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EFFECT OF EXERCISES ON EARLY REMOVAL OF SURGICAL DRAINS AMONG POST MASTECTOMY PATIENTS

Divya Thomas[1*] and Simple Rajagopal[2]

[1]Lecturer, Department of Medical Surgical Nursing, Samaritan College of nursing, Pazhanganad, Ernakulam Dt, Kerala, India.

[2]Associate professor cum HOD of Department of Medical Surgical Nursing, Lourdes College of Nursing, Kakkanad, Ernakulam Dt, Kerala, India.

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ABSTRACT

Mastectomy is the surgical procedure to treat breast cancer. Shortening the hospital stay has been shown to be an effective way of reducing the cost of surgery for breast cancer and axillary lymph drainage tubes are the main obstacle in achieving it, because the patients with suction drains in situ are managed in the hospital. *Aim:* The present study is aimed to assess the effect of post mastectomy exercises for the early removal of surgical drains among post mastectomy patients. *Objectives* of the study were to assess the amount and characteristics of surgical drainage in experimental and Control groups as measured by observation check list, to identify the effectiveness of post mastectomy exercises on early removal of surgical drains among patients who have undergone mastectomy in experimental group in terms of reduction in the amount of drainage and to determine the association between the effectiveness of exercises in post mastectomy patients with selected demographic variables. *Methodology:* The quantitative approach with pretest posttest control group design was selected for this study. The study samples consisted of 60 post mastectomy patients, with 30 in experimental group and 30 in control group. Simple random sampling technique was used to select the sample from the selected hospital. *Results:* The t value obtained is 32.101 at 0.05 levels significant in the experimental group and in the control group the value was 24.2. The total difference in pre test score and post test score mean value for experimental group (17) is greater than the pre and post test difference mean value for control group (9.033). So the mean additional difference in experimental group is 7.9. So it is inferred that after the experiment the experimental groups have a reduction in the drain and were removed surgical drainage early compare to control group.

INTRODUCTION

Cancer, the multi-disease phenomenon is one of the frequent causes of death. It is time to halt the inexorable path of human suffering and to find a logical and pragmatic approach to control the impact of cancer [1]. Breast cancer is one of the most common cancers diagnosed in women and perceived as a fatal problem. About 1 in 8 U.S. women develops invasive breast cancer over the course of her lifetime [2]. By 2020, the incidence of breast cancer in developing nations like India is

Corresponding Author

Divya Thomas
Email:- divyaliza@gmail.com

expected to be double [3].

Mastectomy, the surgical removal of one or both breasts is usually done to treat breast cancer. Each Post mastectomy patient was managed with Hemovac closed suction drainage with two catheters from one suction device after mastectomy. The catheters were inserted into the chest wound at the end of operation. Drains were retained until the total output was less than or equal to 30 ml [3].

Seroma formation is the most common complication following mastectomy. Excessive fluid production at the site of surgery can result in seroma formation, and inadequate drainage of seromas is known to cause infection, pain, discomfort and longer periods of hospitalization [4]. Postoperative exercises given to maintain movement of the arm are believed to increase the amount of fluid drainage following surgery. This review aimed to determine whether a program of exercises reduces the risk of seroma formation and hospital stay [5].

A Suction drain reduces the incidence of post operative seromas, which is recognized as the most serious complication of modified radical mastectomy. Prolonged suction drainage on the other hand, may increase the hospital stay and increase the risk of infection by allowing retrograde migration of bacteria [6]. Indiscriminate or premature withdrawal of postoperative drains irrespective of the amount of fluid drained may be accompanied by an increase in the incidence of axillary seromas. If kept for longer periods it has been observed that drain itself might contribute to increased drainage and the risk of infection in addition to the increased hospital stay resulting in to wasteful utilization of the hospital resources [7].

Suction drains are generally removed once the lymph production falls to less than 35–50 ml/24 hours; a level generally reached between 3–17 days after surgery. Shortening the hospital stay has been shown to be an effective way of reducing the costs of surgery for breast cancer and axillary drains are the main obstacles in achieving it. Postoperative exercises given to maintain movement of the arm are believed to increase the amount of fluid production following surgery [8]. This study aimed to determine whether a program of exercises reduces the risk of seroma formation, fluid loss and hospital stay, without loss of arm movement.

