



## Breast cancer surgery in an ambulatory setting

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### ABSTRACT

**Aim:** To evaluate the feasibility and efficacy of outpatient surgery for early breast cancer in an Italian ambulatory setting and to assess its benefits.

**Patients and methods:** A review of 88 women treated for breast cancer from an outpatient facility was undertaken from July 2003 to December 2006. The patients were selected for ambulatory surgery according to specific social, environmental, physical and oncological criteria.

**Results:** Eighty-eight women underwent a total of 107 surgical interventions in an ambulatory setting. Sixty out of the eighty-eight patients (68%) received a one-day conclusive surgical treatment, and the remaining 28 patients were promptly treated in two phases. Among this latter group, 18 patients (68%) were treated only in an outpatient facility, whereas the other 10 patients require reintervention with hospitalization. There were no intraoperative complications. In the postoperative period, 14 complications were observed: 6 wound infections, 3 hematomas, 1 axillary seroma and 4 readmissions. The patients' readmissions were due to nausea and emesis in one case, dyspnoea in another case, and only two readmissions were due to surgical complications (hematoma in both cases). Patients that were interviewed exhibited a high level of satisfaction from the treatments they received.

**Discussion:** This study confirms the feasibility, efficacy and safety of the outpatient setting regime, which is highly appreciated by women and is more cost effective than surgery in a hospital setting.

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## 1. Introduction

Breast cancer is the most frequent malignant neoplasm in women. In Italy, one out of eleven women develops breast cancer in her life. Breast cancer surgery has radically changed over the last decades with mammography screening programs more readily available and the advent of conservative interventions, such as quadrantectomy and sentinel lymph node biopsy. Furthermore, conservative surgery has reduced both early and late postoperative complications, as well as psychological implications of the disease.

In the last decade, mostly in the USA and Western Europe, various clinical studies have been carried out to verify the feasibility, efficacy and complications of ambulatory quadrantectomies, axillary lymphadenectomies, simple or radical modified

mastectomies and sentinel lymph node biopsies (SLNB).<sup>1–6</sup> These reports have encountered favorable results, confirming the safety of the approach and an acceptable complication rate that is similar to an inpatient setting regime. Also, there has been an increasing consensus within the population for this approach.<sup>7</sup> Outpatient surgery represents a precious and safe alternative only when performed in a context in which the patient is accurately prepared preoperatively and strictly controlled postoperatively. Furthermore, breast cancer surgery, when it is superficial and does not imply any significant bleeding or electrolyte shifts,<sup>8</sup> represents a good choice for ambulatory surgery.

## 2. Materials and methods

From July 2003 to December 2006, 484 women underwent breast cancer surgery at the Department of Surgical Sciences, University of Insubria in Varese, Italy. Of these, 396 women were treated in the hospital and the remaining 88 patients were selected for ambulatory surgery.

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Selection criteria were as follows:

- 1) Social criteria of the patient: sufficient hygiene and the ability to match pre and postoperative prescriptions.
- 2) Social criteria of the environment: residing no more than 30 min from the hospital; possessing a telephone and having the support of a responsible caretaker at home.
- 3) Physical criteria of the patient: age under 75; absence of morbid obesity or pathologic thinness; absence of a history of addiction to alcohol, drug or tobacco; ASA 1 or 2.
- 4) Oncological criteria of the patient: conservative intervention without reconstruction; cT1cN0 with high probability of a negative sentinel lymph node.

A preliminary visit was scheduled, where the surgeon selected the patient for the one-day surgical procedure based on the previously mentioned inclusion criteria.

An informed consent was obtained from the patient and a detailed information sheet was then provided, which also included telephone numbers of the ward.

Preoperative exams (chest X-ray, electrocardiography, blood sample) and staging procedures (abdomen ultrasound and bone scintigraphy) were coordinated by nurses and performed in a prepared ambulatory setting.

The day before the surgical intervention the patient was invited to undergo a psychological counseling session to assess her expectations and the impact of her outpatient treatment.

The same day the patient was taken to the Department of Nuclear Medicine for sentinel lymph node (SLN) mapping with 99mTc radioisotope: the scintigraphic images were obtained 15 and 30 min after the injection. In case of nonpalpable breast lesions, the injection of 99mTc radioisotope followed radioguided occult lesion localization (ROLL) by stereotactic localization of the tumor.

