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Randomised clinical study of the of intraoperative ultrasound guided occult breast lesion localization (IUSOLL). The comparison of IUSOLL and radioguided occult lesion localization (ROLL) method

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Background: Occult lesions are those breast tissue mutations which cannot be palpated, usually less than 15 mm. Various methods of intraoperative guiding should often be used in the process of their biopsy. In this research we have analyzed the results of the occult lesion biopsy in cases of the intraoperative ultrasound guided biopsy (IUSOLL − the acronym of Intraoperative Ultrasound Guided Occult Lesion Localization), and the results of those biopsies have been compared to the results obtained with the application of the ROLL method (the acronym of Radioguided Occult Lesion Localization).

Materials and Methods: A total of 66 female patients with occult breast tumors were enrolled in our study. For all 66 patients were used in combination intraoperative ultrasound and the ROLL method in a way that we first did the biopsy under the control of intraoperative ultrasound and later, using the gamma probe, we removed the remaining radioactive tissue preoperatively marked with 2 mega-Bequerel of Technetium 99m-labeled colloidal albumen (particle size 10–150μm) injected intra-tumoraly.

Results: IUSOLL method is an absolutely successful occult breast lesions biopsy method (100%). With the application of the IUSOLL method the bioptic sample is on average for 32% lighter than one taken with the application of the ROLL method ($m_{(IUSOLL)} = 45$ g: $m_{(IROLL)} = 31$ g). This difference is statistically important ($p < 0.001$). Statistically important also is the reduction achieved when instead of the mass of the bioptic sample we have compared the volume of the tissue excised with the application of particular methods. The volume obtained with the IUSOLL method is on average 22% lower than the one obtained with the ROLL method ($V_{(ROLL)} = 37\ cm^3$; $V_{(IUSOLL)} = 29\ cm^3$).

Conclusions: IUSOLL method represents an exceptional alternative in occult breast lesions surgery and thanks to its characteristics it surpasses the ROLL method. The IUSOLL method has smaller number of unsuccessful biopsies, it excises less healthy breast tissue and in that way improves the oncological and esthetic result of the operation. The IUSOLL method excludes unpleasable pre-operative injection of the marker into the tissue together.

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Role of MRI in the pre-operative evaluation of invasive lobular carcinoma

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Background: Invasive Lobular Carcinoma (ILC) is a form of breast cancer that is frequently multicentric and bilateral. Current guidelines suggest pre-operative evaluation of ILC with dynamic MRI to assess whether breast conservative surgery (BCS) may be indicated. The aim of our study is to determine the value of MRI in accurately assessing the tumour size detection of multicentric and bilateral disease and also its impact on surgical management (mastectomy or BCS).

Materials and Methods: All patients with pre operative diagnosis of Invasive Lobular Carcinoma had dynamic TI and T2 weighed pre and post contrast MRI images. MRI findings of tumour size, unifocal, multifocal and bilateral disease were compared with post operative histological findings. Tumour size measurements on MRI within 5 mm of histological measurements were considered correct. The Pearson correlation test was used to determine the correlation between MRI and histological findings.

Results: During the period of January 2007 to June 2009, 38 patients with Invasive Lobular Carcinoma had pre operative MRI. Of these 7 patients excluded due to preoperative chemotherapy. Of the 31 patients, one had bilateral disease, thus 32 cases of invasive lobular carcinoma analysed. All patients were women with a mean age of 64.5 yrs (range 41 to 91). 16 mastectomies and 16 wide local excisions (WLE) were performed. The pathological size of the tumour varied from 5 mm to 62 mm (mean 13.7 mm).

MRI correctly estimated the size in 21 (65.6%) cases. 6 tumours (18.7%) was under estimated and 5 tumours (15.6%) were overestimated. The correlation coefficient for MRI is r = 0.79 and statistically significant ($P < 0.05$). Focality of tumour was correctly diagnosed in 22 (68.7%) cases. 3 (9.4%) cases were wrongly diagnosed as unifocal and 5 (15.6%) cases were wrongly diagnosed as multifocal.

Conclusions: ILC is the second common type of breast cancer diagnosed in about 10% of the cases. All cases were detected with contrast enhanced MRI in our study. MRI has high accuracy rate in estimating the tumour size. Based on this, more than one third of patients (37.5%) had breast conserving surgery. Five cases had mastectomy due to correct diagnosis of multifocal and bilateral disease. This study shows MRI has high accuracy in tumour size determination and therefore plays a key role in the pre operative planning for definitive surgery.

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Behavioural and clinical outcomes of infiltrating lobular carcinomas − a retrospective analysis from 1993–2007 at the Kuwait Cancer Center

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Background: Invasive lobular cracinoma (ILC)comprises about 10%of breast cancers and appears to have a distinct biology and is less common than (IDC). A 14 year analysis was taken from 1993–2007to evaluate the incidence, tumour behavior and and clinical outcomes at the Kuwait cancer center.

Materials and Methods: A retrospective analysis of women with infiltrating lobular carcinoma diagnosed during the years from 1993–2007 were identified from the national based registry. A total of 3416 breast cancer patients were registered during this period of which 211patients were diagnosed as (ILC).

Results: Of the 211 patients, 150 patients were eligible for the study, who completed their treatment at our center, with a minimum follow up of 36 months from the date of diagnosis. Infiltrating lobular carcinomas accounted for 6.7% of the total number of breast cancer registered during the 14 year period. Most patient fell in the age groups 40−49years (33.79%)and 50−59years (37.24%). The mean age at presentation was 57.7 years. The commonest stage at presentation was stage II (38.99%) and stage III (36%). Most patients, diagnosed above the age of 65 years, presented in advanced stage of the disease. More than 95% of the tumors were receptor positive and Her 2 neu estimation was reported to be negative after the year 2000. Modified radical mastectomy was performed in 110 patients (75%) relating to either physicians choice or factors related to histology, though conservative surgery was performed in only 36 patients (25%) of the tumours. Neo-adjuvant chemotherapy did not alter the outcome in locally advanced tumors, in terms of clinical response, and many of them ended with Modified radical mastectomy. Most common sites of metastatic disease were to the bone, liver, though intraperitoneal presentations were rare in about 2% of the cases. The disease free survival (DFS) at 3 year period for stage I, stage II and stage III were 96%, 89% and 55% respectively.

Conclusions: ILC are a hetrogenous group of tumors and the management decisions should be based on individual patient and biologic characteristics of the tumour. Theses group of tumors tend to behave differently and have better prognosis which need to be closely looked while making decisions related to its clinical outcomes.

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Prospectve clinical trial of radioguided occullt breast lesion localization (ROLL) evaluation

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Background: To evaluate radioguided localization of occult breast lesions for biopsy and to describe tolerance of preoperative part of the procedure.

Matherials and Methods: The study enrolled 112 female patients and 123 non-palpable breast lesions. All lesions were preoperatively marked with Technetium-labeled colloidal albumen under ultrasound control and hot spot was intraoperatively detected by use of a hand-held gama detecting probe. Specially designed queastionare was provided to the patients to describe tolerance of preoperative part of the procedure.

Results: The hot spot was succesfully localized in 100% of the patients. Non-palpable lesion was excised in first excisional attempt in 95% of the cases. The second excisional attempt rises success of excision up to 99%. Preoperative part of procedure is well tolerated and majority of simptoms described by the patients are classified as unspecified discomfort or low grade pain (84%).

Conclusions: Radioguided occult lesion localization (ROLL) method offers safe and acurate occult breast lesion removal, with minimal damage of healthy breast tissue and minimal side effects.