The Breast 27 (2016) 169–174

Contents lists available at ScienceDirect

The Breast

journal homepage: www.elsevier.com/brst

Original article

Surgical treatment of breast lesions at a Day Centre: Experience of the European Institute of Oncology

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ARTICLE INFO

Article history:
Received 10 February 2016
Received in revised form
30 March 2016
Accepted 3 April 2016
Available online 25 April 2016

Keywords:
Breast cancer
Day surgery
Outpatient surgery

ABSTRACT

Breast cancer is the commonest malignancy in women worldwide. The reduced aggressiveness of breast cancer surgery has made it possible treat patients in the day surgery setting. The European Institute of Oncology, Milan, opened its new Day Center in May 2010. From May 2010 to December 2014, 17,087 patients with breast conditions were treated by the Institute's Division of Senology, 4132 (24.2%) of these in the day surgery setting, including malignant and benign conditions; 204 (4.9%) were not discharged on the day of surgery, being converted to inpatients; five (0.1%) patients returned to hospital for persistent hematoma.

Our experience of performing breast cancer surgery in the day surgery setting is in line that of the literature. It is safe, but requires a well-organized unit and multidisciplinary medical team to function smoothly, with much attention paid to patient comfort and education, so as to ensure maximum patient acceptance and satisfaction.

Introduction

Breast cancer is the most common malignancy in women worldwide [1]. In 2013 over 52,000 Italian women received surgery for breast cancer [2]. Many received breast-conserving surgery, which has largely replaced mastectomy as standard treatment for early breast cancer, since it is characterized by equivalent survival, but better cosmetic outcomes and quality of life, with low risk of local recurrence, provided the residual breast is irradiated [3,4]. Sentinel lymph node biopsy (SNB) began to be used in the 1990s and quickly became the standard approach to the axilla in breast cancer patients with clinically negative axillary nodes, since this minimally-invasive approach accurately stages the axilla yet permits avoidance of axillary dissection if the sentinel node is negative [5–7].

The reduced aggressiveness of breast cancer surgery has made it possible treat patients in the day surgery setting. In day surgery, as the name implies, the patient is sent home the same day as the surgical treatment, with no overnight stay [8]. Day surgery arose from the need to reduce health care costs while maintaining treatment quality [9,10]. Early discharge is also appreciated by patients [11]. Randomized trials of early discharge after breast cancer surgery show quicker physical and psychological recovery [12–14], lower costs [15,16] and negligible adverse effects on the careers of the involved health professionals [17]. The great majority of day surgery patients are discharged as planned, the main reasons for discharge failure being intractable vomiting, patient anxiety, and inadequate pain control [18].

Other studies indicate that this fast track approach to breast surgery is safe, with no increase in complications, readmissions, re-operations, or emergencies [19,20]. Shorter stay also preserves quality of care as perceived by the patient [21], although full patient

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http://dx.doi.org/10.1016/j.breast.2016.04.002
0960-9776/

acceptance is predicated on the provision of adequate information [22].

Day surgery is extensively used in the North America to treat breast cancer [18], but is still in its infancy in Europe. In Italy in 2014 the average hospital stay for patients undergoing breast-conserving surgery was 2.7 days [2]. The aim of the present paper is to report and analyse experience of day centre surgical treatment for breast lesions at the European Institute of Oncology (EIO), Milan, starting from the opening of the new Day Center (1st May 2010) and concluding 31st December 2014.

Materials and methods

The EIO opened its new outpatient surgery building (Day Center) in May 2010. The new building is adjacent to the existing building but functions autonomously and was designed to provide day care services only. It consists of a reception area, 39 examination rooms, 4 outpatient surgery rooms, 5 endoscopy rooms, 5 nuclear medicine rooms, a 16-room ward with 32 beds, and an operating block with 5 operating theatres and a recovery room. There is also a mobile linear accelerator for intraoperative radiotherapy (IORT) with electrons. A complete pathology service is available throughout the day including intraoperative frozen section assessment of sentinel nodes. The Center is open Monday to Friday, 7 am to 8 pm.

Patients scheduled for elective breast surgery in the IEO's Division of Senology started being screened for day surgery eligibility as soon as the Day Center opened. Patients with the following conditions were eligible: monolateral, bilateral, or multiple fibroadenoma; phylloides tumour; ductal papilloma; suspicious microcalcifications not suitable for microhistologic evaluation; unicentric or multifocal breast cancer with a clinically negative axilla; and DIN/LIN.

