Breast cancer surgery in a day case setting: Where do the Netherlands stand in 2004?

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Abstract

To assess to what extent day case surgery for breast cancer is practised in the Netherlands a questionnaire was sent to 105 surgeons/hospitals. In 2004, 30% of the hospitals performed minor and 3% performed major breast cancer surgery in a day case setting. Sixteen percent of the hospitals indicated planning to introduce day case surgery for minor and major breast cancer surgery. The basic requirements for this development are widely available. Potential obstacles can be overcome by adjustments in organisation, logistics and financial reimbursement, thus making day case surgery available to more patients while reducing health care costs.

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1. Introduction

Breast cancer is the most common cancer among women in the Netherlands with 11,300 new cases per year in 2000 [1]. Most of these women undergo surgical treatment during a hospital admission with a mean length of stay (LOS) of 4.1 days in 2003 [2]. Hospital admission is one of the largest cost contributors in the total treatment of breast cancer [3,4].

The introduction of the sentinel lymph node procedure reduced the invasiveness of the surgical treatment for breast cancer for a large part of the breast cancer patient population thus reducing the need for clinical care. In addition, the introduction of specialised breast care nursing (BCN) facilitated adequate pre, peri and postoperative education and counselling of patients. Positive results from studies assessing day case and ultra-short stay on feasibility, emotional well-being and safety in other countries and health care systems [5–7] led to the development of a fast track breast cancer surgery programme in our hospital in 2001. Introduction of the programme reduced the mean LOS from 3.7 days in June 2000 to 1.1 days in 2002. Forty-six percent of the cases were performed in a day case setting and a further 35% was discharged after an overnight stay (unpublished data). Subsequently, this fast track breast cancer care programme became daily practice.

Key elements in this care programme are a well-organised care process, with surgical and anaesthetic care according to modern standards, with a prominent role for the breast care nurse giving extensive education and counselling to the patient and informal carer, on wound and drain management, on physical activity and independence, emphasizing the advantages of home recovery and coordinating outpatient, inpatient and home care.

An increasing number of hospitals expressed their interest in copying the programme. To what extent breast cancer surgery in a day case setting is performed in Dutch hospitals in 2004, is unknown.

Neither is it known to what extent the above key elements are being practised outside a comprehensive fast track care programme. The aim of this study was to evaluate the current practice of breast cancer care in view of the implementation of day case surgery and to give an insight into the willingness...
to introduce this together with the real or perceived obstacles when organising day case surgery for breast cancer in the Netherlands.

2. Patients and methods

For evaluation of the current state of breast cancer care key elements for a successful day case surgery programme were identified. To that end items describing general aspects of organisation of breast cancer care were defined. These are preoperative (presence of a breast unit, BCN or NP, education and counselling), perioperative (anaesthetic screening and anaesthetic techniques, logistics concerning the sentinel lymph node procedure and image guided localisation, type of surgeon performing the surgery, length of hospital stay) and postoperative aspects of care (availability and degree of home care nursing facilities). Perceived obstacles and necessary conditions when organising day case surgery were recorded.

A written questionnaire was developed consisting of 32 multiple choice and open questions. For answers on incidence it was recorded if they were based on estimates or on actual data base figures. The questionnaire was sent to the surgeon most involved with breast cancer treatment employed in the surgical units of 105 hospitals performing breast cancer surgery. They were asked to complete the questionnaire in cooperation with the breast care nurse, if available. Reminders were sent one month later, followed by a telephone call to the surgeon or breast care nurse 2 months later.

3. Results

Seventy-six of the 105 questionnaires were returned. Table 1 shows the number and percentages of returned questionnaires in relation to the type of hospital.

Table 1
Number and percentages of returned questionnaires

<table>
<thead>
<tr>
<th></th>
<th>Numbers sent</th>
<th>Numbers returned</th>
<th>Numbers returned (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>University hospitals (UH)</td>
<td>8</td>
<td>7 (87%)</td>
<td></td>
</tr>
<tr>
<td>Teaching hospital (TH)</td>
<td>39</td>
<td>31 (79%)</td>
<td></td>
</tr>
<tr>
<td>Non-teaching hospital (NTH)</td>
<td>58</td>
<td>38 (66%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>105</td>
<td>76 (72%)</td>
<td></td>
</tr>
</tbody>
</table>

* No significant difference (p=0.075).

