

Factors Related to the Occurrence of Lymphedema in Breast Cancer Patients

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Abstract. Since prevention or early treatment is important in the management of lymphedema, the factors related to its occurrence needed to be identified. The incidence of lymphedema increased when the stage of cancer was higher and duration of the postoperative period increased, but there was no relation between lymphedema and the type of treatment, type of surgery, or the patient's lymphedema education. Because there are both large variations in the incidence of lymphedema and the reported predictors of lymphedema, a study that includes various participants and factors such as nursing intervention such as patient education and counseling, specific points of the disease process, and cultural differences is needed.

Keywords: breast cancer, education, lymphedema

1 Introduction

Lymphedema results from an abnormal accumulation of high molecular weight substances in the subcutaneous space or skin, and it negatively affects smooth lymphatic movement, resulting in functional problems. Symptoms of lymphedema include swelling, decreased joint flexibility, pain, tightness, and other symptoms. Patients with lymphedema may need to change jobs or have a diminished social life due to restriction of arm use. Because of this, patients with lymphedema can experience emotional problems such as depression or anger [1]. Lymphedema is difficult to cure and commonly recurs [2], so prevention or early treatment is important. There is a large variation in the incidence of lymphedema (2–65%), and there have been varied conclusions concerning the predictors of lymphedema, which include type of surgery, history of axillary lymph node dissection, type of treatment, body mass index, patients' education, health condition, and age [3-6]. Therefore, an additional study of factors relating to the occurrence of lymphedema is needed.

2 Method

2.1 Design and Subjects

This study was designed to identify factors that affect the occurrence of lymphedema in breast cancer patients. The subjects were 125 breast cancer patients who had undergone breast surgery.

2.2 Procedure

In a questionnaire, these patients reported general characteristics, presence of lymphedema, lymphedema education, anxiety, depression, frequency of lymphedema prevention practices, and knowledge of lymphedema. After obtaining informed consent, the patients' medical characteristics were obtained from electronic medical records.

2.3 Instruments

Knowledge of lymphedema was assessed with 28 items [7]. The Hospital Anxiety and Depression Scale (HADS), consisting of 14 items [8], was used to assess anxiety and depression. National lymphedema guidelines [9] were used to identify lymphedema prevention practices.

2.4 Data Analysis

Data analysis was performed using the IBM SPSS Statistics version 20.0 software package. Descriptive statistics were used to describe the characteristics of participants. Logistic regression analysis was used to identify the factors related to the occurrence of lymphedema. The statistical significance threshold was 0.05.

3 Results

Logistic regression analysis was performed to identify factors related to the occurrence of lymphedema. Lymphedema was found to occur 4.036 times more often in patients with higher than stage II breast cancer than in patients with lower stages of cancer (95% CI = 1.636–9.958, $p = .002$). As the duration of the postoperative period increased by 1 month, the occurrence of lymphedema increased by 1.011 times (95% CI = 1.001-1.020, $p = .023$). Patients who had undergone mastectomy and patients who had received no lymphedema education had a 2.161 and 2.194 times higher incidence of lymphedema, respectively, but there was no significant statistical difference.

4 Discussion

According to recent studies, radiation therapy is considered a factor related to the occurrence of lymphedema [3-5, 10]. However, there are varied results concerning other associated factors, including age, stage of cancer, type of surgery, history of axillary lymph node dissection, number of removed lymph nodes, type of treatment, or history of lymphedema education. In this study, the incidence of lymphedema increased as the stage of cancer was higher and duration of the postoperative period increased, but there was no relation between lymphedema and type of treatment, type of surgery, or lymphedema education. However, patient education was a predictor of lymphedema occurrence [10]. Therefore, a study that includes various participants and factors such as nursing intervention (for example patient education and counseling), specific points of the disease process, and cultural differences is needed.

5 Conclusion

We identified some factors related to the occurrence of lymphedema. Because the postoperative period extended from immediately after surgery to 18 years following surgery, extraneous variables are likely to be involved. It is difficult to assess the causal relationship between education and lymphedema occurrence because some patients were educated before surgery and some were not. Therefore, either a study that considers the treatment process or an intervention study is needed.

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