

conserving surgery, especially in the patients which had small to moderate sized defect on breasts.

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Oncoplastic Techniques for Reconstruction of Partial Breast Defects based on Tumor Location and Excised Breast Volume in Small- to Moderate-sized Breast

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Background: Oncoplastic breast surgery has become an increasingly popular treatment for breast cancer. However the average breast size of Korean women is not as large as that of western women, many women may compromise the cosmetic outcome especially with small to moderate sized breasts. This study provides a comprehensive overview of oncoplastic techniques based on tumor location.

Materials and Methods: From January of 2007 to June of 2011, 134 women underwent breast-conserving surgery with various oncoplastic techniques. If the excised breast volume in patients with small to moderate sized breasts was less than 100g, the patients were divided into three groups: superiorly-located group, centrally-located group (the location of breast cancer was within 2 cm from areolar margin) and inferiorly-located group. In superiorly-located group, from inner quadrant to outer quadrant, rotational flap, tennis racket technique, reduction technique (inverted T, vertical type), thoracoepigastric flap, intercostal artery perforator (ICAP) flap and lateral thoracodorsal flap were applied. In centrally-located group, purse string suture, linear suture, reduction technique, thoracoepigastric flap, ICAP flap and adipofascial flap were applied. In inferiorly-located group, tennis racket technique, reduction technique, thoracoepigastric flap and ICAP flap were applied. Regardless of the location of breast tumor, if excised mass weight was over 100g, volume replacement technique was required. If excised mass weight was from 100g to 150g, ICAP flap and thoracodorsal artery perforator (TDAP) flap was performed. And if over 150g, latissimus dorsi myocutaneous flap was performed.

Results: The patients who had superiorly-located breast cancers underwent oncoplastic techniques including rotational flap (n=14), tennis racket technique (n=13), reduction technique (n=4), thoracoepigastric flap (n=2), ICAP flap (n=8), lateral thoracodorsal flap (n=2) and latissimus dorsi myocutaneous flap (n=17). The patients who had centrally-located breast cancers underwent oncoplastic techniques including purse string suture (n=8), linear suture (n=8), reduction technique (n=2), thoracoepigastric flap (n=2), ICAP flap (n=7), adipofascial flap (n=2) and latissimus dorsi myocutaneous flap (n=3). The patients who had inferiorly-located breast cancers underwent oncoplastic techniques including tennis racket technique (n=7), reduction technique (n=15), thoracoepigastric flap (n=1), ICAP flap (n=5), TDAP flap (n=3) and latissimus dorsi myocutaneous flap (n=11). The average specimen weight was 129.7g. Contralateral breast surgery (mastopexy, augmentation or reduction mammoplasty, and so on) was performed, if needed to restore the symmetry. The majority of patients were satisfied at the cosmetic result that evaluated in 15 months.

Conclusion: Oncoplastic techniques in patients with small to moderate sized breasts also can be reliable and useful procedure in the correction of the breast deformity after breast conserving surgery.

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Radioactive Seed Localization for Non-palpable Breast Cancer – a Systematic Review

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Background: Radioactive seed localization (RSL) is an alternative to guidewire localization (GWL) to guide surgical excision of non-palpable breast cancer. This systematic review provides an overview of the available evidence on feasibility and accuracy of RSL in patients undergoing breast conserving surgery.

Material and Methods: Pubmed, Embase and Cochrane were systematically searched in October 2011 for studies addressing radioactive seed localization for non-palpable breast cancer, using an Iodine-125 seed. Studies were deemed eligible if they reported on proportion of patients with tumor positive margins after RSL, proportion of patients needing re-excision after RSL, and procedural complications.

Results: Out of the 152 hits, six studies addressing RSL in 1615 patients with non-palpable breast lesions, were included. Overall complete resection rates ranged from 73% to 97%. Three studies included over 300 patients, and complete resection rates in these studies varied between 89% and 97%. Surgeons indicated a strong preference for RSL. Risks of seed migration and placement failures were acceptable, ranging from 0–0.6% and 0–7.2% respectively.

Conclusion: Localization and subsequent resection of non-palpable breast lesions can be successfully performed using guidance of radioactive seeds. The current available scientific evidence suggest that RSL is comparable to GWL in terms of achieving complete resection rates and in reoperation rates. Additional advantages of RSL include higher efficiency and flexibility in scheduling operative procedures.

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Oncoplastic S-shaped or Reverse S-shaped Rotation Flap Reconstruction After Quadrantectomy as a New Option for Lower Half Located Breast Cancer

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Background: When performing breast conserving operations, inferior cosmetic outcome has been reported in lower half breast tumors, particularly in women with small firm breasts. We report here about the use of S-shaped or reverse S-shaped rotation flap reconstruction to improve cosmetic outcome in patients with lower half-located breast cancer.

Methods: Thirty three patients with invasive breast cancer located in the lower half of the breasts, which were more than two centimeter apart from the nipple, were included. After completing quadrantectomy, single S-shaped or reverse S-shaped incision was made from axilla to tumor site. Two triangular skin islands, one on the axilla and one overlying the tumor were marked for excision. Once the fibroglandular tissues and the additional fatty tissue of the lateral chest wall were appropriately mobilized, the breast defect was closed at the mid-point of the parenchymal thickness in order to keep the natural position of the inframammary fold.

Results: Median tumor size was 2.3 cm, ranging from 0.7 to 3.5 cm. With a median follow up of 18.5 months, ranging from 3 to 27.5 months, cosmetic outcome were good (31/33) to fair (2/33) after the radiation therapy and there was no local or systemic recurrence.

Conclusion: Clearly, this type of rotation flap reconstruction is an oncologically safe and a cosmetically sound procedure. Hopefully this rotation flap reconstruction will become more widely available and perhaps a standard procedure for lower half located breast tumors, especially in the small to medium sized breasts.

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Initial Experience with Ultrasound Detectable Clips for Intra-operative Tumour Localization by Surgeons

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Background: Biopsy of suspicious breast lesions is often followed by insertion of a metal clip to verify the location of the lesion, simplify surgical procedures that follow, or mark lesions to be treated by neo-adjuvant chemotherapy. Most clips are difficult to detect by ultrasound and require mammographic localization prior to surgery. Hydromark clips (Biopsy Sciences, Clearwater, FL) absorb water molecules, expanding to become visible by ultrasound and containing a metal clip detectable by mammography. Our objective was to check whether Hydromark clips can be detected during surgery using intra-operative ultrasound by the surgeon without the need for pre-operative needle localization.

Materials and Methods: Five patients had surgery for breast cancer after Hydromark clip placement. The clip was placed by the radiologist during biopsy in two of the patients. Three additional patients had the clip inserted by the surgeon using ultrasound guidance during surgery for sentinel node biopsy before neo-adjuvant chemotherapy. In the patients having neo-adjuvant chemotherapy, monthly ultrasound was performed to monitor the rate of decay of the sonographically detectable part of the clip. At surgery, the margins of resection were determined by intra-operative ultrasound performed by the surgeon in 4 patients, without pre-operative needle localization. One patient elected to have a mastectomy.

Results: Initial tumor size in the patients having neo-adjuvant chemotherapy was 2, 4.2 and 5 cm. The Hydromark clip remained easily detectable by ultrasound until the time of surgery at 140 to 182 days after placement. Tumor size in the patients with surgery as initial treatment was 1.8 and 0.9 cm. Closest surgical margins in the four patients who were