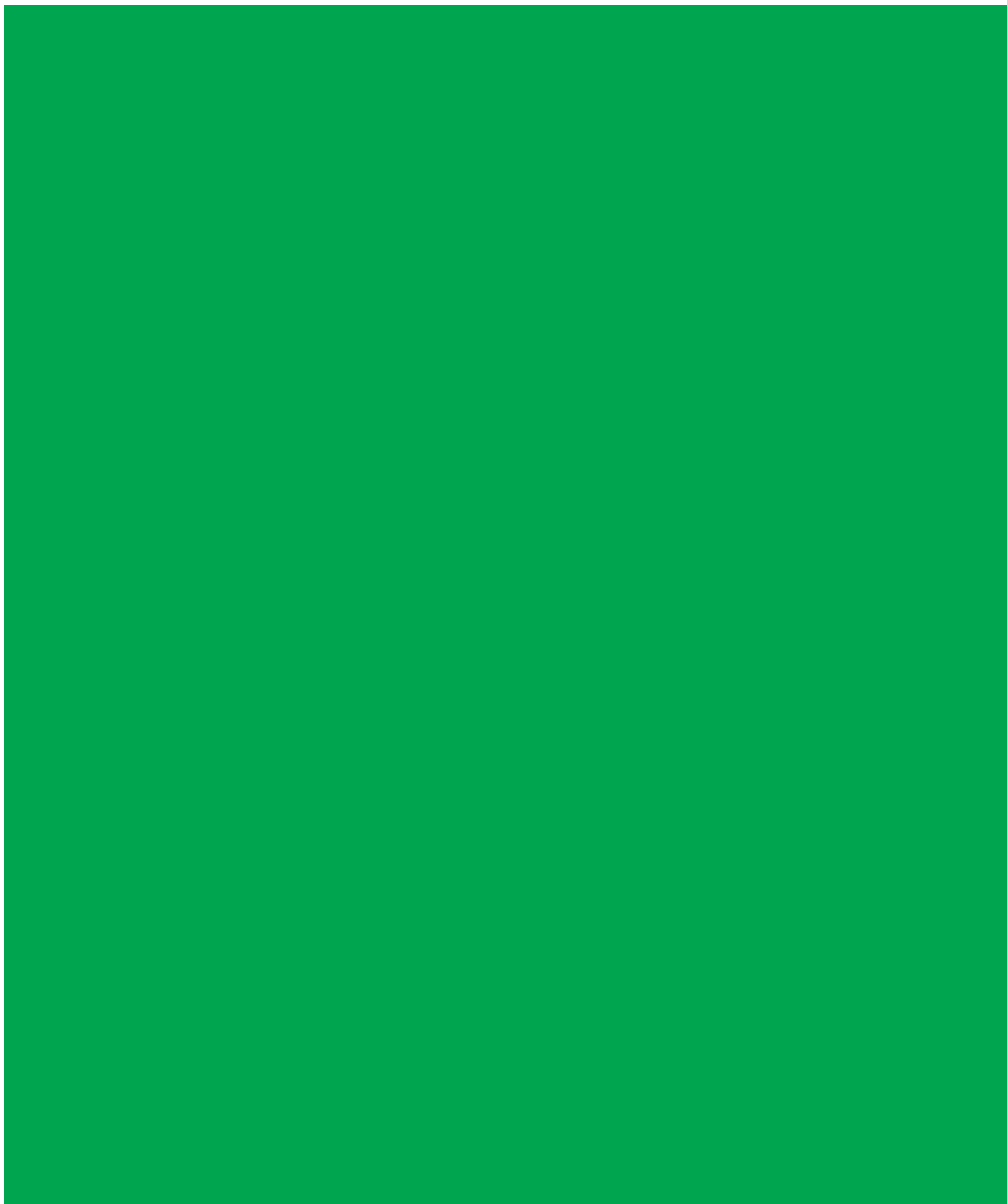




JOURNAL OF
PHYSIOTHERAPY, OCCUPATIONAL THERAPY
AND REHABILITATION

October / December 2008 • N° 1



ISBN 000000

JOURNAL OF PHYSIOTHERAPY, OCCUPATIONAL THERAPY AND REHABILITATION

EDITOR-IN-CHIEF

Maria de Fátima Guerreiro Godoy, OT, PhD
(São José Rio Preto ,Brazil)

