

Early Hospital Discharge Following Breast Cancer Surgery in the West Indies: a Trinidad Study

Vijay Naraynsingh, FRCS; Rakesh Rambally, MBBS; Ravi Maharaj, FRCS; Dilip Dan, FACS; Seetharaman Hariharan, MD, FCCM

Purpose: To examine the outcome of a policy of early hospital discharge (<24 hours) after breast cancer surgery in a Third World setting, where health care resources and support services are very limited.

Design: Prospective enrollment into a plan of early hospital discharge within 24 hours following breast surgery. Follow-up was conducted for wound infections; seroma formation; flap dehiscence; and readmission, if any.

Subjects: All patients over a 15-year period who underwent wide local excision or mastectomy and axillary clearance were enrolled.

Results: A total of 331 patients were entered into the study. Of these, 148 had modified radical mastectomy and 183 had wide local excision plus axillary dissection. Each patient had a drain placed and output was recorded. Follow-up revealed that there was no increase in the complication rates.

Conclusion: Early hospital discharge following breast cancer surgery is a feasible option for most patients and can be safely implemented even in a resource-limited setting where cost containment is essential.

Keywords: breast cancer ■ Third World

J Natl Med Assoc. 2011;103:xxx-xxx

Author Affiliations: Department of Clinical Surgical Sciences, The University of the West Indies, St Augustine, Trinidad.

Correspondence: Dilip Dan, FACS, Department of Clinical Surgical Sciences, The University of the West Indies, Address, St Augustine, Trinidad (dtilipdan5@gmail.com).

INTRODUCTION

The number of breast cancer operations is constantly growing worldwide due to the steady rise in the number of women diagnosed with this cancer. This increase has financial implications even in the developed world. In England and Wales, there was a 37% increase in the number of breast cancer surgeries performed between 1997 and 2006. In Trinidad and Tobago, we have recorded a steady increase in the number of deaths from this disease over a 35-year period.¹ The cost implications of this increase have led to reduction in the length of stay

following breast cancer surgery. It is a well-accepted fact that the most important complication limiting early hospital discharge following breast cancer surgery is the formation of wound seromas. Notwithstanding this fact, over the past 2 decades, there have been many publications advocating early discharge following breast cancer surgery.²⁻⁸ However, almost all these papers have been published from the developed world, where good communication, home support, visiting nurse service, and outpatient care are well established. In a Caribbean island without any such support, 15 years ago, we embarked on a plan to discharge breast cancer surgery patients within 24 hours of surgery. The present paper analyses the outcome of early hospital discharge following breast cancer surgery in an attempt to determine the safety of this procedure in a developing world setting.

METHODS

All patients having either mastectomy or wide local excision (WLE) and axillary clearance were prospectively entered into a plan for early hospital discharge, within 24 hours of surgery. These patients were appropriately advised preoperatively about early hospital discharge and were prepared well. They were told that they will be discharged from the hospital with a drain in the surgical wound and were also requested to be accompanied by a responsible relative so that they could be taught regarding the management of the drain at home. The patient relative was also requested to record the volume of drainage from the drain on a daily basis. Prior to discharge, both the patient and the relative were taught shoulder exercises. The patient and/or the relative were asked to call the surgeon or return to the hospital if they were doubtful of any untoward patient occurrence such as increasing drainage; pain; foul smell; bleeding; constitutional symptoms such as fever, etc. Patients were invariably reviewed by the surgeon on day 10 for assessment of the drain and possibility of its removal. They were again seen by the surgeon on day 14 for assessing the wound, suture, and removal of drain if it was still in situ. Volume of discharge from the drain, the total duration of drainage, and complications relating to the drain were documented up to 28 days post operatively.

RESULTS

Over a 15-year period (1994-2008), 331 consecutive female patients were entered into this study. Twenty-one other patients having immediate flap reconstruction were excluded. Eight others who had come from another island and could not go home the next day were also excluded. Level II axillary clearance was performed in 315 and level III in 16 cases. WLE was done in 183 and mastectomy in 148. All patients had a single 18 Fr tube drain inserted into the axilla and connected to a closed suction system (Jackson-Pratt). In 16 patients where the WLE site did not communicate with the axillary clearance, a separate passive drain was inserted at that site; this was routinely removed on the fourth postop day with dressing changes as required. All patients were given a 5-day course of amoxicillin/clavulanic acid or ciprofloxacin if allergic to penicillin.

Five patients had leakage around the drain site that required dressing changes. In 6 cases, the drain dropped out at home: 2 at day 2, 3 at day 3, and 1 at day 7. Five of these required repeated aspirations. Two hundred eighty-two had the drain removed on day 10, 38 on day 14, and 5 on day 18. Nine of these—8 in the mastectomy and 1 in the WLE group—required repeated aspirations: 2 from the axilla, 5 from the mastectomy site, and 2 from both. The mean number of aspirations was 2.6 per patient and ranged from 15 to 28 days. Five patients developed moderate sepsis in the fluid collection; 2 were cured by aspiration only and 2 by open drainage (as outpatients) and antibiotics. One patient required readmission for 2 days with open wound drainage and sepsis due to *Staphylococcus aureus*. The other 4 did not have a positive culture from the aspirate. Nine patients had minor flap necrosis managed with outpatient dressings, but 2 others had sufficient necrosis to require debridement and resuturing as a same day procedure.

