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Epidemiological data on lower limb lymphedema

Abstract

Objective: The aim of the present study was to evaluate epidemiological data of patients seen at a clinic specialized in the treatment of lymphedema.

Methods: A retrospective, cross-sectional study was conducted involving data from 150 consecutive patients with lower limb lymphedema in clinical stages II and III treated at the Godoy Clinic in São Jose do Rio Preto. The follow data were collected: sex, age, type of lymphedema (primary or secondary), cause of secondary lymphedema (cancer, trauma, venous disease) and limb dominance. The diagnosis of lymphedema was based on the clinical history and physical examination; in cases of doubt, lymphoscintigraphy of the lower limbs was requested. Descriptive statistics were performed and results were expressed as percentages.

Results: Twenty-five (16.66%) of the patients were male and 125 (83.33%) were female. Mean age was 42.52 years (41.8 years among the men and 42.67 years among the women). One hundred nine cases (72.66%) were primary lymphedema and 41 (27.33%) were secondary. Among the secondary cases, 27 (18%) were related to cancer treatment, 10 (6.6%) were linked to trauma and four (2.6%) were cases of phlebolymphedema. Mean age was 51.4 years among the patients with cancer treatment-related lymphedema, 41 years among those with trauma-related lymphedema and 64.25 years among those with phlebolymphedema. The left leg was affected in 61 cases (40.66%), the right leg was affected in 37 cases (24.66%) and lymphedema was bilateral in 52 cases (34.66%).

Conclusion: Primary lymphedema was predominant and affected women more than men. Primary lymphedema occurred at an earlier age compared to cancer treatment-related lymphedema and phlebolymphedema. The left leg was affected more often, followed by bilateral lymphedema and, finally, the right leg alone.

Keywords: lymphedema, epidemiology, gender, age, data

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Introduction

Lymphedema is a clinical condition stemming from a deficiency in the formation or drainage of lymph and can be either primary (congenital) or secondary to cancer treatment, varicose veins, trauma and other conditions.[1-3] In primary lymphedema, the patient is born with an alteration in the lymphatic system that may or may not progress to lymphedema. In the secondary, he is born with an intact lymphatic system, but during his life he suffers damage and can evolve into lymphedema. The treatment of cancer, filariasis, infectious frames, trauma, chronic venous diseases are important causes of lymphedema.[1-6] Recurring erysipelas is associated with the development of lymphedema.[7] In one study, hysterectomy and sentinel lymph node biopsy separately resulted in a lower incidence of lower limb lymphedema than infrared para-aortic and pelvic lymphadenectomy (1.3% vs. 18.1%, p=0.0003).[8] A systematic review found a 29.8% incidence of lymphedema in an analysis of all studies, which was lowered to 16.7% when the analysis was restricted to prospective cohort studies. The risk factors were wound infection, inguinofemoral lymphadenectomy, an advanced age, a high body mass index and radiotherapy.[9]

In another study, the cumulative incidence of lymphedema following treatment for gynecological cancer was 23.1% in one year, 32.8% in three years and 47.7% in 10 years. The median time until the emergence of lymphedema was 13.5 months.[10] The identification of all causes of lymphedema and aggravating factors is important to the definition of treatment and prophylaxis. The aim of the present study was to evaluate epidemiological aspects of lymphedema at a specialized center.

Methods

Design

A retrospective, cross-sectional study was conducted involving 150 patients with lower limb lymphedema treated at the Clinica Godoy-Sao Jose do Rio Preto in 2019. The following epidemiological data were collected: age, sex, type of lymphedema (primary or secondary) and dominant limb.

Inclusion criteria

Primary or secondary lymphedema of the lower limbs in clinical stages II and III.

Exclusion criteria

Other causes of edema unrelated to the lymphatic system.

Randomization

Patients who met the eligibility criteria were selected in consecutive order of arrival at the clinic.