3.1. Preoperative

Eighty-five percent (65/76) of the hospitals have a breast unit. Fig. 1 shows the services that are available within the breast unit as advised by the Dutch guidelines (based on the BASO guidelines) [8]. Multidisciplinary outpatient consultation was available in less than a third of the hospitals.

A breast care nurse or nurse practitioner (NP) was absent in two hospitals. In 11 hospitals, both BCN and NP were available. In all cases, the BCN and/or NP was introduced to the patient preoperatively. The degree in which the different aspects of the job specification of the BCN and NP were fulfilled varied widely (Table 3). Communication with and education of the patient concerning the diagnostic process, treatment options and surgical procedures were in most cases performed by the surgeon as well as the BCN or NP. This verbal information was supported by leaflet information in 75/76 hospitals.

3.1.1. Perioperative

In 89% of the hospitals, it was possible for anaesthetists to screen patients preoperatively in an outpatient setting. Generally, all types of surgical procedures varying from excision biopsies to modified radical mastectomy were performed under general anaesthesia. In very few hospitals, the excision biopsy, (re)lumpectomy and sentinel lymph node procedure were performed under local anaesthesia (2, 1 and 2 hospitals, respectively).

The organisation of the sentinel lymph node procedure and image guided localisation are described in Table 2.

In 3% of the hospitals, breast surgery is exclusively performed by breast surgeons (>50 primary breast cancer surgery procedures per annum), in 14% breast surgery is performed by the general surgeon and in 30% of the hospitals breast surgery is performed by the general surgeon and breast care nurse.

3.1.2. Postoperative

In 76/105 (73%) of the hospitals, breast care nurses were responsible for postoperative care. This was in line with the guidelines that breast care nurses are the optimal person to care for patients after breast surgery.

In 94 (90%) of the hospitals, breast care nurses were introduced to the patient preoperatively.

However, in 24% of the hospitals it was not possible to organise a home care nursing facility in 1 month after discharge. In 67% of the hospitals, it was possible to organise a home care nursing facility in 2 months after discharge.

The use of home care nursing facilities varied widely between hospitals and was related to the availability of personnel. Hence, this aspect of care may need further improvement.
surgery is performed by the surgical oncologist or breast surgeon [9]. In the remaining hospitals breast surgery is performed by a combination of the breast surgeon, surgical oncologist and general surgeon.

The mean estimated LOS was 1–2 days in 5% of the hospitals, 2–3 days in 26%, 3–4 days in 29%, 4–5 days in 17% and 5–6 days in 11%. For the remaining 12% the LOS was not disclosed. Fourteen percent of the data was retrieved from databases.

3.1.3. Postoperative
In addition to the surgeon, the specialised nurses (BCN or NP) played an important role in giving psychosocial support to the hospitalised patient. In 5/76 hospitals, a general nurse on the nursing ward had this task. In 59/76 (78%) hospitals, patients were discharged with a telephone number that could be reached 24 h a day.

Supportive care at home by the home care organisation for uncomplicated wound care, drain care or psychosocial support is not available after discharge in 11/76 (15%) hospitals. In 38/76 (50%) hospitals, all three care aspects can be offered. Home care nursing is available the evening of discharge after day case surgery in 9/65 hospitals, in 14/65 hospitals it is available the day of discharge and in 29/65 it is available the day after discharge. In 4/65 hospitals, home care nursing is available at the specific request of the patient or at a later point in time. Nine times the question remained unanswered. Home care nursing is in 7/65 performed by a nurse specialised in breast cancer care and in 46/65 cases by non-specialised nurses. The question was not answered 12 times.

3.2. Day case surgery
In 2/76 hospitals, simple mastectomy with or without sentinel lymph node biopsy (SLNB) or an axillary lymph node dissection (ALND) with or without breast conserving surgery (BCS) is generally performed in a day case setting. Modified radical mastectomy (MRM) was usually not performed in a day case setting (Table 4).

3.2.1. Obstacles and necessary conditions for success
Table 5 shows the most frequently perceived obstacles for breast cancer surgery in a day case setting. Six surgeons did not answer the question.