The mean hospitalization was 23 hours (range, 8-94 hours). Four patients stayed in the hospital for 3 days for management of comorbidities—cardiac, diabetes, and hypertension.

DISCUSSION

Breast cancer is the most common cancer and cause of death in the adult female population,⁹ with the incidence of invasive breast cancer continuing to rise both worldwide and in our Trinidadian population.^{1,10,11} Surgery remains the initial treatment for breast cancer in most cases and as the world population continues to grow and age, so too does the burden of breast cancer. At present, the resources required for health care continue to rise.¹² Therefore, as the surgeon's practice evolves to improve patient care, so too must the management of scarce resources. In the Third World, bed space in particular is very limited.

Ambulatory breast cancer surgery has been part of an established protocol in North America since the 1990s but has not gained widespread acceptance in

Europe or in the Third World.^{13,14} In a study from India with a policy of early discharge, they were only able to discharge 33% of their patients within 48 hours.¹⁵

With advances in adjuvant, neoadjuvant, and surgical technique, there has been a shift from the aggressive Halstedian approach to more conservative breast preservation procedures.³ Axillary lymphadenectomy permits locoregional control, staging, and prognostication.¹⁶ With advances in minimally invasive procedures and pathological assessment of nodal disease, there has been, in some centers, a shift from axillary clearance to sampling or sentinel node biopsy.¹⁴

Such changes in the standard of care for invasive breast cancer allow for earlier discharge following surgery for breast cancer. These modifications along with surgeon preferences and hospital policies have led to a decrease in length of stay following breast cancer surgery.¹⁷ Whilst noting that the length of stay has been declining over the last 30 years, it is widely accepted that there are considerable variations in practice.¹⁷ Factors identified as increasing the length of stay have been the experience of the surgeon, the extent of lymph node dissection, breast reconstruction, and the presence of comorbidities.¹⁷

Early studies on short hospital stay in breast cancer surgery focused on surgical complications and especially on axillary surgery since this was responsible for most of the major postoperative complications.^{5,8,16-20} Whilst these studies did not include same-day discharge, they demonstrated that the trend to earlier discharge did not compromise patient safety, had low complication rates, good patient satisfaction, and possible psychosocial benefits.^{3,8,15-17}

There is no evidence to suggest that earlier discharge leads to increased seroma formation, but the data indicate that same-day axillary surgery can be performed safely, resulting in cost reduction.⁸ Our experience is in keeping with the literature. Although our patients had the usual complications of seroma formation, wound infection, and flap necrosis, most of these were within acceptable rates and the majority managed in the outpatient setting. Since multiple aspirations and repeated hospital visits are demanding both on the patient and the hospital, we err on the side of leaving the drain for a longer time. Previously, the length of stay was decreased by discharging with Jackson-Pratt drains,^{21,22} but it has been shown that definitive breast cancer surgery can even take place in an ambulatory setting.²³

The commonest complications associated with same-day discharge and reasons for readmission or failure to be discharged within 24 hours were pain, intractable vomiting, and anxiety.¹³ We opted to keep our patients overnight as their access to care for allaying any of these concerns would be limited.

There is, however, lack of level I evidence supporting same-day surgery for breast cancer, as the number of studies and participants involved is small and there is no

good quality-of-life data and no clear consensus on pre-assessment criteria.¹³

The success of ambulatory breast surgery depends on careful preparation and education of the patient, home care giver, family members, and staff. It is imperative that preoperative preparation (both anesthetic and surgical) be an integral part of any ambulatory protocol. This includes counseling by mastectomy support group and nursing staff in addition to the surgeon and referring physician. We did not believe that same-day discharge would be practical in our setting. Our preassessment included counseling, optimization of comorbidities, and arrangements for family support at home.

The cost-effectiveness of early discharge in breast cancer surgery is well documented.^{2,24,25} Other advantages include earlier ambulation and arm mobility, faster healing and recovery at home, and good patient satisfaction. Family participation in the patient's early discharge facilitates understanding and prevents patient isolation. The home support system negates against a maladaptive sick role and contributes to rapid recovery.²⁶ Patients may also feel a sense of control over their illness.² In our setting, patients are more confident for discharge when, by the next morning, they are ambulant, not vomiting, and fairly independent.

Two main differences (apart from cost-saving elements) point to a clear advantage for same-day surgery. These are earlier return to a normal life and psychological adjustment.^{6,27} We do not believe that an overnight stay adversely affects these. The "downstream" effects of patient satisfaction include a lower incidence of nausea and vomiting and better tolerance of subsequent chemoradiation. It is believed that a positive psychological outcome alters the perception of the disability throughout the rest of treatment.²⁷

Early discharge in definitive breast cancer surgery can be safely done in most settings if effective communication and patient support are established pre and post operatively.³

CONCLUSION

Early discharge following surgery for invasive breast cancer does not lead to an increase in the incidence of wound infection or seroma formation. Its cost-effectiveness has been favored by managed care stakeholders for decades. Early discharge is also associated with high levels of patient satisfaction and faster healing and recovery at home. Whilst there are no randomized controlled trials, the growing body of retrospective data makes early discharge for most patients the procedure of choice. Even in a Third World setting, this practice can be safe and effective provided that good family support, education of the caregivers, telephone contact, and ready access to a hospital for assessment are established.