METHODOLOGY

The quantitative approach with pretest posttest control group design was selected for this study. A sample of 60 post mastectomy patients who met the inclusion criteria were selected from the target population. Simple random sampling technique was used to select the sample from the selected hospital. The setting of the study was at Lourdes Hospital, Ernakulam. The population comprised of patients who underwent mastectomy. The tool used in this study is a baseline proforma and observation check list on surgical drainage.

Inclusion criteria

In this study the inclusion criteria were:

- Women between the age group of 30-60 years
- Women who are willing to participate in the study.

Exclusion criteria

- Post mastectomy patients having more than two surgical drainage tubes
- Who were not willing to participate in the study

Description of the tool

Section A: Socio demographic data which consists of items such as age and educational status of the women.

Section B: Clinical profile, it includes Body mass index, Hemoglobin level (Hb) of the patient, History of chronic diseases, Treatment measures taken, Family history of breast cancer or breast diseases and Indications for mastectomy.

Section C: Observation checklist for assessing the drainage and surgical site of Post mastectomy patients. The sub sections of the drain assessment include volume of drain, characteristics of drain and day of drain removal. The surgical site assessment scoring is marked under a 10 point scale and it consists of following characteristics: presence of edema, presence of pain, warmth to touch, amount of exudates, characteristics of exudates, odour, wound dehiscence, fever, adequate pulse volume and hematoma

Description of post mastectomy exercises

Ball squeeze, breathing – diaphragmatic exercises, Shoulder - elevation/depression, Front raises, Turning arm out and Wall climbing were the selected post mastectomy exercises. Each exercise is repeated for ten times. The exercises were demonstrated and explain the benefits before the surgery itself. Patient is assisted to do exercises on the day of surgery by the evening and it continued two times per day.

Data collection process

Official permission to conduct the study was obtained from the Medical officer (Lourdes Hospital Ernakulam). Confidentiality was assured to the authorities and subjects to get their confidence and cooperation. Purpose of the study was explained to the participants, and informed consent was obtained. By using the interview method, information was collected regarding demographic data and clinical profile. Using random selection and assignment, the samples were enrolled in

the control and experimental group. The surgical drainage and surgical site assessment done in post mastectomy patients including control and experimental group. Pre test was carried out on 0 day of surgery by using the same tool.

Selected post mastectomy exercises were demonstrated to the experimental group as per the procedure. By using the observation checklist, the drain and surgical site were observed in 30 patients of experimental group individually on the fourth day of surgery. The control groups of post mastectomy patients also were assessed by using same observation checklist and compared the findings.

DATA ANALYSIS

Results are expressed as mean, standard deviation or percentage, categorical variation compared by ANOVA. A p value < 0.05 was considered as statistical significance. Statistical analyses were performed using SPSS 20.0 statistical software.

ORGANIZATION OF THE FINDINGS

Section I: Description of sample characteristics

Demographic Performa containing sample characteristics were analyzed using frequency and percentage.

Section II: Clinical data of post mastectomy patients

Clinical parameters of the sample were analyzed by using frequency and percentage.

Section III: Data on amount and characteristics of surgical drainage

Surgical drainage status were assessed by observation check list consisting of items such as amount of drainage, characteristics of drainage, day of drain removal and selected surgical site assessment parameters. The data were analyzed in terms of frequency and percentage.

Section IV: Effectiveness of post mastectomy exercise

The Effectiveness of post mastectomy exercises on early drain removal was analyzed by computing the mean, standard deviation, and paired t test. Mean additional difference was used to compare the effectiveness of the intervention among experimental than control group.

Section V: Association between the effectiveness of exercises in post mastectomy patients with selected demographic variables.

The association between the effectiveness of exercises in post mastectomy patients and selected demographic variables including age and education were analyzed by using ANOVA.

RESULTS

Section I: Description of sample characteristics

The study shows that 16.7% of the respondents were between the age group of 30-40 years, 30% were between the age group of 41-50 years. Where as in the control group 36.7% in 41-50 years, and 26.7% were among above 60 years of age. The education status shows that only 33.3% in the experimental group and 16.7 % in the control group were graduated.

Section II: Clinical data of post mastectomy patients

Frequency distribution according to the body mass index showed that 80% were ideal BMI in the experimental group and 53.33% were in the control group. Regarding the history of breast diseases in the family 56.7% in experimental and 70% in control group were not having family history.

