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One moment breast reconstruction in breast conserving surgery in breast cancer using intraoperative radiotherapy

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Purpose: To evaluate the possibility of one moment breast reconstruction (BR) in breast conserving surgery (BCS) in breast cancer (BC) using intraoperative radiotherapy (IORT).

Materials and Methods: Treatment was given to 7 patients with BC T2−3 N0−1 M0 aged 40−54. Quadrantectomy with one moment BR using the shifted latissimus dorsi flap was performed in 5 patients, 2 patients were subjected to subtotal resection with BR with free TRAM flap. IORT was carried out on a small-sized betatron MIB-6 E in a dose of 10 Gr to the tumor bed. In the postoperative period all patients received distant gamma-therapy to the breast till the course dose of combined irradiation of 60 Gr.

Results: negative influence of IORT on operation, postoperative period and healing time was not noted. Complications concerning the flap, surrounding tissues were not marked as well. The observation period made up from 6 to 30 months. During observation the worsening of the main disease was not revealed. Aesthetic results were estimated as rather good.

Conclusion: the possibility of one moment BR using both shifted and free flaps in carrying out IORT has been shown. The carrying-out of one-moment BR using IORT makes it possible to broaden indications in case of conducting BCS of BC patients, to achieve a good aesthetic results and improve the quality of life.

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Therapeutic mammotome excision of BI-RADS 4A breast masses

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Background: In the evaluation of BI-RADS 4A breast lesions, to achieve a correct pathologic diagnosis is decisive. Core needle biopsy has become a frequently used method for tissue diagnosis of palpable and nonpalpable lesions. But the possiblity of understaging of the lesions has been reported due to insufficient sampling. Recent advances in innovative minimally invasive technologies, combined with ultrasound-guided biopsy techniques, have made the process of differential diagnosis of breast masses less traumatic to the patient while still maintaining the surgeon's confidence with the biopsy results. Using the Mammotome hand-held breast biopsy system (Ethicon Endo-Surgery, Cincinnati, Ohio) with ultrasonography guidance, a single insertion of the device with vacuum assistance for sample capture allows for adequate tissue collection for diagnostic and therapeutic purposes. To evaluate the efficacy of US guided mammotome excision of BI-RADS 4A breast masses, we analyzed the breast masses treated with mammotome excision.

Materials and Methods: From Jan. 2005 to Apr, 2007, total 328 pateints were included (of 356 cases) of mammtome excision, Among them 165 cases of BI-RADs 4A lesions were reviewed. We analyzed the size, location, pathologic results and complications. Post -mammotome follow up US were performed in 6months for the evaluation of residual lesions and measured the size of the remannt lesions.

Results: The mean age was 42.9 yr (from 22 to 67 years old), size was 1.18 cm (0.3−3 cm), upper outer quadrant were most common location (49 cases – 29.7%). Benign lesion 164 cases (99.39%), malignancy was one case (0.61%). The specific histopathology of benign lesion were fibroadenoma (87, 52.73%), fibrocystic disease (22, 13.33%), ductal hyperplasia (21, 12.73%). No specific procedure relarted complications were noted except one case of post biopsy hemorrhage. Follow up US in 6 mo revealed resideual tumor in 10 cases (18.87%). The size range of residual tumor is between 0.5 to 1.22 cm.

Conclusions: The immediate procedural results from this study demonstrate the feasibility of completely removing a benign palpable mass using either the 8-gauge or 11-gauge hand-held Mammotome breast biopsy system probe. The results of the 6-month follow-up demonstrate the effectiveness of benign lesion removal with correlative clinical data that demonstrate lack of palpability and no need for additional procedures. Lastly, patient satisfaction in having a benign palpable lesion removed with the Mammotome was high and anxiety levels were significantly reduced.

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Trends of breast conservation therapy rates for T1−2 invasive breast cancers in Hong Kong: are we making progress?

