

Chest lymphedema after breast cancer treatment

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Abstract

One of the main complications in the treatment of breast cancer is lymphedema. The tests are more specific for the diagnosis of lymphedema in the extremities, though the lymphatic drainage of the chest is also compromised and in need. The aim of the current study was to evaluate the prevalence of chest edema in patients who had been submitted to breast cancer treatment. The prevalence of chest edema in 35 women being treated for arm lymphedema due to breast cancer treatment was evaluated in a retrospective randomized quantitative, blind study in the Clinica Godoy in the period from January to October 2012 using bioimpedance of the thorax. For the descriptive analysis of the results will be used prevalence of the event. The patients' ages ranged from 42 to 82 years old with an average of 63.7 years. Eight patients had a body mass index (BMI) of less than 25, 16 had between 25 to 30 and 10 had a BMI greater than 30. Chest edema was detected by bioimpedance in four (11.42%) patients. Chest lymphedema is less prevalent than upper limb lymphedema in patients submitted to axillary dissection or it improves faster.

Keywords: Lymphedema, chest, prevalence

Introduction

The World Health Organization estimates that there are more than 1,050,000 new cases of breast cancer worldwide each year, making it the most common type of cancer among women. One of the main complications with the treatment of breast cancer is lymphedema¹. Lymphedema is an accumulation of water, salts, electrolytes, high molecular weight proteins and other elements in the interstitial space resulting from dynamic or mechanical changes of the lymphatic system which leads to a progressive increase of an extremity or body region with decreased functional and immune capacity, weight gain and morphological changes². The most commonly used tests to assess lymphedema are volumetry, perimetry, and more recently, lymphoscintigraphy. Bioelectrical impedance spectroscopy (BIS) can be used to measure local lymphedema. As this technique is specific for extracellular fluid, it is more sensitive in the diagnosis of lymphedema than perimetry³⁻⁵. One study reports that BIS can improve the accuracy of diagnosis in the assessment of lymphedema after

breast cancer treatment and identify the need for further investigation⁶.

These exams are more specific in the diagnosis of lymphedema of the extremities however lymph drainage of the thorax can also be tested. Bioimpedance opens the perspective of the evaluation of edema of the thorax and the use of specific devices allows this assessment. The aim of the current study was to evaluate the prevalence of chest edema in patients who had been submitted to breast cancer treatment.

Methods

The prevalence of chest edema in 35 women being treated for arm lymphedema due to breast cancer treatment was evaluated in a retrospective randomized quantitative, blind study in the Clinica Godoy in the period from January to October 2012 using bioimpedance of the thorax.

The inclusion criteria were patients with arm lymphedema due to breast cancer being treated for lymphedema, who did not achieve total reduction of the arm edema

(difference > 100 grams compared to the contralateral limb).

The edema was evaluated by bioimpedance using an Inbody S10® device (Biospace, Seoul, South Korea). This equipment stipulates reference values for edema on each examination performed. The first assessment using this appliance in the service was considered. Descriptive analysis of the prevalence of the event was used for statistical analysis.

Results

The patients' ages ranged from 42 to 82 years old with an average of 63.7 years. Eight patients had a body mass index (BMI) of less than 25, 16 had between 25 to 30 and 10 had a BMI greater than 30. Chest edema was detected by bioimpedance in four (11.42%) patients.

Discussion

The current study assessed the prevalence of chest lymphedema in patients being treated for breast cancer treatment-related lymphedema. Chest lymphedema is less prevalent than arm lymphedema. No studies were found in the literature evaluating the prevalence of chest lymphedema. This study was carried out during the treatment of arm lymphedema and a reduction in the lymphedema was evidenced for all patients. However, chest edema was not evaluated at the beginning of the treatment. Further studies are being carried out to assess the prevalence of chest edema before starting treatment with lymphatic drainage and compression therapy.

The excision of axillary lymph nodes leads to obstruction of lymph vessel collectors that drain into the armpit region thus causing hypertensive lymphedema of the chest and upper limbs. Volumetry, perimetry, and more recently, lymphoscintigraphy are the most commonly used examinations in the evaluation of the extremities, but it is impractical to use the same techniques to evaluate the chest.

Bioimpedance is a diagnostic method for lymphedema although generally it is used for the extremities. The present study used a bioimpedance apparatus which enables the evaluation of edema of the chest and extremities. Bioimpedance measures the response of the body to an applied electric current and calculates the body fluid volume. This technique is relatively new and one of several methods available to differentiate extracellular fluid from the total volume of the limb.

Collectors in the chest flow to the corresponding axillary region or to lymph nodes of the ipsilateral or contralateral cervical region. The results of this study suggest that chest lymphedema is less prevalent than lymphedema of the upper limb. However, another possibility would be that chest lymphedema improves quicker than arm lymphedema.

Conclusions

Chest lymphedema is less prevalent than upper limb lymphedema in patients submitted to axillary dissection or it improves faster.

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