CO-EDITORS

Jose Maria Pereira de Godoy, MD, PhD (Brazil)
Oscar Ariel Ronzio, PhT (Argentina)
Pablo Tomás Carús, PhD (Portugual)
Hans-Rudolf Weiss, MD (Germany)
Rosa Prato, PhT (Italy)
Archna Sharma (Indian)

EDITORIAL BOARD

Ruth M Watson, OT (South África)
Susan E. Roush, PhT, PhD (United Kingston)
Flávia Mariana Valente, PhT (Brazil)
Gildo Cavalheri Jr. PhT (Brazil)
Patricia Brigido, PhT, PhD (Brazil)
Marielza Martins, OT, PhD (Brazil)
Ludmila Bonelli, PhT (Brazil)
Ester Paltrinieri, PhT (Argentina)
Harald J. Hamre, MD (Germany)

REGIONAL EDITORS

Silvia Helena Silva, PhT, PhD (Brazil)
Marcus Vinicius Herbst Rodrigues, PhT (Brazil)
International Advisory Committee
Patricia Froes Meyer, PhT, PhD

LANGUAGE EDITOR

David Hewitt (Brazil)

STATISTICS EDITOR

José Antonio Cordeiro (Brazil)

EXECUTIVE EDITOR

Jose Maria Pereira de Godoy MD, (Brazil)
Secretary of the Editorial Staff
Fernando Batigália, MD,PhD (Brazil)

CONTRIBUTING EDITORS

Talita Fabiano Carvalho (Brazil)
Lina Maria Azoubel, PhD (Brazil)

EXPEDIENTE

ISBN 000000

JOURNAL OF PHYSIOTHERAPY,
OCCUPATIONAL THERAPY
AND REHABILITATION

October / December 2008

CONTENTS

EDITORIAL.....04

ORIGINAL PAPER.....05

CASE REPORT.....06

EDITORIAL

The Journal of Physiotherapy, Occupational Therapy and Rehabilitation aims to publish interdisciplinary publications directed towards rehabilitation from the areas of physiotherapy, occupational therapy and similar areas including medicine, nutrition, and psychology. Its major objective is to stimulate young researchers to make their research public in an attempt to broaden the multidisciplinary view of the preventive and therapeutic approach to this social problem. The interaction between healthcare professionals from all continents will be encouraged giving opportunity to professionals to divulge their scientific works. Thus, international contributions are of fundamental importance to achieve this goal and only with your participation we will be able to make this journal a success.

Editor-in-Chief

Maria de Fátima Guerreiro Godoy, OT, PhD.

Myolymphokinetic activities associated with a *gorgurão* contention sleeve in the treatment of lymphedema of the upper limbs. Pilot Study.

Authors

Maria de Fátima Guerreiro Godoy, OT, PhD*
Lilian Baldan Zaccaro, PhT***
Domingo Marcolino Braile, MD, PhD***
José Maria Pereira de Godoy, MD, PhD****

Affiliation

*Occupational therapist, Professor of Post Graduation Course of the Medical School in São José do Rio Preto (FAMERP) and Clinic Godoy.

**Physiotherapist; Student of the *Lato-sensu* Post Graduation Course on Rehabilitation of Lymphedema FAMERP

***Coordinator of the Post Graduation *Stricto-Sensu* Course of the Medical School in São José do Rio Preto (FAMERP)

****Professor in the Graduation and Post Graduation *Stricto-Sensu* Courses of the Medical School in São José do Rio Preto (FAMERP)

Correspondence address

Maria de Fátima Guerreiro Godoy
Rua Floriano Peixoto, 2950.
São José do Rio Preto-SP
Zipe code: 15020-010
E-mail:fatima@riopreto.com.br

Abstract

Background: The object of the current study was to evaluate the reduction in volume caused by myolymphokinetic activities associated with the use of a *gorgurão* sleeve in patients with lymphedema.

Patients and Method: Thirteen female patients with lymphedema of the upper limbs, who were not allowed to perform lymph drainage by their attending oncologist, were selected and referred to a treatment program that associated myolymphokinetic activities with a contention mechanism. The ages of the patients ranged between 36 and 72 years old with a mean age of 51.6 years. Common myolymphokinetic activities utilized for all of the participants included: cooking, ironing, making the bed, washing light clothes, brushing the house using the affected arm, washing up, brushing the teeth and brushing the hair. Volume plethysmography was performed before beginning and after 30 days of participation in the treatment program. For statistical analysis the paired student t-test was utilized with an alpha error of 5% being considered acceptable.