Selection criteria were:

- Scheduled for conservative surgery (lumpectomy or quadrantectomy); clinically negative axilla scheduled for SNB.
- Anaesthetic risk categories ASA I–II, or ASA III for stable comorbidities unaffected by the surgical procedures. Advanced age, diabetes, asthma, obesity (up to BMI <35 kg/m^2), sleep apnoea (if postoperative opioids not programmed) and epilepsy were not exclusion criteria [23].
- Availability of a person to accompany the patient home and remain with her the first night; patient contactable by telephone; patient's residence (home, hotel) within 60 min of the hospital.
- Patient able to understand the operation and its requirements, comply with advice given by the physician, have acceptable personal hygiene, and a suitable lodging.

During the first consultation, the surgeon verified that the patient met Day Center inclusion criteria, and if so suggested treatment in the Day Center setting. Further examinations (e.g. mammography, ultrasound, MRI, needle biopsy, micro-biopsy) were then arranged.

One or more days before Day Center admission the patient presented for preoperative assessment involving routine tests (e.g. blood tests and resting ECG, when indicated from questionnaire responses [24]) anaesthetic and surgical evaluation, and extensive history-taking. The anaesthetist evaluated anaesthetic risks, confirmed the type of anaesthesia proposed by the surgeon (local, general or monitored anaesthesia care, MAC) and obtained consent for anaesthesia. The surgeon reviewed the examination results, decided the surgical procedure in consultation with the patient, and obtained informed consent for day surgery. A nurse provided counselling, and full information on pre-operative preparation, post-operative course (medications, pain control, drain management), and problems that could arise and how to manage them. A booklet explaining the procedures and requirements was given to all patients. Occult lesion localization, or lymphoscintigraphy for SNB, were carried out either the day before surgery (in outpatient regime) or on the morning of surgery.

At the Day Center, the surgical team received the patient and checked that all preoperative examinations had been performed. Anaesthetic care, airways management and safety standards were as for inpatients [25,26]. Although most patients were given general anaesthesia, MAC could be given depending on type of surgery and patient consent, since it facilitates fast recovery and early discharge with low incidence of postoperative side effects [27–30]. Antibiotic prophylaxis was not usually given; anti-thrombotic prophylaxis was given if the patient had risk factors for thrombosis [31]. Antiemetic medication was given if indicated. Drains were usually used in patients undergoing axillary dissection, and whenever considered necessary by the surgeon.

After a period of observation in the recovery room the patient was transferred to her bed in the ward where a small meal was served. Patients who had received axillary dissection were seen by a physiotherapist who explained and demonstrated lymphoedema-preventing exercises to be performed starting the next day. A booklet explaining the exercises was also provided.

Adequate postoperative analgesia – mandatory for successful day surgery – was ensured using multimodal opioid-sparing techniques [32] shown to improve recovery and outcomes after short admissions [33,34].

Before discharge, patients were assessed for vital signs, pain, nausea, vomiting, dizziness, bleeding, walking and dressing, using the modified Postanesthesia Discharge Scoring System (PADSS) [35]. A minimum PADSS score of 9 was required for discharge. If the patient scored below 9 she was moved to a normal ward and the admission was no longer in Day Center regime.

Patients confirmed for discharge received a standard discharge report also specifying the date and time of next check-up, and acetaminophen pills with instructions for their use. All instructions were reviewed by the nurse who also ensured that someone was present to accompany the patient home and stay with her for the night. All discharged patients received a phone call on the evening of discharge and also the morning after, to check for problems. Patients were also given a 24 h call-centre number and told to telephone if they experienced problems. The call centre is manned by trained nurses who can provide over-the-phone advice and can contact the on-call surgeon if necessary. The first check-up a few days after surgery concluded the Day Center program. Data on discharge delays, readmissions, postoperative pain/discomfort, and patient satisfaction were collected for all patients.

Results

From May 2010 to December 2014, 17,087 patients with breast conditions were treated at the IEO's Division of Senology: 4132 (24.2%) of these were treated in the Day Center, comprising 1747 (42.3%) who received lumpectomy only; 112 (2.7%) SNB only; 747 (18.1%) quadrantectomy only; 1253 (30.3%) quadrantectomy plus SNB; 151 (3.6%) quadrantectomy plus SNB and axillary dissection; 85 (3.0%) who received other surgical procedures; and 37 patients admitted but discharged without surgery: 7 for organisational reasons, 25 for patient indisposition (illness), 4 for medical reasons (3 for a change in lesion echogenicity) and 1 for last minute patient refusal. There were 1776 operations for benign disease, 495 for DIN/LIN (in situ), and 1824 for breast cancer.