

Control of Post-Bariatric Diarrhea by Intensive Treatment for Lymphedema

Yoğun Lenfödem Tedavisi ile Post Bariatrik Diyarenin Kontrolü

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ABSTRACT

Diarrhea following bariatric surgery may be secondary to multiple causes. The aim of the present study is to report a significant reduction in episodes of diarrhea with the stimulation of the lymphatic system in a patient with post-bariatric diarrhea using the Godoy method for the treatment for lymphedema. Case Report: A 40-year-old female patient with obesity was submitted to bariatric surgery, type Gastric bypass (roo-en-wy), 13 years ago. Beginning immediately after surgery, the patient began to have around 12 episodes of diarrhea per day for approximately 11 years. The patient also had lower limb lymphedema and was sent to the Clínica Godoy-Brazil for treatment. The patient underwent the Godoy Method® of intensive treatment for lymphedema. However, the most important finding was the immediate reduction in the number of episodes of diarrhea per day, which went from 12-13 to 2-3 after only one day of treatment. This result regarding diarrhea has been maintained for two years, with the maximum number of seven episodes on some days, which subsequently returned to two to three episodes. The Godoy intensive lymphedema treatment method was effective at reducing the number of episodes of post-bariatric diarrhea, offering a novel treatment option for these patients.

Key words: Post-bariatric, diarrhea, treatment, lymphedema, episodes, Godoy method

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ÖZET

Bariatrik cerrahi sonrası diyare birden fazla nedene bağlı olabilir. Bu çalışmanın amacı, post-bariatrik diyaresi olan bir hastada lenfödem tedavisi için Godoy yöntemi kullanılarak lenfatik sistemin uyarılması ile diyare ataklarında belirgin bir azalma olduğunu bildirmektir. Olgu Sunumu: 40 yaşında obez kadın hasta 13 yıl önce gastrik bypass (roo-en-wy) tipi bariatrik cerrahiye başvurdu. Ameliyattan hemen sonra başlayan hasta yaklaşık 11 yıl boyunca günde yaklaşık 12 kez diyare geçirmeye başladı. Hastada ayrıca alt ekstremitelerde lenfödem vardı ve tedavi için Clínica Godoy-Brezilya'ya gönderildi. Hastaya lenfödem için yoğun Godoy Method® tedavisi uygulandı. Bununla birlikte, en önemli bulgu, sadece bir günlük tedaviden sonra 12-13'ten 2-3'e çıkan günlük diyare ataklarının sayısındaki ani azalmaydı. İshal ile ilgili bu sonuç, bazı günlerde maksimum yedi atak sayısı ile iki yıl boyunca korunmuştur ve daha sonra iki ila üç epizod haline gelmiştir. Godoy yoğun lenfödem tedavi yöntemi, post-bariatrik diyare ataklarının sayısını azaltmada etkiliydi ve bu hastalar için yeni bir tedavi seçeneği sunuyordu.

Anahtar Sözcükler: Postbariatrik, diyare, tedavi, lenfödem, ataklar, Godoy yöntemi

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INTRODUCTION

Diarrhea following bariatric surgery may be secondary to multiple causes. The physio pathogenic mechanisms depend on the type of surgery performed. The most frequent mechanisms of diarrhea are dumping syndrome, vagotomy, short bowel syndrome, malabsorption of carbohydrates, malabsorption of proteins, changes in the microbiota, the excessive growth of bacteria, malabsorption of bile salts, pancreatic insufficiency, endocrinological disorders and addictive disorders(1-4)). One study reported that 0.5% of patients developed severe diarrhea, which was treated by the shortening of the biliopancreatic limb to 150 cm(5).

Small intestine bacterial overgrowth (SIBO) is a common side effect following laparoscopic Roux-en-Y gastric bypass (LRYGB) and may be responsible for chronic diarrhea, abdominal pain and discomfort. Although the physiopathology remains unclear, surgical management may be appropriate in select cases(1).

Bariatric surgery compromises the area of nutrient absorption, which is largely performed by the lymphatic system. Novel concepts and methods for the treatment of lymphedema have emerged in recent years and propose the normalization or near normalization of the limb and arm even in cases of elephantiasis(6-10).

The aim of the present study is to report a significant reduction in episodes of diarrhea with the stimulation of the lymphatic system in a patient with post-bariatric diarrhea using the Godoy method for the treatment for lymphedema.

CASE REPORT

A 40-year-old female patient with obesity was submitted to bariatric surgery, type Gastric bypass (rou-en-wy), 13 years ago. Beginning immediately after surgery, the patient began to have around 12 episodes of diarrhea per day for approximately 11 years. The patient also had lower limb lymphedema and was sent to the Clínica Godoy-Sao Jose do Rio Preto-Brazil for treatment. The physical examination and multi-segment bioelectrical impedance analysis revealed lymphedema in both lower limbs (Table 1).