Results: The student t-test demonstrated a statistically significant difference (p -value < 0.0001) between the size of the limb before and the size after the 30th day.

Conclusion: The association of contention with day-to-day myolymphokinetic activities reduces the size of arms affected by lymphedema.

Key words: Breast cancer; contention mechanism; lymphedema, myolymphokinetic activities.

Introduction

The World Health Organization estimates that there are more than 1,050,000 new cases of breast cancer throughout the world annually, making this the most common form of cancer in women.

Lymphedema, which is one of the main complications of breast cancer treatment, is an abnormal accumulation of liquids and substances in the tissues resulting from a failure in the lymph drainage system associated with insufficiencies of the extralymphatic proteolysis of proteins in the cellular interstice and of the mobilization of macromolecules including hyaluronic acid ⁽²⁾. One concern today is in respect to the post-surgical and radiotherapeutic sequels, as limitations caused by lymphedema directly affect the quality of life of these women.

Prevalence can be as high as 50% in the postoperative period of breast cancer when dissection of the axillary lymph nodes is involved ⁽³⁾. Once suffering from lymphedema, the ability to perform everyday activities is limited interfering directly with the physical, emotional and social aspects of patients. There is a consensus that the best treatment of lymphedema is an association of therapies ⁽⁴⁻⁷⁾, but a multidisciplinary approach and family participation are also crucial ⁽⁸⁾.

Occupational activities should be encouraged in patients with lymphedema after breast cancer treatment with the aim of solving one of the difficulties experienced by these

patients. These activities can be transformed into a form of treatment when associated to contention mechanisms. For this, guidance is required so that the myolymphokinetic activities utilized are carefully evaluated; only those that favor venolymphatic return should be used ⁽⁸⁾.

The objective of the current study was to evaluate the reduction of size due to myolymphokinetic activities associated with a *gorgurão* sleeve in patients suffering from lymphedema of the upper limbs.

Method

Thirteen female patients, who were not authorized to begin lymph drainage by their attending oncologists, were selected and referred to the Godoy Clinic for the evaluation of lymphedema which had been caused by surgery, radiotherapy or chemotherapy for breast cancer. Their ages ranged between 36 and 72 years old with a mean of 51.6 years. Inclusion criteria were a history of treatment for breast cancer associated with edema of the arm which caused a difference in volume of more than 200 mL in relation to the contralateral limb. Women with active infections, skin injuries or active disease were excluded from the study. The study was approved Ethics Committee of Bioscience Institute-UNESP-São Jose do Rio Preto-SP-Brazil. The women who satisfied the inclusion criteria were informed of the nature of the research and on accepting, were requested to sign an informed consent form. Evaluation of the daily life activities (domestic, occupational and leisure), the changes that had occurred after surgery and the development of lymphedema were attained by means of a structured questionnaire. The common activities of the participants were: cooking (using small pans), ironing, making the bed, washing light clothes, brushing the house using the affected arm, washing up, brushing

the teeth and brushing the hair. The women were advised about the activities with emphasis placed on the way they should be performed: the intensity, force, weight, repetitive movements, posture whilst performing the activity to prevent injury of the joints and the use of a *gorgurão* sleeve as contention. Volume plethysmography was performed before starting the myolymphokinetic activities, after inclusion in the treatment program, and 30 days after starting treatment utilizing a square 5-mm thick glass container with sides of 35 cm and a height of 65 cm. The volume was measured using calibrated digital scales. For statistical analysis, the paired student t-test was employed with an alpha error of 5% being considered acceptable.

Results

Table 1: Volume of the lymphedematous limb before the treatment program and after 30 days performing myolymphokinetic activities using a *gorgurão* sleeve

# Patient	Initial volume (kg)	Volume after 30 days (kg)
1	2719	2631
2	1644	1486
3	1794	1632
4	1186	1121
5	2633	2540
6	2048	1854
7	1258	1182
8	2114	1928
9	1360	1260
10	1632	1596
11	1734	1560
12	3013	2896
13	1780	1694

Kg = kilogram

The paired student t-test showed a significant statistical difference (p-value < 0.0001) for the evaluations before and after the 30-day treatment program of myolymphokinetic activities.

