Breast cancer diagnosis: What are we waiting for?

Pasteur Rasuli

See related article page 277

In a recent study from Quebec,[1] Nancy Mayo and colleagues reported that the waiting times for definitive breast cancer surgery in the province increased 37% between 1992 and 1998, a deterioration they postulate may have resulted from an increased incidence of breast cancer and operating room closures as a result of health care restructuring. The last year of their study period (1998) coincides roughly with the introduction of organized breast cancer screening in Quebec. From their data, it appears that, from 1992 to 1997, the rate of increase in the number of breast cancer surgeries and the median waiting time was relatively steady, at about 4%–5% per year, whereas in 1998 both figures increased threefold. One wonders whether the province's health care system was unable to deal with the sudden rise in breast cancer cases resulting from the screening program.

However, as noted by Mayo and colleagues, the strongest factor associated with the increased waiting times for breast cancer surgery in their study was the number of diagnostic procedures performed between the first screening procedure (usually a mammogram) and the first definitive surgical treatment. The authors question, rhetorically, the need for these additional diagnostic procedures, especially if they delay surgery.

The answer to the question may lie in the large-scale multi-provincial study by Ivo Olivotto and colleagues[2] reported in this issue (page 277). They studied the waiting times during different intervals of assessment of screen-detected abnormalities in women who attended 7 provincial breast screening programs in 1996. The median waiting time from abnormal screening result to first diagnostic imaging was 2.7 weeks (90th percentile 6.1 weeks). From abnormal screening result to final diagnosis it was 3.7 weeks (90th percentile 11.3 weeks); this time increased to 6.9 weeks (90th percentile 15.0 weeks) when a biopsy was required (in most cases open surgical biopsy). When biopsy was performed, the centres that primarily used core biopsy had shorter waiting times from screening to final diagnosis than did the centres that used open biopsy. In addition, Olivotto and colleagues report that breast cancer was diagnosed in only 6.8% of the women with an abnormal screening result. With appropriate additional diagnostic testing the remaining 93.2% should require no surgery.

The use of additional diagnostic procedures has evolved not just to confirm the diagnosis in women with breast cancer but also to prevent the large majority of women who do not have cancer from undergoing unnecessary surgery. For example, ultrasonography confirms the presence of cysts, a frequent mimic of breast cancer detected through mammography and physical examination. Spot magnification views often rule out malignant disease by demonstrating that the suspected abnormality is due to the superimposition of normal fibroglandular structures. Core biopsy provides an accurate tissue diagnosis, differentiating between benign and malignant lesions and between invasive cancer and in-situ cancer, and it enables the replacement of 2-stage surgery for invasive breast cancer (excision followed by re-excision and axillary dissection) with a single operation. The use of preoperative wire localization of microcalcifications or occult masses permits the surgeon to excise nonpalpable breast tumours with precision.

Although only a mammogram and needle biopsy may suffice to diagnose a palpable breast lump, nonpalpable lesions detected by mammography may require the full gamut of preoperative diagnostic procedures to determine whether they are malignant. These additional procedures do increase the waiting time for women found to have breast cancer, but they have the beneficial effect of freeing up scarce surgical resources by removing a large number of women with false-positive results from the surgical waiting list. Rather than bypassing the additional tests in the interest of time, it would be far preferable to expedite accurate diagnosis by streamlining them.

The development of comprehensive breast centres is an effective means of streamlining the management of patients with abnormalities detected through clinical examination or mammography by minimizing the number of visits and decreasing the overall waiting time to final diagnosis.[3,4] Outside of such dedicated centres, the training of radiology technologists to perform combined mammography and breast ultrasonography would permit both examinations to be conducted by the same person at one visit and thus expedite the diagnostic assessment.

As suggested by Mayo and colleagues, a major impediment to the timely diagnosis of breast cancer is a critical shortage of surgical resources. One way around this shortage has been to move breast cancer diagnosis out of the operating room and into outpatient ultrasound and mammography biopsy suites and to replace open surgical biopsy with core biopsy,[5] which, as noted by Olivotto and colleagues, was effective in reducing waiting times in the programs that primarily used this technique. The extension of diagnostic

core biopsy to the complete percutaneous removal of small breast tumours is underway.[6,7] Some advocate that percutaneous removal of small breast tumours be combined with biopsy of the sentinel lymph node, the first intramammary lymph node draining a breast tumour, in order to avoid axillary dissection in patients who have no metastasis.[8]

Despite these advances, the need for breast cancer surgery will continue to escalate as women born after World War II pass their 50th birthday and enter the "breast cancer years." Health care planners take heed!

Dr. Rasuli is with the Department of Radiology, Ottawa Hospital — General Campus, Ottawa, Ont.

Competing interests: None declared.

References

1. Mayo NE, Scott SC, Shen N, Hanley J, Goldberg MS, MacDonald N. Waiting time for breast cancer surgery in Quebec. *CMAJ* 2001;164(8):1133-8. Available: www.cma.ca/cmaj/vol-164/issue-8/1133.asp
2. Olivotto IA, Bancej C, Goel V, Snider J, McAuley RG, Irvine B, et al. Waiting times from abnormal breast screen to diagnosis in 7 Canadian provinces. *CMAJ* 2001;165(3):277-83. Available: www.cma.ca/cmaj/vol-165/issue-3/0277.asp
3. Parker S, Tomaselli MB. Streamlining breast disease management. *J Healthc Resour Manag* 1996;14:23-6.
4. Roux S, Logan-Young W. Private practice interdisciplinary breast centers: their rationale and impact on patients, physicians, and the health care industry: a bicoastal perspective. *Surg Oncol Clin N Am* 2000;9:177-98.
5. Brenner RJ, Bassett LW, Fajardo LL, Dershaw DD, Evans WP III, Hunt R, et al. Stereotactic core-needle breast biopsy: a multi-institutional prospective trial. *Radiology* 2001;218:866-72.
6. Parker SH, Klaus AJ. Performing a breast biopsy with a directional, vacuum-assisted biopsy instrument. *Radiographics* 1997;17:1233-52.
7. Wong AY, Salisbury E, Bilous M. Recent developments in stereotactic breast biopsy methodologies: an update for the surgical pathologist. *Adv Anat Pathol* 2000;7:26-35.
8. Parker SH, Dennis MA, Kaske TI. Identification of the sentinel node in patients with breast cancer. *Radiol Clin North Am* 2000;38:809-23.

Correspondence to: *Dr. Pasteur Rasuli, Department of Radiology, Ottawa Hospital — General Campus, 501 Smyth Rd., Ottawa ON K1H 8L6; fax 613 737-8501; prasuli@ottawahospital.on.ca*