal mammography and physical examination and dense breasts (density grade 2−4) on mammography were evaluated with breast ultrasonography by three expert radiologists in a referral breast center. The findings of ultrasound were recorded by the radiologist in a separate sheet. According to ultrasound findings; the patients were offered routine follow up, repeat ultrasound in 6 months or biopsy.

Results: The mean age of the study population was 42.3±5.7. Positive family history for breast cancer was found in 16.6% of the patients. Ultrasound was normal in 57.5% of patients. Simple cyst or duct ectasia were diagnosed in 12.6% of patients and no further intervention was performed in this group. In 11 patients ultrasound found a suspicious or indeterminate lesion. Biopsy was performed for this group of patients according to ultrasound finding but no malignancy found on pathology report of the lesions. In 29.9% of patients complex cyst or benign appearing mass lesions were diagnosed on ultrasound. In repeat sonography, the lesions were either disappeared or not changed. No cancer was detected in the study population.

Conclusions: The findings of the present study do not support the routine use of ultrasonography in women with normal physical examination and mammography-negative dense breast. More studies in special high risk subgroups are recommended.

605   Poster
Thin slice multidetector-row computed tomography for the preoperative evaluation of axillary nodal status in patients with breast cancer

M. Shiotani[1], T. Higuchi[1], N. Takahashi[1], S. Sato[1], H. Makino[2], K. Kuninaka[2], C. Yoshida[2], H. Shibuya[3], H. Hashidate[3]. [1]Niigata City General Hospital, Diagnostic Radiology, Niigata, Japan; [2]Niigata City General Hospital, Breast Oncology, Niigata, Japan; [3]Niigata City General Hospital, Pathology, Niigata, Japan

Background: Sentinel lymph node biopsy (SLNB) is now widely accepted in breast cancer treatment, and being spared from complete axillary lymph node dissection (ALND). The role of a non-invasive imaging modality to assist in the preoperative diagnosis of axillary lymph nodal status (ALNS) has become very important. Multidetector-row Computed Tomography (MDCT) is one of the most useful methods of evaluating the clinical state of patients with breast cancer, and its high spatial resolution can offer an accurate diagnosis of distal metastasis. We retrospectively evaluated the effectiveness of thin slice MDCT for detecting ALNS in patients with breast cancer.

Material and Methods: Between November 2007 and October 2009, 246 patients with breast cancer enrolled in this study. We obtained CT images with a slice thickness of both 5 mm and 2 mm, by using helical CT scanning. A metastatic lymph node on MDCT was defined as more than 5 mm on the short axis and extinguishing fatty infiltration in hilum of lymph node. We estimated ALNS by both 5 mm-thick MDCT and 2 mm-thick MDCT, and performed either SLNB or ALND as part of the surgical treatment. The diagnostic accuracy for ALNS was evaluated based on the histological findings of either SLNB or ALND as a reference standard.

Results: The mean age of the patients was 57 years and all were female. Among the 246 patients examined, 72 (29%) patients were diagnosed pathologically as node-positive, and 174 (71%) were as node-negative. For establishing the ALNS, 5 mm-thick MDCT shows a sensitivity of 35%, a specificity of 93%, a positive predict value of 68%, a negative predict value of 78% and an accuracy of 76%. On the other hand, 2 mm-thick MDCT shows a sensitivity of 35%, a specificity of 97%, a positive predict value of 81%, a negative predict value of 78% and an accuracy of 78%. By using 2 mm-thick MDCT, the specificity, positive predict value and accuracy of detecting ALNS in patients with breast cancer improved.

Conclusion: In patients with breast cancers, 2 mm-thick MDCT is more effective than 5 mm-thick for detecting ALNS. For current evaluation of ALNS, sufficient thin slice MDCT is required.

606   Poster
Mammographic and ultrasonographic findings after oncoplastic techniques and breast reconstruction for breast cancer

A. Guma Martinez[1], A. Valdivielso Ortiz[1], R. Perez Lopez[1], R. Ortega Martinez[1], A. Lopez Ojeda[2], D. Perez Sidelnikova[2], G. Gonzalez Rivas[2], J.M. Serra Payro[2], L. Prieto Alvarez[1]. [1]Hospital Universitari de Bellvitge, Radiology, L'Hospitalet de Llobregat − Barcelona, Spain; [2]Hospital Universitari de Bellvitge, Plastic Surgery, L'Hospitalet de Llobregat − Barcelona, Spain

Background: To describe the mammographic and ultrasonographic findings in patients treated for breast cancer with oncoplastic techniques in conservative surgery and with breast reconstruction techniques in mastectomy.

We review normal and pathologic findings and signs of recurrence.

Materials and Methods: Oncoplastic techniques after breast-conserving therapy and breast reconstruction techniques after mastectomy are a treatment choice for women with breast cancer, being an alternative treatment to conventional surgery in specialized centers.

Conservative treatment with oncoplastic techniques include tumorectomy with remodelling, tumorectomy with reduction mammoplasty, and partial reconstruction using prosthesis or autologous tissue.

After mastectomy, immediate breast reconstruction is the elected technique at our institution, and it includes the use of tissue expanders, prosthesis and autologous myocutaneous flaps.

Follow-up mammographies are systematically carried out yearly according to our protocol, and sonographic exams are complementary to follow-up mammography.

We review exams performed to 355 patients treated between 2005 and 2008; 243 patients were treated with mastectomy and breast reconstruction, and 112 with conserving therapy (20 hemimastectomy).

Sixty one patients had bilateral reduction mammoplasty, 17 tumorectomy and remodeling, 196 reconstruction with myocutaneous flaps only, 51 autologous flap with implant, and 25 patients only implant.

Results: Implants are radiopaque, and autologous myocutaneous flaps are radiolucent, with variable density due to the muscle component.

Fat density surrounded by dense band and muscle fibers inside are normal findings of myocutaneous flaps. Implant wrinkles are seen with saline implants.

Parenchymal redistribution inferiorly, distortion and elevation of nipple are normal findings in reduction mammoplasty.

Unlike simple tumorectomy, postoperative scarring and fluid collecions inside cavities are not visualized in remodelling techniques.

Abnormal findings in these techniques are fat necrosis, dystrophic calcifications, epidermal inclusion cysts and recurrent carcinoma.

Conclusions: Treatment of breast cancer with oncoplastic techniques has increased in popularity. Mammography and ultrasound provide excellent visualization of normal and pathologic findings in reconstructed breasts.

For a better follow-up of these patients, radiologists dedicated to breast pathology need to be familiarized with these radiologic findings.

607   Poster
USG scan of the axilla complemented with clinical examination can help predicting positive nodes and avoid unnecessary axillary node clearance in invasive breast cancer

D. Ghosh[1], N. Das[1], G. Selenica[1], T.I.A. Abdullah[1]. [1]Edith Cavell Hospital, Peterborough Breast Unit, Peterborough, United Kingdom

Introduction: Axillary node status remains the most important prognostic factor in invasive breast cancer recurrence. Axillary Node Clearance (ANC) remains the mainstay of treatment for all patients who have lymph node involvement with metastatic disease. The information obtained from the axillary clearance helps in planning further adjuvant therapy. Sentinel Lymph Node biopsy (SLNB) has become the standard method of staging the axilla. In order to avoid unnecessary ANC ultrasound (USG) of the axilla followed by either FNA or core biopsy of the abnormal gland is being undertaken. This however commands additional resources and training which is not freely available. As a compromise, we relied on USG and