Section III

Data on amount and characteristics of surgical drainage

The amount of surgical drainage in the experimental group in between 151-200ml during pre-test was 73.33% and in control group it is 53.33%. The post test score shows that in experimental group there is marked reduction in the amount of drain, that is 53.3% patients have amount in between 1-50ml and the 50% had 101-150ml in the control group.

Section 4

Effect of post mastectomy exercises on early removal of drain

The t value obtained is 32.101 which is greater than the table value (2.58) at 0.05 levels significant in the experimental group and in the control group the value was 24.2. This shows that there is a significant difference between the means of scores of patients in the experimental group and control group. The total difference in pre test score and post test score mean value for experimental group (17) is greater than the pre and post test difference mean value for control group (9.033). So the mean additional difference in experimental group is 7.9. So it is inferred that after the experiment the experimental groups have a reduction in the drain and were removed surgical drainage early compare to control group.

Section 6

Data on association of effect of post mastectomy exercises on early drain removal with selected variables

The obtained F value for control Group is 0.973

is less than the table value 2.98 at 0.05 level of significance that means there exist no significant difference among the different age group patients in pre-test and post test scores

DISCUSSION

In the present study 73.33% of post mastectomy patients have marked reduction in the surgical drainage after intervention among experimental group in the drain 1 and drain 2 when comparing with control group, which shows moderate reduction that is 30% in drain 1 and 53.33% in drain 2. The researcher concluded that suction drains are necessary after mastectomy to reduce the seroma formation and further complications in the early post operative period. In the present study it is seen that 100% of the respondents in the experimental group were removed the surgical drain after 3 days intervention when compare to control group.

The findings of the study is congruent with the study carried out by department of physical medicine and rehabilitation, Turkey on the effectiveness of early exercises in patients with modified radical mastectomy found that early exercises provides improvement in shoulder mobility and functional capacity. It also increases the fluid drainage in the first postoperative day and helped in the early removal of surgical drains[8].

CONCLUSION

Among 60 selected subjects 30 in experimental group experienced marked reduction in the surgical drainage and early removal of drain tubes done when compared to patients in the control group. From the study it was concluded that post mastectomy exercises are effective in early removal of drain. Based on the results the investigator felt there is a need for good practices like exercises, relaxation techniques etc to get relief from the discomfort and complications associated with the wound drainage tubes. Post mastectomy exercises are safe and more effective intervention for the early removal of drain. Hence the investigator selected post mastectomy exercises as an intervention for early drain removal.

Association between post mastectomy exercises and selected demographic variables shared no significant relation.

RECOMMENDAIONS

On the basis of the present study the following recommendations are formed for future study.

- A similar study can be replicated on a larger group of population.
- It would be beneficial to be conducted for all type of surgeries which use wound drainage system.
- The exercises schedule can be conducted with increasing the duration of more than7 days.
- A comparative study can be done to find the effectiveness of different intervention like exercise and other non pharmacological interventions.

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Conflict of interest

There was no conflict of interest reported.

REFERENCES

1. Edelman LC, Mandle LC. (2002) Health promotion throughout the lifespan. 6th edition. New Delhi: Mosby Elsevier Publications.
2. Mehta A, Bansal SC. (2004) Diagnosis and management of cancer, 1st edition. New Delhi: Jay pee brothers.
3. Tumor Biology Lab. Indian Council of Medical Research (ICMR). (2005) 2012 statistics of female breast cancer. [cited on 2012 January] Available from http://www. *BMC cancer*, 5, 11.
4. Garden JO et al. (2008) Principles and practices of surgery, 5th edition. New York: Long man group limited.
5. Katsumasa K, Kojiro S. (2005) Evidence-Based Risk Factors for Seroma Formation in Breast Surgery.[monograph on the internet] *Japan: Division of Surgery and Breast Oncology*.
6. Akinci M, Cetin B. (2009) Factors affecting seroma formation after mastectomy with full axillary dissection. *Acta Chir Belg*, 109(4), 481-3.
7. Gonzalez EA, Saltzstein EC, Riedner CS, Nelson BK. Seroma formation following breast cancer surgery. [internet] Department of Surgery, Texas Tech University Health Sciences Center, El Paso, Texas 79905, USA. Available from http://www.techtexas@4567.
8. Andeweg CS, Schriek MJ, Heisterkamp J, Roukema JA. (2011) Incidence of seroma formation. *Breast J*, 17(4), 359-64.