Post-operative Follow-up of Breast Cancer Patients

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Abstract: Breast cancer recurrences are classified according to their sites; (1) local recurrence, (2) recurrence at regional lymph nodes, and (3) distant recurrence. After the breast conservation surgery, recurrence may occur (4) within the breast. Post-operative follow-ups should include physical examination of sites where recurrence is likely to occur and the contralateral breast. Guidelines for breast cancer surveillance recommended by the American Society of Clinical Oncology (ASCO) teach that regular and frequent post-operative imaging tests are not necessary, the clinical findings should be studied, and annual mammography of the preserved and the contralateral breast be performed. We believe, however, that less invasive tests such as chest X-ray, tumor markers, etc. should be conducted routinely while other imaging tests (bone scintigraphy, abdominal computed tomography and ultrasonography) should be given individually. Providing information on recurrences and teaching self-examination of the contralateral breast are also important.

Key words: Breast cancer; Follow-up; Recurrence

Introduction

Breast cancer requires extensive post-operative surveillance. In the early post-operative stage, psychological as well as physical care should not be neglected. Japan has no established guidelines for intervals or modalities of the follow-up tests, and institutions follow the course by considering the actual conditions. This paper discusses the guidelines for post-operative surveillance of breast cancer in the United States, and the current status of and the principles followed by the Osaka Medical Center for Cancer and Cardiovascular Diseases.

Sites and Timings of Breast Cancer Recurrence and Incidence of Second Primary Cancers

Breast cancer recurrences are classified by
Follow-up After Breast Cancer Surgery

Frequent examinations as post-operative surveillance are generally believed to lead to early detection of recurrences and greater benefits to the patients. The theory is, however, disputed, and the view that frequent tests (except mammography) are not necessary seems to prevail overseas. The results of two large-scale randomized trials in Italy showed that early detection of recurrences by frequent tests did not mean longer survivals or improvements in quality of life (QOL). These clinical trials compared the overall survival and QOL of the two groups; patients in both groups had physical examination and mammography, while patients in the intensive follow-up group had, in addition, chest X-ray, bone scintigraphy and abdominal ultrasonography every six months. The results showed no inter-group differences.

The guidelines for breast cancer surveillance recommended by the American Society of Clinical Oncology (ASCO) do not suggest regular or frequent imaging tests (Table 1). We are somewhat puzzled by the fact that the guidelines do not recommend tumor marker tests. There may be an economic reason in the background, but we believe some tests are still essential in order to maintain an adequate doctor-patient relationship. On the other hand, ASCO

Table 1 Follow-ups of Breast Cancer Patients
— ASCO Guidelines and current practice at Osaka Medical Center for Cancer and Cardiovascular Diseases —

<table>
<thead>
<tr>
<th>Test</th>
<th>ASCO Guidelines (partially modified)</th>
<th>Osaka Medical Center for Cancer and Cardiovascular Diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. History/eliciting symptoms and physical examination</td>
<td>Every 3–6 mos (0–3 yrs)</td>
<td>Every 3 mos (0–2 yrs)</td>
</tr>
<tr>
<td></td>
<td>Every 6–12 mos (3–5 yrs)</td>
<td>Every 6 mos (2–5 yrs)</td>
</tr>
<tr>
<td></td>
<td>Every year (5 yrs–)</td>
<td>Every year (5–10 yrs)</td>
</tr>
<tr>
<td>2. Breast self-examination</td>
<td>Every month</td>
<td>Any time</td>
</tr>
<tr>
<td>3. Mammography (contralateral breast, ipsilateral breast)</td>
<td>Every year</td>
<td>As needed</td>
</tr>
<tr>
<td>4. Pelvic examination</td>
<td>Every year</td>
<td>As needed</td>
</tr>
<tr>
<td>5. Hematology, blood chemistry, tumor marker tests</td>
<td>No regular test needed</td>
<td>At the same interval as 1</td>
</tr>
<tr>
<td>6. Bone scintigraphy</td>
<td>No regular test needed</td>
<td>As needed</td>
</tr>
<tr>
<td>7. Abdominal ultrasonography</td>
<td>No regular test needed</td>
<td>As needed</td>
</tr>
</tbody>
</table>

