Perioperative Outcomes of Therapeutic Breast Surgery in the Elderly

Dear Editor,

Female Singaporeans currently have a life expectancy of 84.5 years[1] and a lifetime risk of 6.5% of developing breast cancer.[2] It is estimated that by the year 2050, 11.2% of the population will be aged more than 80 years.[3] One in 16 women will develop breast cancer by the age of 80, and there will potentially be 1500 cases of newly diagnosed breast cancer among octogenarians each year.

Surgery is curative in early breast cancer and various centres have reported no difference in the cancer specific survival rates of the elderly age group compared to their younger counterparts, 5 to 10 years after surgery for breast cancer.[4,5] Surgery is also indicated in advanced breast cancer as a form of palliation in patients with fungating and bleeding tumours. Despite its therapeutic role, Lavelle et al[6] found that the proportion of older women receiving surgery fell with increasing comorbidity and many clinicians still do not discuss surgical options with elderly patients.

We wanted to objectively report the postsurgical mortality and morbidity of the very elderly, aged above 80 years in our institution. We also hoped to identify risk factors that may predict for a poorer outcome. To our knowledge, this is the first study in an Asian population.

Materials and Methods

Patients diagnosed with breast cancer after age 80 years, and had therapeutic surgery under general anaesthesia at the National Cancer Centre Singapore (NCCS) and Singapore General Hospital (SGH), between January 1997 and December 2010 were identified.

Functional status was measured in the form of American Society of Anesthesiologists (ASA) physical classification status and Eastern Cooperative Oncology Group (ECOG) score. Outcomes were measured in the form of perioperative morbidity and mortality, length of hospital stay, and incidence of postoperative complications.

Results

A total of 109 females with a mean age of 83.2 years (range, 80 to 96 years) were identified. Ninety-eight (89.9%) patients had at least 1 comorbidity, with hypertension being the most common condition. The majority, 78%, were ECOG 0 or 1, while 75.2% were ASA I or II. Most (59.6%) had early breast cancer of stages I or II (Table 1). Surgery was performed with curative intent in 82.6% of patients. The rest were performed for palliation of symptoms. Ninety-seven (89.0%) patients had a mastectomy while 12 (11.0%) patients underwent wide excision. The median duration of surgery was 90 minutes amongst all patients (range, 30 to 295 minutes) (Table 2).

There were no cases of perioperative mortality in the 30-day period. The median duration of hospitalisation was

Table 1. Patient Demographics, Comorbidities and Disease Stage

Performance Status	No. of Patients (n = 109) (%)
ASA status	
I	5 (4.6%)
II	77 (70.6%)
III	26 (23.9%)
IV	1 (0.9%)
ECOG score	
0	50 (45.9%)
1	35 (32.1%)
2	16 (14.7%)
3	8 (7.3%)
No. of comorbidities	
0	11 (10.1%)
1 – 2	45 (41.3%)
3 – 4	43 (39.4%)
>4	10 (9.2%)
Types of comorbidity	
Hypertension	77 (70.6%)
Dyslipidaemia	32 (29.4%)
Diabetes mellitus	27 (24.8%)
Ischaemic heart disease	22 (20.2%)
Existing or old stroke	16 (14.7%)
Stage of cancer	
0	7 (6.4%)
1 – 2	65 (59.6%)
3 – 4	37 (33.9%)

ASA: American Society of Anesthesiology; ECOG: Eastern Cooperative Oncology Group

Table 2. Operative Details

Surgery	No. of Patients (n = 109) (%)	Duration/Minutes
Type		Mean (range)
Wide excision only	11 (10.1%)	62.5 (35 – 130)
Wide excision and axillary surgery	1 (0.9%)	70 (70)
Mastectomy	11 (10.1%)	82.5 (50 – 135)
Mastectomy and axillary surgery	86 (78.9%)	97.8 (45 – 150)
Intent		
Curative	90 (82.5%)	
Palliative	19 (17.4%)	

Table 3. Surgical Outcomes

Factor	No. of Patients (n = 109) (%)
30-day mortality	
Alive	109 (100%)
Death	0 (0%)
Postoperative relocation	
General ward	96 (88.1%)
High dependency	13 (11.9%)
Intensive care unit	0 (0%)
Length of stay (days)	
1 – 3	11 (10.1%)
4 – 7	45 (41.3%)
8 – 14	43 (39.4%)
>14	10 (9.2%)
Complications	
Nil	66 (60.6%)
Total	43 (39.4%)
After wide local excision	3/12 (25%)
After mastectomy	40/97 (41.2%)
Minor*	40 (36.7%)
Seroma	35 (32.1%)
Bleeding	6 (5.5%)
Wound infection	6 (5.5%)
Major	3 (2.7%)
Acute myocardial infarction	1 (0.9%)
Deep vein thrombosis	1 (0.9%)
Wound dehiscence†	1 (0.9%)

*Some patients had more than 1 complication.
†Patient required repeat surgery.

