

## Manual lymph drainage in patients with tumoral activity

Esther Mena Flor, MD<sup>1</sup> Enriqueta Mena Flor, PhT<sup>2</sup> Alfredo Mena Flor, PhT<sup>3</sup>

Address: 1,2,3 Instituto Oncológico Nacional Lucha Contra el Cáncer (SOLCA): Llanes 402 y Mirtos (Urdesa) Guayaquil-Ecuador  
E-mail: Esther Mena Flor: esthermenaf@hotmail.com \* corresponding author

Published: 24 August 2009  
Journal Phebology and Lymphology 2009;1:2

Received: 2 March 2009  
Accepted: 24 August 2009;1:2

### Abstract

Evidence supports the use of complex decongestive physiotherapy in cases of cancer-related lymphedema, despite the possibility of tumor recurrence due to this therapy 1. An increase of tumor recurrence resulting from lymphedema therapy is controversial. The aim of the current study was to evaluate the pattern of tumor dissemination associated with lymph drainage during the treatment of cancer. Forty-seven female and two male patients with lymphedema of the upper and lower extremities treated in the National Oncological Institute Lucha Contra el Cancer (SOLCA) in the period from 01/01/2004 to 31/10/2007 participated in the study. The ages of the patients ranged between 30 and 82 years old. All were being treated by chemotherapy in isolation or associated with radiotherapy and were submitted to clinical examinations and routine laboratorial tests for tumor markers. Thirty of the patients had lymphedema of the upper extremities and 19 of the lower extremities. Of the 49 patients, 11 had single and 8 had multiple metastasis. Five patients were no longer being treated and were in the final phase of the disease. All the patients were being treated using manual lymph drainage, bandaging and exercising and were advised about the need of personal hygiene. Of the 30 patients without metastasis, only one had tumoral activity during the study. Of the 11 patients with single metastasis, 8 had tumoral activity, two died and one continued with tumoral activity until the end of the study period. Of the 8 patients with multiple metastases, 5 died and the other three continue under treatment.

### Introduction

Evidence supports the use of complex decongestive physiotherapy in cases of cancer-related lymphedema, despite the possibility of tumor recurrence due to this therapy 1. An increase of tumor recurrence resulting from lymphedema therapy is controversial.

As in secondary lymphedema, one study found that lymph vessels were dilated, which was regarded as a consequence of tumoral obstruction, so the elevated pressure in these lymph vessels may cause hematogenous spread of the tumors through venous shunts 2.

According to Rüter, 3 the sole contraindication of manual lymph drainage is locoregional tumor recurrence, which can be completely eliminated by the immediate initiation of radical tumor treatment. Lymphatic drainage therapy for patients presenting with lymphedema after oncological therapy does not increase the rate of local recurrences. Moreover it improves the quality of life of patients after cancer therapy 4. Additionally, cancer research supports the contention that this therapy does not contribute to the spread of disease and should not be withheld from patients with metastasis 5.

In spite of the large number of patients, in different phases of cancer treatment, consulted in the clinic daily there is no consensus about the treatment of lymphedema. Doubts about the possibility that lymph drainage disseminates cancer remain. The aim of this study was to evaluate the pattern of tumor dissemination during cancer treatment associated to lymph drainage.

### Methods

Forty-seven and two male patients with lymphedema of the upper and lower extremities treated in the National Oncological Institute Lucha Contra el Cancer (SOLCA) in the period from 01/01/2004 to 31/10/2007 participated in the study. The ages of the participants ranged between 30 and 82 years old. All were being treated by chemotherapy in isolation or associated with radiotherapy. Thirty of the patients had lymphedema of the upper extremities, 29 after mastectomy and 1 due to scapular fibrosarcoma. Nineteen patients had lymphedema of the lower extremities resulting from treatment of cancer of the uterine neck, prostatic adenocarcinoma, rectal neoplasm, lymphoma and melanoma.

All the patients underwent echo-Doppler examinations, laboratorial tests for tumor markers, standard chest radiographies, mammographies, computed tomography, bone scintigraphies as the initial evaluation in the oncological treatment and as routine control of the treatment.

Of the 49 patients, only 11 had single and 8 had multiple metastasis. Five patients were no longer being treated and were in the final phase of the disease. For 42 patients the Karnofsky index was above 90% and for 5 patients this index was between 50% and 70%. The diagnosis of lymphedema was clinical. All the patients were being treated using manual lymph drainage, bandaging and

exercising and were advised about the need of personal hygiene.

### Results

Of the 30 patients without metastasis, only one presented with tumoral activity in this period.