<table>
<thead>
<tr>
<th>Type of surgery generally performed in a day case setting</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excision of benign breast lesions</td>
<td>75</td>
<td>1</td>
</tr>
<tr>
<td>Excision biopsy suspect for breast cancer</td>
<td>65</td>
<td>8</td>
</tr>
<tr>
<td>(Re)lumpectomy and SLNB</td>
<td>54</td>
<td>21</td>
</tr>
<tr>
<td>(Re)lumpectomy and ALND</td>
<td>23</td>
<td>52</td>
</tr>
<tr>
<td>ALND</td>
<td>2</td>
<td>72</td>
</tr>
<tr>
<td>SM</td>
<td>1</td>
<td>75</td>
</tr>
<tr>
<td>SM and SLNB</td>
<td>2</td>
<td>74</td>
</tr>
<tr>
<td>MRM</td>
<td>0</td>
<td>76</td>
</tr>
</tbody>
</table>

- Question was answered with not applicable/type of surgery is not performed.
At the time of the questionnaire, 12/76 surgeons had actual plans to start day case surgery for all types of surgical procedures for breast cancer. Fifty-seven surgeons indicated necessary conditions for success. Most frequently mentioned conditions for success were: good organisation of after care and home care (n = 18), extensive education, counselling and perioperative care (n = 14), organisational and logistical adjustments and fine tuning (n = 10), guaranteed patient satisfaction and the patient being allowed to choose to be discharged or not (n = 9), inclusion of patients with low co-morbidity scores, only inclusion of lumpectomies with SLNB, and simple mastectomies (SM) with SLNB or less and adequate pain control (n = 7), (simple mastectomy/axillary dissection/direct reconstructions) (n = 4) and financial compensation for introducing day case surgery (n = 4).

### Table 5

<table>
<thead>
<tr>
<th>Problem</th>
<th>Frequency, n=70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drain</td>
<td>20</td>
</tr>
<tr>
<td>Major wound surface</td>
<td>18</td>
</tr>
<tr>
<td>Postoperative pain management</td>
<td>14</td>
</tr>
<tr>
<td>Complication (e.g., infection)</td>
<td>12</td>
</tr>
<tr>
<td>None</td>
<td>11</td>
</tr>
<tr>
<td>Other</td>
<td>17</td>
</tr>
<tr>
<td>Sentinel lymph node procedure–image guided localisation–operation schedule–combination</td>
<td>10–6–6–5</td>
</tr>
<tr>
<td>None</td>
<td>12</td>
</tr>
<tr>
<td>Infrastructure for education and counselling</td>
<td>9</td>
</tr>
<tr>
<td>Home care nursing</td>
<td>5</td>
</tr>
<tr>
<td>Other (nine aspects)</td>
<td>9</td>
</tr>
<tr>
<td>Unreliable home situation/singles–older patient</td>
<td>13–10</td>
</tr>
<tr>
<td>Counselling during hospitalisation</td>
<td>18</td>
</tr>
<tr>
<td>Fear, emotional well-being and coping problems</td>
<td>13</td>
</tr>
<tr>
<td>Wish or expectation of patient or relative</td>
<td>11</td>
</tr>
<tr>
<td>Wound confronted</td>
<td>6</td>
</tr>
<tr>
<td>Other (12 aspects)</td>
<td>18</td>
</tr>
</tbody>
</table>

**Psychosocial problems with breast cancer surgery in a day case setting**

It is essential to make an inventory of the current practice of all involved disciplines and to identify real and perceived obstacles as well as promoting factors for the individual health care professional, the social environment and the health care system [10]. For the current survey the surgeons were chosen as the target group, as they are the coordinators of care during the diagnostic process and the primary treatment of breast cancer. This makes the surgeon the most important initiator of innovations of the care process. Without his cooperation implementation of day case surgery is doomed to fail.

Using a questionnaire for data collection may introduce a selection bias together with a risk of having estimates rather than actual figures. These aspects should be taken into consideration while interpreting the results.

Surgeons indicated that intramural and extramural education and counselling of the patient is the most important factor in introducing day case surgery. Breast care nurses and specialised nurse practitioners are very well capable to address these aspects of care and are already available in most hospitals. The current involvement of the BCN and the home care nursing organisation in the care process of the breast cancer patient is very diverse and in many cases insufficient for day case surgery. To facilitate day case surgery BCN’s in many hospitals should spend more time with the patient and should be given more responsibilities. To provide continued quality of care the home care organisation should entail updated specialised care from the moment of discharge onwards. Finding adjustments in the reimbursement system could also contribute to the implementation of day case surgery.