3 days (range, 2 to 28 days). Two patients stayed beyond 2 weeks due to postoperative deconditioning and required time for placement to a step-down facility (Table 3).

The most common minor complication (32.1%) was the development of a seroma that required needle aspiration. Bleeding and wound infection occurred in 6 (5.5%) patients respectively. Major complications were rare and occurred in only 3 (2.8%) patients. One patient had an acute myocardial infarction, 1 developed deep vein thrombosis, and 1 had wound dehiscence requiring resuturing of surgical wound in the operating theatre.

Among patients without comorbidities, only 1 of 11 (10%) patients developed a complication. This is in comparison to the complication incidence rate in 18 out of 45 (40%) patients with 1 or 2 comorbidities; 19 of 43 (44.1%) of patients with 3 or 4 comorbidities and 5 out of 10 (50%) patients with more than 5 comorbid conditions. Major complications were more likely to happen in those with higher ASA and ECOG scores. Of the 3 patients who had major complications, 1 had an ASA score of II while 2 patients scored III. Two patients had an ECOG score of 2 while the other scored 3. However, when comparing rates of all complications against ASA and ECOG status, there were no statistically significant differences.

Discussion

In the very elderly, surgery under general anaesthesia may pose more risks than yield benefits. Patients and their surgeons often adopt a very considered approach.

Newschaffer et al[7] reported that older women were less likely to receive surgery than their younger counterparts despite adjustments for aggregate comorbidity. However, European studies[8,9] assessing the surgical outcomes amongst elderly above 80 years of age, showed that very elderly patients can still be safely treated with surgery, with acceptable perioperative morbidity and mortality rates.

In our study, 80% of patients had between 1 to 4 comorbidities, consistent with a typical elderly profile.[10] Seventy percent of the patients were of ASA II status, which was reflective of well controlled and mild systemic disease with no functional limitation. Eight in 10 patients had ECOG status less than 2, and were at least ambulatory and able to carry out self-care, if not light work.

We found that elderly women may still have breast surgery safely despite having co-existing medical problems. The 30-day perioperative mortality was 0 and 60% of patients had no complications. Patients with more comorbidities were more likely to develop complications but complication patterns were similar in younger women and were considered minor enough to be managed conservatively.

Although the incidence of complications appear to be higher in elderly patients, less than 5% of our patients had major complications. This was consistent with findings by Chatzidaki et al[8] who reported major complication rates

of 5.7%. The 3 patients who had major complications were not ideal candidates for surgery in view of their medical comorbidities, but we proceeded with palliative mastectomies as they had debilitating symptoms arising from locally advanced tumours. Palliative mastectomy does not shorten survival[11] and can help to improve local control of bulk disease and reduce symptoms. Such patients are often not candidates for palliative chemotherapy, while radiotherapy often provides short-lived relief and has its inherent side effects.[12] In our series, 15% of the patients developed complications after undergoing a palliative mastectomy, and we consider this an acceptable risk considering the lack of better options.

Evron et al[9] illustrated the benefits of surgery, where they found that 101 of 135 (75%) octogenarians were still alive 6 years after diagnosis of breast cancer, and 22 of the 34 (64.7%) deaths were due to non-related conditions. Studies[13,14] showed that fit elderly patients who had surgery —with or without adjuvant tamoxifen—had a significant improved progression-free survival, compared to those who were treated with tamoxifen only.

Surgery plays an important therapeutic role in the treatment of breast cancer, regardless of it being curative or palliative in nature.[15] On the other hand, major complications arising from a curative surgery is undesirable and proper patient selection for surgery should be undertaken. Based on our findings, complications were less likely to occur in patients with less than 4 comorbidities that are well controlled, and if they have performance status of ASA I or II and ECOG score of 0 or I. A limitation of this study was that this was a highly selected group of patients who were expected to do well, as patients who were deemed extremely high risk were unlikely to have been operated on. Nonetheless, at our institutions, patients deemed fit for surgery by surgeons and anaesthetists generally have a good outcome.