The patient underwent the Godoy Method of intensive treatment for lymphedema, which consisted of eight hours per day of mechanical lymphatic therapy using the RAGodoy® device, which performs passive plantar flexion and extension at a frequency of 28 movements per minute; 15 minutes per day of cervical lymphatic therapy (gentle sliding movements of the skin of approximately 5 cm in the cervical region); a compression mechanism using a hand-crafted laced stocking made of non-elastic fabric (grosgrain); and approximately one hour of manual lymphatic therapy.

The muscle mass index was 58.4 kg/m². The volume of the legs prior to treatment was 17.36 ml in the right leg and 16.02 ml in the left leg. After five days of treatment, these volumes had reduced to 10.92 ml and 9.59 ml, respectively. However, the most important finding was the immediate reduction in the number of episodes of diarrhea per day, which went from 12-13 to 2-3 after only one day of treatment. This result regarding diarrhea has been maintained for two years, with the maximum number of seven episodes on some days, which subsequently returned to two to three episodes. The case was approved by Ethical Research Committee of Medicine School of São Jose do Rio Preto#5.159.598. The patient signed consent term.

Table 1 Liquid in body and limbs before and after treatment

	Total before	Total after	Reference values	water	ECW/TBW Before	ECW/TBW After
Total intracellular water	35.0	32.5	18.2 to 22.2			
Total extracellular water	25.1	21.6	11.2 to 13.6			
Total extracellular water/total body water	0.418	0.399	0.36-0.39		0.418 (0.36-0.39)	0.399 (0.36-0.39)
Right arm	1.57	2.631	1.48 to 1.80		0.380 (0.36-0.39)	0.392 (0.36-0.39)
Left arm	1.64	2.881	1.48 to 1.80		0.378 (0.36-0.39)	0.401 (0.36-0.39)
Trunk	15.0	21.71	13.5 to 16.5		0.406 (0.36-0.39)	0.394 (0.36-0.39)
Right leg	17.36	10.921	4.65 to 5.73		0.414 (0.36-0.39)	0.401 (0.36-0.39)
Left leg	16.02	9.591	4.65 to 5.73		0.441 (0.36-0.39)	0.410 (0.36-0.39)

DISCUSSION

The present study describes an unexpected therapeutic benefit during intensive treatment for lymphedema using the Godoy Method: an improvement in post-bariatric diarrhea. The patient had 10 to 13 episodes of diarrhea per day, which were reduced to two to three episodes after the first day of treatment. No previous studies in the literature have addressed this issue.

The explanation for the improvement in diarrhea is related to the main nutrient absorption pathway, which is the lymphatic system. Thus, the stimulation of the lymphatic system using the intensive lymphedema treatment method led to an improvement in this aspect. The patient has been using the compression mechanism (grosgrain stockings) for the treatment of the lymphedema and continues to lose weight. Other patients with chronic diarrhea have reported a similar improvement with this method, indicating a new line of research for these patients. However, the proper method and its reproduction are fundamental.

Further research is required to establish a simpler, more practical, and more effective form of treatment for these patients. The patient in the present case was submitted to intensive treatment (eight hours per day), but pilot studies have been initiated to identify a simpler way to achieve these results. We are currently evaluating the use of cervical lymphatic therapy 20 minutes per day on alternating days. Another possibility is to perform approximately one hour per day and the preliminary results have been promising.

The cause of lymphedema in this patient was obesity and the reduction in weight could lead to an important reduction in the lymphedema to within standards of normality. However, if the patient has additional harm to the lymphatic system, normality will not be achieved. Multi-segment bioimpedance revealed that the edema was only in the lower limbs and that treatment led to an increase in the volume of liquids in the trunk and upper limbs. This is a common finding in this form of treatment, in which an approximately 50% reduction of the edema occurs.

The loss of water occurs through diuresis and macromolecules are redistributed throughout the body(8). These macromolecules, which retained liquids in the lymphedema, begin to retain liquids in the segments without edema (trunk and upper limbs in the present case), as demonstrated by bioimpedance.

The present study offers a novel option to assist in the control of diarrhea in patients following bariatric surgery. However, it should be pointed out that, although an important improvement occurred, there is no cure. The most important aspect is the method to be employed.

CONCLUSION

The Godoy intensive lymphedema treatment method was effective at reducing the number of episodes of post-bariatric diarrhea, offering a novel treatment option for these patients.

Conflict of interest

No conflict of interest was declared by the authors.

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