On the day of the surgery the patient arrived after fasting for at least 6 h. The evening before she was advised to take a bath or shower after accurate self-epilation of the axilla.

Surgical intervention was performed following standard techniques.

Radioguided surgery was used both for quadrantectomies of nonpalpable lesions and for SLNBs. Postoperative observation was for at least 5 h, after which the patient was evaluated by both the surgeon and the anesthesiologist (Table 1).

The patient was discharged the evening of the same day, and should any complications arise the surgeon then promptly organized admission of the patient to the hospital.

The day after the surgery, the patient was invited to the Center to change the dressing and remove any eventual surgical drainage. Drains were removed if less than 40 ml had accumulated during the previous 24 h.

A second counseling session with the same psychologist took place one to two weeks later to assess the patient's feelings on the day of surgery, the immediate postoperative course, her satisfaction

of the outpatient setting regime and the eventual matching of her preoperative expectations.

Charts of the patients were then reviewed retrospectively to assess operative procedures, completion times, operative duration and the time of discharge.

### 3. Results

From July 2003 to December 2006, 484 women underwent surgery for breast cancer at the Department of Surgical Sciences, University of Insubria in Varese, Italy. Of these, 396 (82%) were treated in the hospital and the average hospitalization of these patients was 5.4 days (range: 3–12 days). The remaining 88 women (18%) were treated as outpatients. The average age of these patients was 58 years (range: 32–74 years). Of these 88 women, a total of 107 surgical interventions were performed. Details of the surgical procedures are illustrated in Table 2.

All surgical interventions were performed under general anesthesia. The mean procedure time was 88 min, ranging from 40 to 180 min.

At the beginning of this study, axillary staging (SLN biopsy) was performed before definitive breast cancer surgery. Later, the decision was made to offer the woman the option of a potential definitive procedure as an outpatient. Hence, 44 cases of quadrantectomy and SLN biopsy were performed at the same time in an outpatient facility.

In 10 cases, the patients underwent quadrantectomy without SLNB due to the fact that the preoperative pathologic examination (performed on a micro biopsy with mammatome) showed carcinoma *in situ* (7 of ductal and 3 of lobular type). Of this group, in one case final pathology report showed carcinoma *in situ* with foci of microinvasion, necessitating SLNB to be performed as an additional staging procedure.

In total, 78 SLNBs were performed. Preoperative SLN identification rate was 100%. Only in 1 out of 78 SLNB the intraoperative identification of SLN failed, necessitating an axillary lymphadenectomy and quadrantectomy to be performed at the same time. Among the successfully performed SLNBs, 57 cases had only one SLN and of the remaining 20 cases more SLNs were dissected: 2 SLNs in 14 cases and 3 SLNs in 6 cases.

All patients who underwent a quadrantectomy procedure were discharged with closed system suction drainage, which was considered simple for the patient to empty.

There were no intraoperative complications. In total, 14 postoperative complications were observed: 6 wound infections, 3 hematomas, 1 axillary seroma and 4 readmissions. The 4 readmissions were due to nausea and emesis in one case, dyspnoea in another, and only two readmissions were due to surgical complications (hematoma in both cases).

Seventy-three out of eighty-eight women (83%) had a final pathology report showing invasive mammary carcinoma (59 ductal, 6 lobular, 3 tubular, 2 ductal microinvasive, 1 ductal and lobular, 1 apocrine and 1 mucinous) and two cases of invasive

**Table 1**  
Surgical discharge criteria for the patients.

Surgical discharge criteria for the patient		
1. Stable vital signs	Yes	No
2. Oriented to space and time	Yes	No
3. Able to consume water and food	Yes	No
4. Able to spontaneously pass urine	Yes	No
5. Surgical dressing clean and in order	Yes	No
6. Absence of bleeding signs	Yes	No
7. Absence of complication signs	Yes	No
8. Autonomous motility	Yes	No
9. Presence of a responsible caretaker	Yes	No

**Table 2**  
Types of surgical interventions.

Type of surgical intervention	Number of surgical procedures
Quadrantectomy + SLNB	69
Quadrantectomy	16
Axillary lymphadenectomy	10
SLNB	8
Excision of malignancy recurrence	2
Widening of margins	1
Quadrantectomy + axillary lymphadenectomy	1

ductal carcinoma were local recurrences. *In situ* breast cancer was found in 15 out of 88 patients (17%): 12 were ductal and 3 were lobular carcinoma *in situ*.

