

## Intensive treatment of post-breast cancer upper limb lymphedema

Authors: Edivandra Buzato PhT , Cassio Gustavo Santana PhE, Karina Paludetto Lopes, Psch  
Adress: Godoy Clinic , Avenida Constituição 1306-São Jose do Rio Preto-SP-Brazil  
CEP: 15025-120

E-mail: edibuzato@ig.com.br \* author correspondence

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### Abstract

This paper describes a case of intensive treatment for the volumetric reduction of upper limb lymphedema. A 65-year-old female developed lymphedema of the right upper limb following breast cancer treatment, with a six-year history. A burn on the right upper arm and an episode of erysipelas in this period initiated the lymphedema. As the swelling did not subside after several treatments, the patient sought the Godoy Clinic (São José do Rio Preto, Brazil), where an intensive form of treatment was proposed, involving cervical stimulation, manual lymphatic drainage, mechanical lymphatic drainage (RAGodoy®) and the use of an arm sleeve with a low degree of elasticity (Gorgurão < 50) six hours a day for 10 days, with a two-day interval on the weekend. The following were the assessment measures: volumetric analysis, bioimpedance analysis and photographic documentation on the first and last day of treatment. The volumetric analysis revealed a reduction of 367 ml (51%) and the bioimpedance analysis revealed a reduction of 0.38 ml (59%). The proposed treatment was successful in achieving a volumetric reduction in lymphedema.

**Keywords:** Lymphedema, edema, treatment, cancer, breast

### Introduction

The World Health Organization estimates more than 1,050,000 new cases of breast cancer annually throughout the world, making this disease the most common form of cancer among women.(1,2) One of the main complications of breast cancer treatment is lymphedema, which occurs due to dysfunction of the lymphatic system and is characterized by the abnormal buildup of protein-rich fluids in the tissues, resulting in an imbalance between lymph formation and absorption through the lymphatic system.(3) Studies report a prevalence rate of lymphedema as high as 50% following breast cancer treatment when axillary clearance occurs.(4)

Recommended treatment for lymphedema involves a combination of therapies, such as manual and mechanical lymphatic drainage, bandaging, hygienic care, myolymphokinetic activities and exercise , medication therapy.(1) The intensive program proposed by Godoy & Godoy employs a combination of specific techniques to enhance the reduction of lymphedema, including cervical stimulation,(5) manual lymphatic drainage (Godoy & Godoy technique),(6) mechanical lymphatic drainage

(RAGodoy® device),(7) myolymphokinetic activities and the continuous use of an arm sleeve with a low degree of elasticity (Gorgurão sleeve developed by Godoy & Godoy).(1,8)

This paper describes a case of intensive treatment for the volumetric reduction of upper limb lymphedema.

### Case Report

A 65-year-old female with a diagnosis of cancer in the right breast underwent quadrantectomy with axillary clearance, followed by sessions of chemotherapy and radiotherapy. During medication treatment, the patient developed discreet proximal edema in the right upper limb. Several years later, the patient suffered a burn on the same arm, with the development of erysipelas, followed by lymphedema. Treatment involved manual lymphatic drainage, clay applications and pressotherapy, with the continuous use of an elastic sleeve. As the swelling did not subside, the patient sought the Godoy Clinic (São José do Rio Preto, Brazil), where an intensive form of treatment (Godoy & Godoy) was proposed, involving cervical stimulation, manual lymphatic drainage,

mechanical lymphatic drainage and the use of an arm sleeve with a low degree of elasticity (Gorgurão < 50) six hours a day for 10 days, with a two-day interval on the weekend. The following were the assessment measures: volumetric analysis, bioimpedance analysis and photographic documentation (Figures 1 and 2) on the first and last day of treatment. After 10 days of intensive treatment, the volumetric analysis revealed a reduction of 367 ml (51%) in the upper limb with lymphedema and the bioimpedance analysis revealed a reduction of 0.38 ml (59%).

### Discussion

The present study describes a novel intensive treatment for the reduction of lymphedema following breast cancer treatment that allows a significant volumetric reduction within a short period of time. There are no descriptions of similar approaches in the literature.

The intensive program proposed by Godoy & Godoy involves cervical stimulation (15 minutes a day), manual lymphatic drainage (Godoy & Godoy technique), mechanical lymphatic drainage (RAGodoy® device) and the continuous use of a Gorgurão sleeve with a low degree of elasticity.(1,6,7,8) Treatment began with cervical stimulation, followed by the intercalation of manual and mechanical lymphatic drainage (1 hour each), totaling approximately six hours a day. Throughout treatment, the arm sleeve was worn day and night and only removed for manual lymphatic drainage. The sleeve was adjusted once or twice a day to accompany the reduction in swelling. This is the most important aspect of sleeve use, as the result without adjustments is similar to that when no sleeve is used. The patient was constantly monitored and exhibited no problems regarding tolerance to the intensive treatment. The proposed therapy allowed periodic breaks from treatment (weekend and during manual lymphatic drainage).

The intensive form of treatment for lymphedema was originally performed on the lower limbs, with patients demonstrating good tolerance to eight hours a day of mechanical lymphatic drainage (RAGodoy®). However, this tolerance in the upper limbs was only possible by intercalating mechanical drainage with manual drainage. After 10 days of intensive treatment, bioimpedance and volumetric analysis revealed a reduction of 59% and 51%, respectively. The increase in skin volume stemming from the rapid reduction in swelling was normalized with the use of an adjusted sleeve. The patient returned to her normal activities 10 days following intensive treatment and is currently undergoing annual follow up evaluations.

### Conclusions

The intensive form of treatment for upper limb lymphedema proposed in the present study allows a

significant volumetric reduction within a short period of time.

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