



Erysipelas and lymphangitis in patients undergoing lymphedema treatment after breast-cancer therapy

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ABSTRACT

Aim: The aim of this study was to evaluate the prevalence of erysipelas and lymphangitis in a group of patients under treatment for lymphedema after breast-cancer therapy.

Methods: A random observational prospective study of the incidences of lymphangitis and erysipelas was performed for 66 patients with arm lymphedema after breast-cancer treatment. The study was carried out between March 2006 and December 2007 at the Godoy Clinic in São José do Rio Preto, Brazil. The clinical evaluation of the participants was performed weekly before the start of treatment, with patients being required to immediately report any complications to the attending service.

Results: The mean time of follow-up of the patients between their treatment for breast cancer and the start of this study was 12.3 months, and three complications (4.5%) occurred; two cases of lymphangitis were reported after insect bites and one case of erysipelas after a hand injury, with repeat episodes reported by all three patients.

Conclusion: In spite of prophylactic advice regarding lymphangitis and erysipelas during treatment for lymphedema after breast-cancer therapy, patients are subject to complications; however, this in itself does not justify the use of prophylactic antibiotic therapy.

Introduction

KEY WORDS

lymphedema,
erysipelas,
lymphangitis,
breast cancer

In Brazil, breast cancer is expected to affect 49,400 individuals in 2008. Despite the high incidence of this type of cancer, the survival of women treated in the initial stages of the disease has been increasing (1). In Europe, the cumulative survival is 91% at 1 year and 65% at 5 years; in the United States it is 96.8% at 1 year (2).

The treatment of cancer varies by stage. The surgical procedures, apart from extirpation of the tumor, may also include resection of axillary lymph nodes. Therapy

can involve surgery, chemotherapy, radiotherapy, and hormone therapy (3). One of the complications of the treatment for breast cancer is lymphedema, with a regional prevalence of around 32.5% (4).

Erysipelas is a frequent cause of skin infection, usually involving beta-hemolytic streptococcus, which commonly causes edema (5). This disease has been associated with edema of both upper lower and limbs (6–9). The sequelae that affect patients after mastectomies require multidisciplinary care for their prevention and



treatment (3).

The aim of this study was to evaluate the prevalence of erysipelas and lymphangitis in a group of patients under treatment for lymphedema after breast-cancer therapy.

Methods

A random observational prospective study of the incidences of lymphangitis and erysipelas was performed on 66 patients with arm lymphedema after breast-cancer treatment. The study was carried out between March 2006 and December 2007 in the Godoy Clinic in São José do Rio Preto, Brazil. The ages of the patients ranged from 35 to 83 with a mean of 58.8 years. Diagnosis was achieved by clinical evaluation and water displacement volumetry; lymphedema was diagnosed when the difference in volume between the arms was > 200 ml. Inclusion of patients was by invitation to all patients on arrival at the clinic. Patients with end-stage disease and those that refused to take part in the study were excluded. All of the patients were informed about the objectives of the investigation and on acceptance signed written consent forms. The study was approved by the Research Ethics Committee of the Medical School in São José do Rio Preto (FAMERP).

The participants were submitted to clinical treatment that included manual and mechanical lymph drainage using the Godoy technique (10, 11), myolymphokinetic exercises (12) and activities (13), and the use of a cotton-polyester compression sleeve (14). Patients were treated two times weekly as outpatients. The clinical evaluation of the participants was performed weekly before the start of treatment with patients being required to immediately report any complications to the attending service.

Results

The mean follow-up time of the patients between their treatment for breast cancer and the start of this study was 12.3 months, and three complications (4.5%) occurred; two cases of lymphangitis were reported after insect bites and one case of erysipelas after a hand injury, with repeat episodes reported by all three patients.

REFERENCES

1. INCA (Instituto Nacional de Câncer). Estimativas da incidência e mortalidade por câncer. Rio de Janeiro: Ministério da Saúde; 2008. Available from: <http://www.inca.gov.br/>.
2. Parkin D, Bray FI, Devesa SS. Cancer burden in the year 2000. The global picture. *Eur J Cancer*. 2001;37 Suppl:S4-S66.
3. Silva HS. Pós-tratamento cirúrgico de câncer de mama: intercorrências, aspectos clínicos, diagnóstico

Discussion

The current study shows that, even with constant warnings, patients with lymphedema after treatment for breast cancer are subject to inflammatory and infectious complications that lead to aggravation of the edema. In this study, the mean follow-up time was about 1 year and a rate of 4.5% of complications was observed. Insect bites are not always preventable even with the constant use of compression sleeves, which offer a certain amount of protection. In respect to the case of erysipelas, the patient suffered a small lesion that was neglected and consequently resulted in erysipelas. The maximum increase in the volume of the limbs of the three patients was 420 grams during the episodes so these complications can delay the recovery time of the limbs.