Ethical aspects

This study received approval from the Human Research Ethics Committee of the São José do Rio Preto School of Medicine, SP, Brazil#2.003.574.

Development

The sample was composed of 150 consecutive patients in treatment at the clinic with a diagnosis of lower limb lymphedema who agreed to participate in the study. A questionnaire was administered addressing age, sex, type of lymphedema (primary or secondary to cancer treatment, trauma, varicose veins, etc.) and dominant side. The diagnosis of lymphedema was based on the patient history, clinical examination and complementary exams in cases of doubt.

Statistical analysis

The data were entered into the Excel program. Descriptive statistics were performed, with the determination of the frequency of events.

Results

Twenty-five (16.66%) of the patients were male and 125 (83.33%) were female. Mean age was 42.52 years (41.8 years among the men and 42.67 years among the women). One hundred nine cases (72.66%) were primary lymphedema and 41 (27.33%) were secondary. Among the secondary cases, 27 (18%) were related to cancer treatment, 10 (6.6%) were linked to trauma and four (2.6%) were cases of phlebolymphedema. Mean age was 51.4 years among the patients with cancer treatment-related lymphedema, 41 years among those with trauma-related lymphedema and 64.25 years among those with phlebolymphedema. The left leg was affected in 61 cases (40.66%), the right leg was affected in 37 cases (24.66%) and lymphedema was bilateral in 52 cases (34.66%).

Discussion

In the present study, primary (congenital) lower limb lymphedema accounted for approximately 72% of the cases and approximately 28% were secondary lymphedema, associated mainly with cancer treatment and trauma. These findings are important and correspond to a sample in a region of Brazil that rarely has filariasis as a cause of lymphedema. However, a previous study reports that chronic venous disease is an important cause of lymphedema and is generally not treated.[11,12]

Erysipelas is an important aggravating factor of lymphedema and we found that patients with two or more episodes of erysipelas already have alterations in the lymphatic system.[13] However, the biggest difficulty is to characterize erysipelas as the main cause of lymphedema because usually patients can have a lesion in the lymphatic system and it can be an aggravating factor. Thus, without previous evaluations showing the normality of the lymphatic system, it is very difficult to have a definitive diagnosis. Obesity is another aggravating factor of lymphedema, but it can be the cause, so a series of factors must be analyzed in the differential diagnosis of lymphedema.[14]

In daily clinical practice, the determination of primary or secondary lymphedema is fundamental to the definition of the therapeutic strategy.[1] Another aspect that defines the strategy is whether or not the lymphedema is hypertensive. Considering this need, the authors of this paper published a novel classification of lymphedema emphasizing the criteria for lymphatic hypertension.[15] In cases of lymphatic hypertension with the proximal blockage of lymphatic vessels, treatment must be adapted to the physiopathology of the condition and there is greater difficulty in reducing the edema as well as maintaining the results.

Patients with primary lymphedema below the knee have the best outcomes in terms of the reduction in edema and the maintenance of the results. Therefore, the determination of the physiopathology helps define the best form of treatment for each patient.

Lymphedema secondary to cancer treatment with the removal of inguinal lymph nodes satisfy the diagnostic criteria for hypertensive lymphedema, in which the mechanical blockage of lymphatic drainage leads to an increase in pressure in the collectors. Compression mechanisms are the basis of treatment for all types of lymphedema, but compression at this level in hypertensive cases is not therapeutically effective and all forms of therapy for such patients are difficult.

The two main types of lymphedema (primary and secondary) have different approaches and the correct diagnosis of the physiopathological processes involved is fundamental.

Conclusion

Primary lymphedema was predominant and affected women more than men. Primary lymphedema occurred at an earlier age compared to cancer treatment-related lymphedema and phlebolymphedema. The left leg was affected more often, followed by bilateral lymphedema and, finally, the right leg alone.

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Conflicts of interest

The authors declared no have conflict interest for the study.

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