With regard to the extent of the invasive tumors, two cases were staged as pTmic, 7 as pT1a, 25 as pT1b, 32 as pT1c and 7 as pT2.

In three out of eighty-three patients, the resection margins of the specimens were involved by carcinoma necessitating re-intervention to achieve surgical clearance. In total, 4 surgical procedures were performed: 2 mastectomies and 2 widening of the margins. In particular, in one case the re-intervention (widening of margins) was performed in an ambulatory setting, whereas in another case involving widening of the margins the re-intervention was not sufficient due to the extensive involvement by ductal carcinoma *in situ* and a mastectomy was performed in a prompt second phase.

Among the subgroup of 69 patients who underwent breast cancer surgery and SLNB simultaneously (see Table 2), final pathology report showed metastatic SLN in 17 cases (25%). Of these, 10 had a subsequent complete axillary dissection again in an ambulatory setting and the pathology report showed that the SLN was the only metastatic axillary lymph node. In the remaining 52 women (75%), cancer was radically removed with only one surgical procedure.

Psychological postoperative evaluation of the outpatient setting regime was performed on 20 out of 88 women. Of these, 19 patients expressed a high level of satisfaction with the treatment, and in only one case did a woman expressed dissatisfaction because of readmission the day after the original intervention.

#### 4. Discussion

Ambulatory surgery represents a new prospective in surgical treatment of breast cancer, which has been widely present in the Anglo-Saxon medical environment since the early 1990s, and has not been yet popular in the Italian setting.

Notwithstanding the feasibility, patients' satisfaction and lowering of costs, in Italy outpatient surgery has not yet produced a strong decrease in hospital admissions for breast cancer surgery.<sup>9,10</sup> This may be the result of the Italian culture and the "need of caring" of Italian patients, as well as the surgeon's input: to change the patient's setting from inpatient to outpatient cannot occur in Italy without the surgeon's influence at almost every juncture. The manner in which options for surgery are presented will often influence the patient's decision. The lack of enthusiasm of many Italian surgeons is the major reason why outpatient breast surgery is not performed.

Although the outpatient setting regime has largely been the product of economic concerns, there have been many reports in literature that corroborate the safety of early discharge and the feasibility of an outpatient process.

Breast cancer surgery is relatively simple, without major bleeding, fluid or electrolyte shifts or significant complications.<sup>11</sup> Furthermore, in the last decades a less invasive approach to breast cancer surgery has occurred with the development of conservative treatment such as quadrantectomies and SLNBs. These new and less invasive techniques allow some to perform surgery on early breast cancer cases in an outpatient setting.<sup>12</sup>

One of the most relevant elements of the outpatient regime is the beneficial quality of life for outpatients in comparison to inpatients. In our series, psychological counseling showed that the majority of the interviewed patients were satisfied with the surgical treatment received and would not stay longer in a hospital setting.<sup>13</sup>

The key to patient acceptance of the proposed outpatient regime is the manner in which the subject is presented.

In our series, 60 patients received final surgical treatment in a one day procedure and 28 patients were treated in two phases. Among this latter group, 18 patients were treated in an outpatient environment, and the other 10 underwent re-intervention in an ordinary hospital regime. With the exception of wound infections, the rate of complications was low and minor, from which the women soon fully recovered.

#### 5. Conclusion

In conclusion, the results of this study confirm the feasibility, efficacy and safety of the outpatient setting regime, and the satisfaction of treated women, corroborating previously published literature.<sup>1–15</sup>

Understanding the economic debate with regard to Health Care in Italy, the results derived from this study strongly suggest that Italian surgeons should initiate this proposed outpatient regime for early breast cancer. However, to achieve this challenging goal it is necessary to have dedicated space, enthusiastic personnel and an appropriate manner in which options for outpatient surgery are presented, all of which may influence the patient's decision.

#### Conflict of interest

None declared.

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None.

#### Ethical approval

None.

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