Breast Cancer:
Preventing a Relapse

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Table 1
Signs and symptoms of breast cancer recurrence

- Mass on chest wall after mastectomy.
- Mass in the same breast after lumpectomy.
- Adenopathy in supraclavicular, cervical or axillary area.
- Rash or inflammatory changes in the treated breast or chest wall.
- Progressive bone pain and tenderness; may suggest bone metastasis.
- Right upper quadrant pain fullness, weight loss and jaundice; may suggest hepatic metastasis.
- Shortness of breath, cough and pleuritic chest pain; may suggest pulmonary metastasis.
- Headache, altered mental status, new onset seizure and focal neurologic signs; may suggest central nervous system spread.

Each year, about 21,000 women in Canada are diagnosed with breast cancer. Due to effective screening tools and better adjuvant treatments, the mortality rates of those with breast cancer are declining. How to provide effective surveillance for these women is among the issues faced by clinicians today.

The goal of surveillance is to promptly recognize and treat potentially curable recurrences and new primary lesions. In addition, it is an opportunity to screen for therapy-related complications.

The majority of breast cancer recurrences occur in the first five years; however, they can also occur much later. Therefore, the emphasis for followup is in the first five years.

Recurrence of breast cancer can be locoregional, systemic or both. Common sites of systemic relapse are the bones, liver, lungs and the central nervous system (Table 1).

Who should perform the followup?

The primary-care provider, medical or radiation oncologist and surgeon usually provide the followup. One randomized trial has shown no difference in outcome, whether a specialist or a general practitioner provides the followup. An economic analysis of this study and patient satisfaction in terms of frequency and length of visits favoured the group followed by a general practitioner.[1,2] In this trial, however, general practitioners received specialized training for the

Vicki's Situation

- At the age of 42, Vicki was diagnosed with stage II breast cancer with two out of 12 lymph nodes involved with disease.
- She has completed adjuvant chemotherapy and post-lumpectomy radiation therapy.
- She is now on oral tamoxifen.
- She is fearful of this disease coming back.
- Vicki would like to know if surveillance will include routine CT scans, bone scans and tumour markers, in addition to regular physical check-ups and mammography.

What is the answer to Vicki's question?

Vicki is reassured that she would be closely followed-up for relapse, which will include:

- routine history,
- physical examination and
- mammography.

She is informed that tumour markers and other radiologic studies are currently not recommended, as these tests have not been shown to improve survival outcomes at this time.

followup. Therefore, the general practitioner can provide effective follow-up care, provided they are well-versed in follow-up procedures and guidelines.

What are the recommended follow-up procedures?

Patients detect a majority of recurrences themselves, as physicians detect only 15% of relapses.[3] Published guidelines suggest a history and physical examination every three to six months for the first three years after primary therapy and annually thereafter (Table 2). History and physical examination should focus on common areas of relapse. Mammography is less sensitive and specific after breast-conservation surgery, but it can still detect new primary or relapse in the same breast.[4] Mammography is recommended six and 12 months after breast-conservation surgery, as a baseline, then annually. A breast self-examination is encouraged every month; however, data regarding its impact on survival is not available.

Should bone scans, CT scans, other radiologic studies and blood tests be considered as part of surveillance?

Additional tests could detect asymptomatic recurrences, but two large randomized trials fail to show any survival benefit with more intensive surveillance.[5,6] On prospective analysis, no difference was detected in quality-of-life parameters between the two study groups.

Table 2

Guidelines for detecting breast cancer recurrence

American Society of Clinical Oncology guidelines:
- History and physical every three to six months for the first three years; every six to 12 months for the next two years; annually thereafter.
- Monthly breast self-examination.
- Yearly mammography: Women treated with breast-conserving therapy should get post-treatment mammography six months after completion of radiotherapy.
- Regular pelvic examination.

Canadian Medical Association guidelines:
- History and physical every three to six months for the first three years; every six to 12 months for the next two years; annually thereafter.
- Monthly breast self-examination.
- Yearly mammography: Women treated with breast-conserving therapy should get post-treatment mammography six months after completion of radiotherapy.

Not recommended if not indicated clinically:
- Blood counts and routine chemistry studies.
- X-ray chest, bone scans, liver ultrasound, CT scans.
- Tumour markers as CA-15-3 or CEA.

Can tumour markers detect early recurrences?

A number of serum markers are available including CA 15-3, CEA and CA 27.29. None of these have high enough sensitivity or specificity to justify their routine use in surveillance. No studies to date have shown improved overall or disease-free survival with the use of tumour marker measurements. Due to lack of potentially curative therapy for metastatic disease, the potential benefit of detecting asymptomatic recurrences has not materialized and, therefore, the measurement of tumour markers for early detection is not recommended.

Are the surveillance guidelines different for patients with hereditary breast cancer?

Five per cent of patients with breast cancer are known to have germline mutations. The most common mutations are BRCA 1 and 2 mutations. Patients with these mutations tend to have a higher-than-average risk of developing a new breast cancer. The lifetime risk of developing breast and ovarian cancer ranges from 65% to 85%.

Data regarding overall and disease-free survival after treatment of localized breast cancer is controversial, with some studies suggesting a

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similar outcome to sporadic cancers and some suggesting an inferior outcome. Prophylactic bilateral simple or total mastectomy can reduce the risk by 90%.[7] Similarly, prophylactic bilateral oophorectomy can reduce the risk of developing both ovarian and breast cancer.[8]

For surveillance in women who choose no prophylactic surgical options, evidence-based guidelines are not available. Expert panels recommend a self-breast examination every month and a clinical breast exam every three to four months. Mammography is recommended annually, beginning at age 25.[9] MRI of the breast has shown to be more sensitive in this group of patients, especially in the younger age group.[10] However, routine use of MRI is not recommended as, at this stage, data is insufficient to show if increased detections will result in improved survival.

Regular pelvic exams, transvaginal ultrasound and serum CA-125 measurements are suggested twice per year for the early detection of ovarian cancer. However, no overwhelming data is available on the efficacy of these procedures.

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