

Breast Surgery Division

Introduction

With recent introduction of mammographic screening and increased incidence of breast carcinomas in Japan, the public concern about breast cancer grew especially in 2003 and the number of patients in outpatient clinic increased. We performed 385 operations on breast carcinomas in 2003.

Routine Activities

This division consists of three full-time surgeons, one chief resident, and two or three rotating residents.

Breast conserving treatments (BCT) have gradually increased in number. BCT usually consists of local excision of the tumor and level II axillary dissection followed by postoperative irradiation of the remaining breast. Indications for BCT are tumors smaller than 3 cm. Patients with multifocal cancer or marked calcifications detected by mammography are not suitable for BCT. Neoadjuvant chemotherapy (NAC) and/or endocrine therapy are given to avoid mastectomy for larger tumors. One third of patients with NAC underwent BCT.

Patients will receive adjuvant chemoendocrine therapy according to their prognostic and predictive factors. Significant prognostic factors include the number of lymph nodes involved, followed by the tumor's histological grade and secondary prognostic markers (p53, HER2/neu (c-erbB2)etc), and so on. Widely accepted factors which predicts response to a specific therapy are estrogen and progesterone receptors, and HER2/neu.

A weekly conference is held on Wednesday from 16:30 to 17:30 in order for surgeons, medical oncologists, and radiologists to discuss the diagnosis, operative procedures, and adjuvant chemoendocrine therapy of each patient. The diagnostic images are reviewed with the comparison of pathological reports in every postoperative patients.

A monthly breast conference is held on the last Wednesday from 17:30 to 19:00. A monthly theme (e.g., a new protocol study, problems in diagnostic imaging, pathologically interesting cases) is discussed among doctors involved in the breast cancer field, including participants from other hospitals.

Research Activities

There are two patterns of shrinkage after NAC; concentric and mosaic residue. The classification of tumors into either localized or diffuse types using contrast-enhanced helical computed tomography (CE-CT) prior to NAC administration accurately predicts which tumors will be suitable candidates for BCT following NAC (Akashi-Tanaka et al).

As indications for NAC become more widespread, the question arises if sentinel lymph node biopsy (SLN) is appropriate for axillary staging in patients after NAC. The accuracy and the feasibility of SLN are evaluated.

The impact of local failure on survival outcome in breast cancer treated with BCT is currently being reevaluated and obtaining clear surgical margins is given attention to avoid local failure. The preoperative identification of an extensive intraductal component (EIC) and small invasive foci such as multicentricity and daughter lesions are important factors determining the extent of breast resection required. We have obtained satisfactory results with 3D-MR Mammography(MRM)and CE-CT to detect them (Kinoshita T, Akashi-Tanaka et al). We use CE-CT to determine the extent of resection prior to performing breast conserving surgery and to determine the extent of residual disease after neoadjuvant chemotherapy (Akashi-Tanaka et al). The excellent spatial resolution of this procedure allows visualization of small nonpalpable invasive cancers and invasive lobular carcinomas which cannot be demonstrated by other modalities.

Inherited mutant BRCA1 and BRCA2 account for 20-40% of high-risk families in Japan, and therefore at least one more gene (BRCA3?) is required to explain dominantly inherited susceptibility to breast cancer. Ductal hyperplasia and adenosis were typical pathological background features of BRCA1/2-associated breast cancers (Fukutomi et al). This pathological character is also observed in premenopausal patients of familial breast cancer (Fukutomi et al).

Clinical Trials

1) Adjuvant therapy

After surgery every patient at high risk for recurrence receives adjuvant chemoendocrine therapy according to the international consensus meetings. Treatment strategy is stratified by hormone receptor status, axillary lymph node status, histological grade and menopausal status. Only patients with negative axillary lymph nodes with low nuclear grade cancers receive no adjuvant therapy. For the patients with node positive breast cancer, multiinstitutional

randomized clinical trial comparing Taxans and doxorubicin (ADM) is ongoing (NSAS-BC02). The results of the NSAS-BC01, which compared UFT with CMF in patients who had high histological grade cancers with no lymph node metastases, and a randomized phase II study comparing TAP-144-SR (3 months) vs TAP-144-SR (1 month) for receptor positive cancer is awaited.

2) Neoadjuvant therapy

For women with locally advanced breast carcinoma (T>3cm) a NAC study (phase II) is ongoing. Since the end of 2002, the new regimen of NAC is available including cyclophosphamide, doxorubicin and paclitaxel for premenopausal women, and they have shown a remarkably good clinical response. NSABP B-18 trials demonstrated the patients with pathological complete response had a better prognosis than others. The accompanied study using array analysis is planned to evaluate the predictability of complete pathological response.

● S. Akashi-Tanaka ●

Number of Patients Operated on (2001)

Type of operation	No.
Modified radical mastectomy	223
Breast conserving surgery	143
Wide excision	3
Simple mastectomy	8
Other	37
Total	414

10-yr survival rate of primary breast carcinoma (1990)

stage I	79.5%
stage II	68.9%
stage IIIa	50.1%
stage IIIb	42.9%
stage IV	0%