Despite the frequent observations of the association of erysipelas with lymphedema, this disease is not often reported in the literature (5–8). One study associated erysipelas with preexisting alterations of the lymphatic system, demonstrating that patients with erysipelas can present with alterations of the contralateral lymphatic system (5), thus this relationship may not depend on the cause of the lymphedema. Another aspect to be considered is the impact on the quality of life of patients with lymphedema, both of upper and lower limbs (15–17). Hence, precautions to minimize complications after breast-cancer treatment should be highlighted.

In this group of patients, prophylactic antibiotic therapy was not utilized, only guidance and constant evaluations, but the use of penicillin has been recommended in the prevention of erysipelas (18). From the results of this investigation, we would question the utility of prophylactic antibiotic therapy because only one patient might have benefited; this therapy does not protect against lymphangitis due to insect bites. Thus, one episode served as a warning to the group of patients under treatment with respect to neglecting a small lesion on an already at-risk limb.

Conclusion

In spite of prophylactic advice in relation to lymphangitis and erysipelas during the treatment of lymphedema after breast-cancer therapy, patients are prone to complications. However, this in itself does not justify the use of prophylactic antibiotic therapy.

- e abordagem terapêutica [thesis]. [São Jose do Rio Preto]: Faculty of Medicine; 2007. 95 p.
4. Godoy JMP, Silva SH, Godoy MFG. Sensitivity and specificity of combined perimetric and volumetric evaluations in the diagnosis of arm lymphedema. *Prague Med Rep.* 2007;108(3):243–7.
 5. Damstra RJ, van Steensel MA, Boomsma JH, Nelemans P, Veraart JC. Erysipelas as a sign of subclinical primary lymphoedema: a prospective quantitative scintigraphic study of 40 patients with unilateral erysipelas of the leg. *Br J Dermatol.* 2008;158(6):1210–5.
 6. Masmoudi A, Maaloul I, Turki H, et al. Erysipelas after breast cancer treatment (26 cases). *Dermatol Online J.* 2005 Dec 1;11(3):12.
 7. El Saghir NS, Otrrock ZK, Bizri AR, Uwaydah MM, Oghlakian GO. Erysipelas of the upper extremity following locoregional therapy for breast cancer. *Breast.* 2005 Oct;14(5):347–51.
 8. Godoy JMP, Silva SH. Prevalence of cellulitis and erysipelas in post-mastectomy patients after breast cancer. *Arch Med Sci.* 2007;3:249–51.
 9. Godoy JMP, de Godoy ME, Valente A, Camacho EL, Paiva EV. Lymphoscintigraphic evaluation in patients after erysipelas. *Lymphology.* 2000 Dec;33(4):177–80.
 10. De Godoy JM, Batigalia F, Godoy Mde F. Preliminary evaluation of a new, more simplified physiotherapy technique for lymphatic drainage. *Lymphology.* 2002;35(2):91–3.
 11. De Godoy JM, Godoy M de F. Development and evaluation of a new apparatus for lymph drainage: preliminary results. *Lymphology* 2004 Jun; 37(2):62–4.
 12. Markes M, Brockow T, Resch Kl. Exercise for women receiving adjuvant therapy for breast cancer. *Cochrane Database Syst Rev.* 2006;18(4):CD005001.
 13. Godoy MFG, Godoy JMP, Braile DM. Pilot study with myolymphokinetic activities in the treatment of lymphedema after breast cancer. *Indian J Physiother Occup Ther.* 2008;2(3):17–9.
 14. Godoy JMP, Godoy MFG. Assessment of inelastic sleeves in patients with upper limb lymphoedema. *Indian J Physiother Occup Ther.* 2007;1(4):3–5.
 15. Pereira de Godoy JM, Braile DM, de Fátima Godoy M, Longo O Jr. Quality of life and peripheral lymphedema. *Lymphology.* 2002;35(2):72–5.
 16. Heiney SP, McWayne J, Cunningham JE, et al. Quality of life and lymphedema following breast cancer. *Lymphology.* 2007 Dec;40(4):177–84.
 17. Kim SJ, Yi CH, Kwon OY. Effect of complex decongestive therapy on edema and the quality of life in breast cancer patients with unilateral lymphedema. *Lymphology.* 2007;40(3):143–51.
 18. Badger C, Seers K, Preston N, Mortimer P. Antibiotics / anti-inflammatories for reducing acute inflammatory episodes in lymphoedema of the limbs. *Cochrane Database Syst Rev.* 2004;(2):CD003143.

A U T H O R S ' A D D R E S S E S

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