REFERENCES

- Naraynsingh V, Hariharan S, Dan D, et al. Trends in breast cancer mortality in Trinidad and Tobago—a 35-year study. *Cancer Epidemiol.* 2010;34:20-23.
- Manus SA, Topp DA, Hopkins C. Advantages of outpatient breast surgery. *Am Surg.* 1994;60:967-970.
- Hoehn JL. Definitive breast cancer surgery as an outpatient: a rational basis for the transition. *Semin Surg Oncol.* 1996;12:53-58.
- Bonnema J, van Wersch AM, van Geel AN, et al. Medical and psychosocial effects of early discharge after surgery for breast cancer: randomised trial. *BMJ.* 1998;316:1267-1271.
- Bundred N, Maguire P, Reynolds J, et al. Randomised controlled trial of effects of early discharge after surgery for breast cancer. *BMJ.* 1998;317:1275-1279.
- Margolese RG, Laxy JC. Ambulatory surgery for breast cancer patients. *Ann Surg Oncol.* 2000;7:181-187.
- Dooley WC. Ambulatory mastectomy. *Am J Surg.* 2002;184:545-548.
- Alhey N, Gilliam AD, Sinha P, et al. Day-case breast cancer axillary surgery. *Ann R Coll Surg Engl.* 2005;87:96-98.
- Parkin DM, Muir CS. Cancer Incidence in Five Continents. Comparability and quality of data. *IARC Sci Publ.* 1992;120:45-173.
- Parkin DM, Bray F, Ferlay J, et al. Global cancer statistics, 2002. *CA Cancer J Clin.* 2005;55:74-108.
- Parkin DM, Fernández LM. Use of statistics to assess the global burden of breast cancer. *Breast J.* 2006;12 suppl 1:S70-80.
- Swambe K. MPAT happy over more \$\$ for health. *Trinidad Express.* September 9, 2010.
- Marla S, Stallard S. Systematic review of day surgery for breast cancer. *Int J Surg.* 2009;7:318-323.
- Von Smilten K. Surgical management of breast cancer in the future. *Acta Oncol.* 2000;39:437-439.
- Deo SV, Shukla NK, Goel Ak, et al. Short stay surgery for breast cancer: an audit of an experience in a regional cancer centre in Northern India. *Eur J Surg Oncol.* 1997;23:335-338.
- Cabanès PA, Salmon RJ, Vilcoq JR, et al. Value of axillary dissection in addition to lumpectomy and radiotherapy in early breast cancer. The Breast Carcinoma Collaborative Group of the Institut Curie. *Lancet.* 1992;339:1245-1248.
- Downing A, Lansdown M, West RM, et al. Changes in and predictors of length of stay in hospital after surgery for breast cancer between 1997/98 and 2004/05 in two regions of England: a population-based study. *BMC Health Serv Res.* 2009;9:202-210.
- Cohen AM, Schaeffer N, Chen ZY, et al. Early discharge after modified radical mastectomy. *Am J Surg.* 1986;151:465-466.
- Purushotham AD, McLatchie E, Young D, et al. Randomized clinical trial of no wound drains and early discharge in the treatment of women with breast cancer. *Br J Surg.* 2002;89:286-292.
- Chadha NK, Cumming S, O'Connor R, et al. Is discharge home with drains after breast surgery producing satisfactory outcomes? *Ann R Coll Surg Engl.* 2004;86:353-357.
- Holcombe C, West N, Mansel RE, et al. The satisfaction and savings of early discharge with drain in situ following axillary lymphadenectomy in the treatment of breast cancer. *Eur J Surg Oncol.* 1995;21:604-606.
- Orr RK, Ketcham AS, Robinson DS, et al. Early discharge after mastectomy. A safe way of diminishing hospital costs. *Am Surg.* 1987;53:161-163.
- Goodman AA, Mendez AL. Definitive surgery for breast cancer performed on an outpatient basis. *Arch Surg.* 1993;128:1149-1152.
- Detmer DE, Gellins AC. Ambulatory surgery. A more cost-effective treatment strategy? *Arch Surg.* 1994;129:123-127.
- Edwards MJ, Broadwater JR, Bell JL, et al. Economic impact of reducing hospitalization for mastectomy patients. *Ann Surg.* 1988;208:330-336.
- Shimozuma K, Ganz PA, Petersen L, et al. Quality of life in the first year after breast cancer surgery: rehabilitation needs and patterns of recovery. *Breast Cancer Res Treat.* 1999;56:45-57.
- Dooley WC. Ambulatory breast cancer surgery. *Ann Surg Oncol.* 2000;7:174-175. ■