Preventing Lymphedema for the Post-Mastectomy Patient with Papilla Gown and Education

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Aim

To determine whether patients with stages two and three breast cancer who wear Papilla Gown and have education describe their lymphedema incidence as lower than that of patients who wear the typical hospital gown and the typical education.
What is already known about this topic

• Immediately after mastectomy, patients experience a number of physiological and psychological problems that may include discomfort and later complication of lymphedema.
What is already known about this topic

- During recovery, patients experience restricted range of motion of their arm due to pain (a) at the surgical incision, (b) to the drain placed in the wound, and (c) to the drainage bag(s). These drains remain in place for approximately 1 to 2 weeks following surgery.
What is already known about this topic

- Early upper body exercise and movement following surgery is vital to increase mobility and comfort and to reduce lymphedema.
- Lymphedema is swelling in the arm due to compromise of the lymphatic drainage by surgery or radiation treatment following surgery.
What is already known about this topic

- Post-mastectomy patients’ dresses with back zippers or gowns that tie in the back are inappropriate.

- The drainage tubes from the surgical site can be a major source of discomfort and anxiety for the post-mastectomy patient.
Education is basic to developing an understanding of what to expect after breast surgery and how to better care for oneself, including comfort and activity measures.
What this study adds

A unique clothing for post-mastectomy patients that would help address such issues and thereby facilitate transition to recovery is needed.
What this study adds

- The Papilla Gown’s special design offers support of the drainage tubes while allowing for easier movement.

- Personal Education for Postoperative exercises and self-care can reduce the fear of arm immobility and the pulling sensation of drains.
The Papilla Gown
Care of the Drain
Post-Breast Cancer Surgery
Lymphatic System

www.lymphnotes.com
Lymph Node, Duct, BLD Vessels
What is Lymphedema?

www.lymphnotes.com
The closed wound drainage system used for breast cancer patients immediately following mastectomy requires external drainage tubes that connect to a reservoir.
Front Perspective View of a Postmastectomy Patient’s Body with the placement of Jackson-Pratt (JP) drain.

©Cho & Paek, 2006
Background

The incidence of secondary lymphedema to be 14-28% after breast cancer treatment. The risk of lymphedema increased with (a) the reduction of physical activity, (b) the removal of a greater number of axillary nodes, and (c) the use of radiotherapy to the axillary nodal basin (Arrault & Vignes, 2006).
The safety pins that are usually used to attach the drains to the patient’s gown create problems such as fear that the tubes will be dislodged due to tangling or pins popping open and discomfort due to pulling.
Methods: Design

- use a 2 x 2 factorial design that includes the independent variables of (a) Papilla Gown (b) education focused on immediate post-mastectomy care.
<table>
<thead>
<tr>
<th></th>
<th>Gown</th>
<th>No Gown</th>
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</thead>
<tbody>
<tr>
<td>Education</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>No Education</td>
<td>C</td>
<td>D</td>
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</table>
Methods: Sample

- Four samples of mastectomy patients (N=30, 45, 28, and 42) were randomized to the experimental interventions (Education only, Papilla Gown only, Education/Papilla Gown) or control. 145 mastectomy patients participated (time 1) and Forty six (32%) were completed at Time 2.
Methods: Sample

- Criteria for inclusion are: informed consent, age range between 18 and above, ability to speak and read English, and planned drain (surgical tube) insertion.
Methods: Sample

- Exclusion: A diagnosis of organic brain disease or a preexisting disorder affecting functional ability of the involved arm or lymphatic system excludes participants from the study.
Methods: Measure

- The demographic data, BC knowledge, and tape measurement for the edema

- Schipper’s Functional Living Index Cancer (FLIC) is available in 22 languages, 22-item instrument
Methods: Measure

- Instructed to complete BC knowledge and FLIC, at clinics postoperatively 7 days and 6 months.
- A tape measure was used to measure arm size to determine circumference at seven days before and at 6 month after surgery.
Methods: Measure

- Four group samples of mastectomy patients (N=30, 45, 28, and 42) were randomized to the experimental interventions (Education only, Papilla Gown only, Education/Papilla Gown) or control.
CONSORT diagram of participant flow

1. Enrollment
   - Assessed for Eligibility (N=191)
     - Declined (n=11)
       - Not interested (n=8)
       - Felt too burdensome (n=3)
   - Randomized (n=180)

2. Allocation
   - Control (n=45)
     - Completed Base (n=44)
     - Completed T1 (n=42)
     - Completed T2 (n=15)
   - Papilla Gown Intervention (n=45)
     - Completed Base (n=45)
     - Completed T1 (n=45)
     - Completed T2 (n=12)
   - Education Intervention (n=45)
     - Completed Base (n=35)
     - Completed T1 (n=30)
     - Completed T2 (n=13)
   - Papilla/education Intervention (n=45)
     - Completed Base (n=28)
     - Completed T1 (n=28)
     - Completed T2 (n=13)

3. Follow-Up
   - Analyzed (n=12)
   - Excluded (n=3)
   - Analyzed (n=12)
   - Excluded (n=0)
   - Analyzed (n=11)
   - Excluded (n=2)
   - Analyzed (n=11)
   - Excluded (n=2)
Methods: Interventions

- The education sessions were held one week prior to surgery and one week after surgery at the hospital oncology clinics.
- The treatment groups received a pictorial handbook based on Care after Surgery including lymphedema.
Methods: Interventions

- Teaching Module for Care after Surgery for Breast Cancer
  - Pain control.
  - Drain care with a special gown.
  - Lymphedema management.
  - Arm position with two *Reach to Recovery exercises for mobility.
Methods: Intervention

- Papilla Gown were given one along with instructions on how to wear it.
- were asked to wear it at least 7 days following their surgery.
Methods: Analysis

- A mixed-model repeated-measures approach for longitudinal data to explore the association between three outcome variables and the predictive variables (i.e., education, gown, time, and gown-education interaction).
Methods: Analysis

- To examine statistical significance at each time point after surgery, 2-way ANOVA was performed on each outcome and tape measurement.
The mean age of the sample (N=145) was 55 years old. Majority of women were married and had at least a high school education.
# Results

## Characteristics of the women population

### Marital status

<table>
<thead>
<tr>
<th>Status</th>
<th>Count</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Married</td>
<td>81</td>
<td>55.9%</td>
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<tr>
<td>Single</td>
<td>29</td>
<td>20.0%</td>
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### Race

<table>
<thead>
<tr>
<th>Race</th>
<th>Count</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>African American</td>
<td>67</td>
<td>46.2%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>46</td>
<td>31.7%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10</td>
<td>6.9%</td>
</tr>
</tbody>
</table>
Results

- the patients who received the Papilla Gown and the educational program had increased physical activity ($P=0.026$) and cancer knowledge ($p=0.001$).
The lymphedema arm measure score significantly increased for participants who did not wear the Papilla Gown (p < 0.01)
Figure 1. There was a significant increase in arm circumference for the no Papilla gown group.
The designed Papilla Gown and the education show promise for increasing the activity and less lymphedema incidence of the post-mastectomy patient with a closed drainage system.
Implications

- Papilla Gown assists women recovering from a mastectomy to easily dress with comfort and style and still manage the necessary drainage system.
Implications

- The findings can be used to increase awareness of nurses and other health care professionals of the specific needs of post-mastectomy patients.
An added advantage is that although the Papilla Gown is specially designed for the mastectomy patient, the gown can be redesigned to facilitate JP drains for patients undergoing abdominal, chest, or pelvic surgeries.
The Papilla Gown