Conclusion

Both curative and palliative breast cancer surgery may be performed safely for selected patients aged above 80 years, even in the presence of pre-existing medical problems, with low morbidity.

REFERENCES

1. Department of Statistics, Singapore. Population Trends 2013. Available at: http://www.singstat.gov.sg. Accessed on 14 July 2015.
2. Teo MC, Soo KC. Cancer trends and incidences in Singapore. Jpn J Clin Oncol 2013;43:219-24.
3. Saw Swee-Hock. Implications of demographic trends in Singapore. In: Ooi Kee Beng, editor. ISEAS Perspective: Selections 2012-2013. Singapore: Institute of Southeast Asian Studies; 2013.
4. Herbsman H, Feldman J, Seldera J, Gardner B, Alfonso AE. Survival following breast cancer surgery in the elderly. Cancer 1981;47:2358-63.
5. Hunt KE, Fry DE, Bland KI. Breast carcinoma in the elderly patient: An assessment of operative risk, morbidity and mortality. Am J Surg 1980;140:339-42.
6. Lavelle K, Downing A, Thomas J, Lawrence G, Forman D, Oliver SE. Are lower rates of surgery amongst older women with breast cancer in the UK explained by co-morbidity? Br J Cancer 2012;107:1175-80.
7. Newschaffer CJ, Penberthy L, Desch CE, Retchin SM, Whittemore M. The effect of age and comorbidity in the treatment of elderly women with non-metastatic breast cancer. Arch Intern Med 1996;156:85-90.
8. Chatzidaki P, Mellos C, Briese V, Mylonas I. Perioperative complications of breast cancer surgery in elderly women (≥80 years). Ann Surg Oncol 2011;18:923-31.
9. Evron E, Goldberg H, Kuzmin A, Gutman R, Rizel S, Sella A, et al. Breast cancer in octogenarians. Cancer 2006;106:1664-8.
10. Yancik R, Ganz PA, Varricchio CG, Conley B. Perspectives on comorbidity and cancer in older patients: approaches to expand the knowledge base. J Clin Oncol 2001;19:1147-51.
11. Rapiti E, Verkooijen HM, Vlastos G, Fioretta G, Neyroud-Caspar I, Sappino AP, et al. Complete excision of primary breast tumor improves survival of patients with metastatic breast cancer at diagnosis. J Clin Oncol 2006;24:2743-9.
12. Dulley LF, Li S, Ah-See MW. Efficacy of hypofractionated palliative radiotherapy in locally advanced breast cancer. Clinical Oncology 2001;23:S35-6.
13. Hind D, Wyld L, Reed MW. Surgery, with or without tamoxifen, vs tamoxifen alone for older women with operable breast cancer: Cochrane review. Br J Cancer 2007;96:1025-29.
14. Mustacchi G, Ceccherini R, Milani S, Pluchinotta A, De Matteis A, Maiorino L, et al. Tamoxifen alone versus adjuvant tamoxifen for operable breast cancer of the elderly: long-term results of the phase III randomized controlled multicenter GRETA trial. Ann Oncol 2003;14:414-20.
15. Dordea M, Jones R, Nicolas AP, Sudeshna S, Solomon J, Truran P, et al. Surgery for breast cancer in the elderly – how relevant? Breast 2011;20:212-4.

Chee Meng Lee, [1]*MBBS, MRCS (Ireland)*, Veronique KM Tan,[2]*MMed (Surgery), MSc, FRCSEd*, Benita KT Tan, [2]*FRCS Ed (Gen Surg), FAMS, PhD (SSHSPH, NUS)*, Preetha Madhukumar, [2]*MBBS, FRCSG*, Wei Sean Yong, [2]*FRCSEd, FRCS (Glasg), FAMS*, Chow Yin Wong, [2]*FRCS (Edin), FRCS (Glasg), FAMS*, Kong Wee Ong, [2]*FRCSEd, PhD (Bristol), FAMS*

[1]Department of General Surgery, Singapore General Hospital, Singapore
[2]Singhealth Duke-NUS Breast Centre, National Cancer Centre Singapore, Singapore

Address for Correspondence: Adj Asst Prof Ong Kong Wee, Singhealth Duke-NUS Breast Centre, National Cancer Centre Singapore, 11 Hospital Drive, Singapore 169610.
Email: ong.kong.wee@nccs.com.sg