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sites roughly into three; (1) local recurrence (on the chest wall of the diseased breast), (2) recurrence at regional lymph nodes, and (3) recurrence at distant sites. After breast conservation surgery, recurrence uniquely occurs (4) within the ipsilateral breast. Metastases occur at distant organs such as the bone, lung and/or pleura, liver, and brain, but distant metastasis occurs more often in the bone, lung and/or pleura in this order. Although recurrences of breast cancer usually occur within five years as in other cancers, they also occur characteristic at later times. On the other hand, ipsilateral breast tumor recurrence after breast conservation surgery occurs in 1–2% of patients per year rather than at any particular time. The sites where recurrences are likely to occur and the contralateral breast should be monitored in the post-operative follow-ups.

The incidence of breast cancer patients developing cancer of other organs is higher by 30% compared to the general population, and detection is reported rather early following the surgery. Tamoxifen widely used in adjuvant therapy following breast cancer surgery is known to slightly increase the risk of endometrial cancer, but this is not considered a problem in Japan. Care may become necessary in the future since the standard duration of adjuvant tamoxifen is now longer than 2 years (usually 5 years).
guidelines recommend annual mammography for the contralateral and the ipsilateral breasts (for patients who received breast conservation surgery), which we find rather too frequent.

There are many institutions in Japan that give intensive follow-up tests such as bone scintigraphy. Usually, no problems are encountered even if bone scintigraphy is limited to symptomatic patients. At our institute, we frequently perform non-invasive tests such as chest X-ray and tumor markers, but we have no standards for performing bone scintigraphy or abdominal ultrasonography, which are given when specifically called for (Table 1). It would be reasonable to perform tests on ad hoc basis at adequate intervals according to individual risks for recurrence based on the disease stage and various prognostic factors. As recurrences after 10 years are quite few, we let the patient decide when to visit the clinic for follow-up.

In the case of follow-ups after breast conservation surgery, a special consideration is necessary in detecting recurrences in the breast. Prognosis of the ipsilateral breast tumor recurrence following a conservation surgery is generally favorable except for inflammatory-type local recurrence, and repeated lumpectomy is possible in some cases. Early detection is meaningful as in the case of contralateral breast cancer. It is important to have the patients realize the significance of self-examination of the ipsilateral as well as the contralateral breast as recommended by the ASCO guidelines.

**Psychological Support**

Now that physicians are naturally expected to tell the patient about the cancer, its stage and the therapeutic policy, follow-up in psychological aspect is gaining importance. Because of the unique character of the affected organ (breast), the sense of loss suffered by the mastectomy patient is grave and she requires psychological support. With the use of breast-conserving surgery, improvement in QOL is observed. According to the result of a questionnaire survey conducted by a study group of the Ministry of Health & Welfare in Japan, it was confirmed that the sense of well-being was quite high in patients who received breast conservation surgery. To those patients with great psychological burden after mastectomy, breast reconstruction should be recommended.

One problem regarding QOL following breast cancer surgery concerns pregnancy. Recent trend is to regard that there are limited evidences to support the theory that post-operative pregnancy affects prognosis. Therefore, pregnancy may be tolerated in low risk patients who do not need adjuvant therapy. Provided, however, the patient who receive adjuvant therapy should be recommended to use contraceptives for two years following the surgery and for one month after completion of the therapy.

**Conclusion**

Follow-ups after breast cancer surgery were discussed. Although Japan has no established guidelines yet, the authors believe that non-invasive tests (such as chest X-ray and tumor markers) should be given routinely while other imaging tests should be performed on individual basis by considering individual risks. Offering information on recurrences and importance of self-examination of the ipsilateral and the contralateral breasts (in patients who received the breast conservation surgery) is extremely important.

**REFERENCES**


