92 patients with VAB diagnosis of either AH or in IN, as well as in all 39 IC. Hystologic exam on operatory specimen as compared with VAC diagnosis demonstrated: IN in 8 of 38 cases diagnosed as AH; IC in 11 of 54 cases diagnosed as IN. Thus, false negative (FN) rate of VAB diagnosis in our series was 21% in AH and 20.3% in IN, respectively. Nevertheless, second surgery for radicalization was needed only in 3 of 19 (15.8%) understaged patients.

Conclusions: Our experience confirms the already reported data of a lower, as compared with other non-surgical diagnostic means, but not negligible FN rate in case of VAB diagnosis of either AH or IN. Given that surgical excision is mandatory after VAC finding of AH to confirm benign lesion, we found that preoperative understaging of both AH and IN has low clinical relevance.

54 Poster

Bilateral breast cancer – an Asian perspective

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Background: Bilateral breast cancer is rare with a worldwide incidence of 0.8−20% based on Western data. There is limited publication of this in an Asian population. Singapore has one of the highest incidences of breast cancer in Asia. A study was conducted to evaluate the histological features and treatment of bilateral breast cancer in Asian women.

Materials and Methods: A retrospective review of a prospectively collected breast cancer database was performed. Between 1992 to 2007, 1326 women were treated for breast cancer at Changi General Hospital, Singapore. Of these, 52 were found to have bilateral breast cancer. The clinical and histological features and treatment were analysed. Contralateral breast cancer diagnosed within three months of the primary was taken to be synchronous whereas those presenting after three months was considered metachronous carcinoma.

Results: The incidence of bilateral breast cancer was 4.0%. There was a predominance of Chinese women (78.8%) compared to the national demographics. The mean age of diagnosis of the primary carcinoma was 55.3 years while the second was 57.5 years. There were 26 patients with synchronous bilateral breast cancer (SBC) and 26 with metachronous bilateral breast cancer (MBC).

The most (71.2%) common presentation of the primary was a lump. While most (46.3%) of SBC presented with mammographic abnormality, the majority (65.4%) of MBC presented as a palpable lump. The most common histology was invasive ductal carcinoma (55.8% primary cancer and 57% second cancer). A larger proportion of MBC (84.0%) had early stage primary carcinoma compared to SBC (70.8%).

SBC had a lower level of positive hormone receptor status (68.4%) compared to MBC (84.2%). However, SBC had a higher HER-2 receptor positivity (34.6%) compared to MBC (19.2%). Majority underwent simple mastectomy for both breasts (primary cancer 59.6% and secondary cancer 69.2%). Systemic adjuvant therapy was based on the side with the higher stage.

Conclusions: Bilateral breast cancer is rare in the Asian population with the highest incidence amongst Chinese women. Synchronous breast cancer have lower hormone receptor positivity but higher HER-2 receptor positivity compared to MBC.

55 Poster

Non-malignant papillary lesions of the breast at a US-guided directional vacuum-assisted removal – A preliminary report

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Background: To assess that accuracy of US-guided directional vacuum-assisted removal (US-DVAR) in evaluating non-malignant papillary breast lesions.

Materials and Methods: This retrospective study was approved by the institutional review board at our institution; patient consent was not required. We reviewed the clinical and pathologic findings from a total of 39 papillary lesions diagnosed at vacuum-assisted removal in 37 patients (age range, 26−60 years; mean age, 44.5 years). Over the follow-up period, we evaluated whether any histologic upgrade occurred and whether or not residual lesions were detected on follow-up imaging.

Results: US-DVAR of 39 lesions yielded tissue that was classified as benign in 35 and atypical in four. Of the 33 lesions that were diagnosed as histologically benign at US-DVAR, two were surgically excised. Both of them yield benign results. Of the 33 benign lesions that were not surgically excised, twenty-eight (85%) was not seen at radiographic follow-up. Of the four lesions diagnosed as atypical at US-DVAR that were surgically excised, all the four were benign. None proved to be malignant. The upgrade rate was 0.0% (95% confidence interval: 0−9%).

Conclusion: Among our patients, diagnosis by US-DVAR of benign papillary lesions proved to be accurate and benign papillary lesions at US-guided directional vacuum-assisted removal do not need to be surgically excised for accurate diagnosis.

56 Poster

MoCo – an image-based retrospective study assisted by electronic image management – an implemented solution at Munich Technical University

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Background: Clinical trials are essential to investigate new diagnostic or therapeutic procedures and their clinical relevance. Information systems are established in clinical routine but clinical trials are often still lacking direct support by electronic systems. Bridging the gap between clinical research and clinical routine, studies are required in a hospital setting. Most studies are paper based and require repeated input of data that already exist in the hospital information system (HIS). Usually, the image data base (if electronically available) is separate from the study data base.

Method: In a collaboration between the Department of Obstetrics and Gynecology, Klinikum rechts der Isar, Technical University of Munich and Siemens Medical Solutions a web-based front-end and back-end integration of different electronical information systems used in clinical routine (SAP/IS-H*Med, SWISSlab, KIS, PACS) as well as a research database was developed. The integrated solution was then implemented to support diagnostic, image-based clinical trials in order to facilitate clinical trials and allow complete data representation within one system.

Two pilot projects using this integrated solution were then started, one phase-II therapy trial (HEDON – Herceptin-Docetaxel-Neoadjuvant) and the MoCo Trial (Motion Compensation).

The MoCo trial focuses on the diagnostic value of motion compensation for MR images using two different motion correction algorithms. Therefore, pseudomized pre-surgically performed contrast enhanced breast MR images of 100 MRI cases performed before breast conserving therapy for staging purposes are stored in a research PACS. The images are analyzed and correlated with the definite histopathological diagnosis by a superreader who describes the findings and writes the results directly into the corresponding eCRF (electronic Case Report Form).

To evaluate the diagnostic value of the motion compensation algorithms, four external readers then perform blinded reading on the set of MR images (with and without applied motion correction algorithms) for each case and store their results in the eCRFs as well.

A special integrated application allows correlating the lesions detected by an external reader with the ones described by the superreader.

Results: The developed system facilitates to easily compare the results of the external readers with the superreader's results. Errors that are traditionally caused by incorrect correlation of images and data entered on paper can be dramatically reduced by electronically linking all images and data (case report forms). Another expected benefit is the comfortable selection of images that are already stored in an existing IT system (clinical routine PACS) for the image based trial.

The result of the first 50 readings will be presented.

57 Poster

Imaging evaluation of pathological response in breast cancer after neoadjuvant chemotherapy by real-time sonoelastography and MRI

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Background: The evaluation of tumor response and pathological CR (pCR) after neoadjuvant chemotherapy in breast cancer is essential. The goal of the present study was to compare the sensitivity and specificity of real-time sonoelastography (EG) with that of B-mode ultrasound (US) and MRI for prediction of pathological complete response to neoadjuvant chemotherapy in breast cancer.