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Background: The use of breast conservation therapy (BCT) in Hong Kong has been limited by small breast sizes of Chinese ladies and the lack of governement-funded breast screening program. This study evaluates the trend of BCT in Hong Kong over the last fourteen years and factors affecting its application.

Materials and Methods: The patient database including all female breast cancers referred to our community oncology center between 1994 and 2007 were retrospectively analyzed. Of the 2,375 T1−2 invasive breast cancers operated during the study period, there were 1,137 (48%) T1 and 1,238 (52%) T2 breast cancers respectively. Chi-square test was used in statistical analyses.

Results: In this cohort, 2,153 (91%) patients presented with palpable breast masses and only 104 (4%) patients had breast lesions first detected by mammography. Overall, 721 (30%) and 1,654 (70%) patients underwent BCT and mastectomy (with or without reconstruction) respectively. Over the last fourteen years, there was no significant increase in our BCT rates ($p = 0.804$) or mammographic detection rates ($p = 0.125$). Breast cancer patients were more likely to have BCT if their ages were $\leqslant 40$ (45% vs. 28%, $p < 0.0005$) or if their breast cancers were first mammographically detected (52% vs. 29%, $p < 0.0005$) or $\leqslant 2$ cm in size (44% vs. 18%, $p < 0.0005$). For young ($\leqslant 40$) patients with $\leqslant 2$ cm breast cancers, 58% of them received BCT.

Conclusions: The BCT rate for small or mammographically detected lesions reflects a wide acceptance of breast-conserving approach in Hong Kong. However, our continual dismally low popularity of breast screening has limited an otherwise wider application of BCT in our population. Efforts in promoting early detection and breast screening are eagerly needed.

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Histological margins of ductal breast carcinomas (in situ, microinvasive and invasive)

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Background: Margin status is one of the main factors to consider breast conserving surgery (BCS) on early stages of breast cancer. The final goal should be to obtain free margins, but not in every margin-affected biopsy, is residual carcinoma found. We analysed histological characteristics of ductal carcinomas, in order to know which of them could correlate with margin status at first biopsy and existence of residual tumour in re-excisions.

Material and Methods: We retrospectively analysed 475 ductal carcinomas: 76 (11.5%) ductal carcinomas in situ (DCIS), 390 (59.2%) invasive ductal carcinomas (IDC) and 9 (1.4%) microinvasive carcinomas (T1mic), diagnosed during years 2003 to 2006. We considered "positive" re-excisions those with residual tumour (either in situ or invasive carcinoma).

Results: Excluding mastectomy as first surgery, we found involved margins of BCS in 86% of T1mic, 50% of DCIS and 40% of IDC ($p = 0.03$), so a second surgery (T1mic 67%, DCIS 47%, IDC 38%) or even a third one for persistently involved margins (T1mic 0%, DCIS 11%, IDC 2%) was more frequent in DCIS than in IDC ($p = 0.001$). No differences were observed regarding margin status whether diagnosis was done after mammographic wire-guided biopsy or palpable lump, existence of necrosis or immunohistochemical factors (hormonal receptor status, cerbB2 overexpression, proliferative index MIB-1 or positive p53).

Histological higher grades (2 or 3) were related to more involved margins (63%) and greater ($p = 0.05$) positive re-excision rate (65%) in DCIS. The mean tumour size of DCIS with clear margins was ($p = 0.006$) smaller than that with involved margins. Only in IDC, multifocality was related ($p = 0.0001$) to more involved margins (71%) and greater residual tumour rate. Re-excissions for IDC with tumoral cells less than 3 mm away from the margin, had statistically similar residual tumour rates than those for involved margins. IDC with cerbB2 overexpression, MIB-1 > 30%, positive p53, size >20 mm and axillary lymph node involvement, had more residual tumour rate on re-excisions.

Conclusions: Preoperative determination of histology and immunohistochemistry of breast cancer previous to surgery by core biopsy (whether stereotactic-guided or not) may have surgical implications, identifying a subset of patients in which the chance of finding involve margins is greater.