Discussion

The current study shows that the association of myolymphokinetic activities with a contention mechanism can reduce the size of upper limbs affected by lymphedema. Hence, this is a new form of treatment for patients which aims at transforming daily activities, together with a contention mechanism, into a form of treatment for affected arms. Many day-to-day activities can be transformed into myolymphokinetic activities when we do not interfere with the manner in which the activity is performed and into occupational myolymphokinetic exercises when we advise and interfere in the way the patient performs these activities. The association of contention mechanisms is essential to obtain a good result. In this study the patients used a low-elastic homemade sleeve made from a fabric called *gorgurão* (a material produced from almost equal quantities of cotton and polyester) ^(8,9). This contention sleeve is easy to dress, cheap and causes significant resting and working pressures and as such is useful in the treatment of lymphedema. These patients were not allowed to perform lymph drainage by the attending oncologist who had followed them since their surgeries. When possible other forms of treatment should be associated. The importance of an occupation for these patients is indispensable; it helps them accept their disease as well as makes them feel more useful and productive. Any type of support that may reduce the suffering of patients who have already passed through a surgery and subsequently developed lymphedema must be encouraged. An occupation with myolymphokinetic activities using a contention mechanism is very practical and efficacious to reduce the edema. It is important to remember that these patients were individually assessed, trained and supervised during the treatment program with specialized guidance from a professional as the daily

activities should favor lymph drainage similar to treatment using exercises. In this study, initially the working pressures that the different activities exerted were studied and from these results the most appropriate movements for each individual were selected.

This experiment proved that day-to-day activities associated with a *gorgurão* contention sleeve cause working pressures that can be used to stimulate lymph drainage and thus is a therapeutic resource to treat limbs affected by lymphedema⁽⁹⁻¹¹⁾.

Hence, in this study common activities in the life of patients were considered, however counseling should be individual to each patient, thereby improving motivation and compliance to the treatment program.

Conclusion

The association of an appropriate contention mechanism with myolymphokinetic activities may reduce the volume of upper limbs affected by lymphedema.

References

- 1-World Health Organization. **Global cancers rates could increase by 50% to 15 million by 2020**. Geneva, 2003. Disponível em: <http://www.who.int/mediacentre/releases/2003/pr27/en/print.html>
- 2- Godoy JMP, Silva HS. Prevalence of cellulitis and erysipelas in post-mastectomy patients after breast cancer. Arch Med Sci 2007; 3, 3: 249-251.
- 3-Morrell RM, Halyard MY, Schild SE, Ali MS, Gunderson LL, Pockaj BA. Breast cancer-

related lymphedema. Mayo Clinic Proceedings 2005; 80(11):1480-4.

4- Godoy JMP, Godoy MFG. Assessment of inelastic sleeves in patients with upper limb lymphoedema. Indian Journal of Physiotherapy and Occupational Therapy 2007;1(4):3-5.

5- Foldi M, Foldi E, Kubik S. Lymphostatic Disease. In Textbook of Lymphology. For Physicians and Lymphedema Therapists. Munchen:Urban & Fischer, 2003 p.280.

6-Casley-Smith JR, Boris M, Weindorf S, Lasinski B. Treatment for lymphedema of the arm--the Casley-Smith method: a noninvasive method produces continued reduction. Cancer. 1998 Dec 15;83(12 Suppl American):2843-60.

7-Howell D, Watson M. Evaluation of a pilot nurse-led, community-based treatment programme for lymphoedema. International Journal of Palliative Nursing 2005 Feb; 11(2):62-9.

8-Ciucci1 JL, Marcovecchio LD. Método Transdisciplinario. In Ciucci JL. Linfedema del Miembro Superior. Buenos Aires:Nayarit, 2004. p.79-100.

9- Godoy MFG, Godoy JMP, Braile DM. Pilot study with Myolymphokinetic activities in the treatment of lymphedema after breast cancer. Indian Journal of Physiotherapy and Occupational Therapy 2008; 2 (3):17-19.

10- Godoy MFG, Godoy JMP, Braile DM. Dynamic analysis of muscular lymphokinetic activities in the treatment of lymphedema of the upper limbs. Brazilian Journal in Health Promotion 2008; 20(4):233-7.

11- The effect occupational therapy on the creation and adaptation to devices to facilitate lymphovenous return. Abstract Book XIX International Congress of Lymphology, Freiburg, 2003. p.65.