Patient satisfaction is frequently stated as an important factor for success in day case surgery. Improvement of patient care and satisfaction is one of the strongest motives for health care professionals to change practice. Despite the fact that the literature suggests that day case surgery patients are happier, recover sooner, are better socially adjusted and show an improved emotional well-being compared to hospitalised patients, day case surgery is often not perceived as an improvement for the patient, mainly because of the fear of emotional distress [6,7,11–14].

The most frequently mentioned medical problems associated with day case surgery are discharge with a drain, risk of complications and pain in the home situation. Various studies describe different solutions to the drain problem: sending the patient home with a drain but with adequate preoperative education and counselling, adequate nursing support at home, axillary padding or simply not using a drain after an ALND [5,6,15–21]. Furthermore, no increase in complication rate is seen after day case surgery and postoperative pain is often adequately controlled with local wound infiltration and oral analgesics [7,18,22–24]. The majority of the unplanned admissions are caused by postoperative nausea and vomiting. With ongoing anaesthetic improvements these postoperative complaints may decrease [18]. Although it is often arbitrarily stated that surgical procedures in the day case setting should not last more than 1 h, in our experience procedures up to 2 h present no difficulties.

### 4. Discussion

In 2004, breast cancer surgery is mainly practised in an inpatient clinical setting. Minor surgery, e.g., lumpectomies and lumpectomies with SLNB, are performed in, respectively, 71 and 30% of the hospitals in a day case setting, but major breast surgery (SM, ALND and MRM) is only rarely performed in a day case setting. The survey indicates that there is an interest in day case surgery for all types of breast cancer surgery.

For successful implementation of day case surgery in all Dutch hospitals, a thorough analysis should include patients, health care professionals and the context of the care process.
are more keen to recover [6,16]. Furthermore, sick leave of
tiation, tend to downgrade the seriousness of the operation and
hospitalised patients [7]. Patients feel in control of the situa-
tion, to downplay the seriousness of the operation and
are more keen to recover [6,16]. Furthermore, sick leave of
patients is shorter if treated in an outpatient setting [7,26].

The vast majority of the medical, organisational and
psychosocial problems feared by surgeons when starting
ambulatory breast cancer surgery can be resolved. The
basic infrastructure that is required for day case surgery,
the breast unit, is available in most hospitals, albeit that the
contribution of both the BCN and district nurse in the care
process should be expanded. With the patient at the centre
of the care process and with a well-organised team, day case
surgery will be accessible for a larger number of patients
while at the same time reducing health care costs.

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References

[1] Visser OSS, van Dijk JAAM, editors. Incidence of cancer in the
Netherlands 1999/2000. Utrecht: Vereeniging voor Integraal kanker-
onderzoek; 2003.
Breast cancer: better care for less cost. Is it possible? Int J Technol
WK. Estimates of the lifetime costs of breast cancer treatment in
[5] Kambouris A. Physical, psychological, and economic advantages of
accelerated discharge after surgical treatment for breast cancer. Am
[8] Rutgers EJ, Poter JC, NABON-Nota: De organisatie van diagnos-
tiek en behandeling van mammopathologie in Nederland 1999.
[9] EUSOMA. The requirements of a specialist breast unit. Eur J Cancer
[10] Grol RWJ. Implementatie Effectieve veranderingen in de
in situ (DCIS) of the breast using wide local excision with sentinel
[14] Chock IA, Kent 3rd RB. One-day hospitalization following modified
[16] Goodman AA, Mendez AL. Definitive surgery for breast cancer per-
[discussion, 658–9].
[20] Cloose JM, Deper PF, Francois T, Robard S, Theard JL, Dr创办t
F. Axillary packing as an alternative to closed suction drain for
ambulatory axillary lymphadenectomy: a prospective cohort of 207
[discussion, 173].
MS. Axillary lymphadenectomy for breast cancer without axillary
[22] Dey SV, Shukla NK, Goyal AK, Khosre J. Short stay surgery for
breast cancer: an audit of an experience in a regional cancer centre
[23] Seltzer MH. Partial mastectomy and limited axillary dissection per-
formed as a same day surgical procedure in the treatment of breast
[24] Burke CC, Zakab CL, McCaVor KJ, Singley SE. Patient satisfac-
tion with 23-hour “short-stay” observation following breast cancer
[26] Lindquist R, Stonebeck M, Dalsner CH. Does hospital discharge
policy influence sick-leave patterns in the case of female breast can-