Of the 11 patients under treatment with single metastasis, eight were without tumoral activity: there were two deaths and one continued with tumoral activity. Of the 8 patients with multiple metastases, 5 died and the other three continue under treatment (Table 1).

**Table 1:** metastasis and death of the patients at the end of the study period

Metastasis	Patients	No metastasis	With metastasis	Deaths
Absent	30	29	1	0
Single	11	8	1	2
Multiple	8	0	3	5

### Discussion

The current study evaluated the tumoral evolution of oncological patients in respect to metastasis during cancer treatment associated with clinical lymph drainage, with manual lymph drainage being a routine part of the treatment. Three groups of patients were defined: absence of metastasis, single metastasis and multiple metastases. In the group without metastasis, only one patient evolved with metastasis in this period. For the group of 11 patients with single metastasis, 8 patients presented without metastases by the end of the treatment.

These data show that the treatment of lymphedema, including lymph drainage, does not aggravate the conditions of metastasis during cancer treatment. The tumoral markers and the evaluation of images suggest that the metastasis was controlled and even reduced in this period. Thus in this study, the treatment of lymphedema did not aggravate the clinical status of oncological patients but benefited patients in relation to the edema, mobility of joints and pain. The clinical control of edema was performed monthly and after the reduction of the edema, lymphedema treatment was maintained only at return consultations. The treatment was ceased in patients who suffered worsening of the disease and who returned to their homes.

Lymph drainage proved to be useful for these patients who, as well as the physical treatment, received psychological support which provided more comfort. The multidisciplinary team increases the types of therapies offered to these patients, thereby increasing the care offered at such a difficult time for patients.

There are few published studies that evaluate lymph drainage in patients with controlled and active cancer 1-5. In this study, these two aspects were investigated with lymph drainage providing benefits without additional risks in the evolution of the disease. Fernández & Lozano 6 reported that tumoral evolution depends on the characteristics of the tumor and that the mechanical effect

of lymph drainage does not aggravate the evolution of the disease. In 1998 Preisler & Hagen 4 performed manual lymph drainage in patients with cancer of the uterine neck and did not observe deterioration of the status of the patient due to lymph drainage, but an improvement in the quality of life.

Three groups were characterized in the current study: group in the control phase of the disease without any evident metastasis, an intermediate phase group and a group in the end phase of the disease. For the patients in the intermediate phase group with single metastasis, the cancer treatment eliminated metastases in 8 of the 11 patients as seen by laboratorial control examinations. This suggests that the oncological treatment was efficacious and that lymph drainage was not detrimental in respect to the results.

Despite of the controversy of lymph drainage in cancer patients, there is a lack of studies to define the safe indication of manual lymph drainage. Thus, this study contributes, in spite of its limitations, and reinforces the necessity of more studies on this subject.

### Conclusions

The treatment of lymphedema, including lymph drainage, does not aggravate the metastasis of cancer patients.

### References

- 1.Vereecken P, Mathieu A, Laporte M, Petein M, Heenen M. Spread of melanoma after lymphatic drainage: re-launching the debate. *Int J Clin Pract.* 2003 Jun;57(5):444-5.
- 2.Kett K. Lymph drainage as prognostic factor in breast carcinoma. *Langenbecks Arch Chir Suppl Kongressbd.* 1997; 114:1219-21.
- 3.Rüger K. Diagnosis and therapy of malignant lymphedema. *Fortschr Med.* 1998 Apr 30; 116(12):28-30, 32, 34.
4. Preisler VK, Hagen R, Hoppe F. Indications and risks of manual lymph drainage in head-neck tumors. *Laryngorhinootologie* 1998 Apr;77(4):207-12.
- 5.Godette K, Mondry TE, Johnstone PA. Can manual treatment of lymphedema promote metastasis? *J Soc Integr Oncol.* 2006 ;4(1):8-12.
6. Fernández A, Lozano C; *Drenaje Linfático Manual edición Nueva Estética Barcelona (1998).*
- 5-Massagué J Proceedings of the National Academy of Sciences, *Nature* N°12, (2007).
- 6.Isaac Ch, *Masaje y Drenaje Linfático Manual, pacientes bajo tratamiento para el cáncer de mama. Madrid (2003).* p. 1-9.

7.Echanique. M. recuento preoperatorio de plaquetas en el cáncer de páncreas y su valor pronóstico. *Actualización Rev. Esp. Enf* 2003; 11: 748-7.

8.Hanahan D, Folkman J, patterns and emerging mechanisms of the angiogenic switch during tumorigenesis. *Cell* 1996; 86:353-364.

9. Woodhouse EC, Chuaqui RF, Liotta LA. General mechanisms of metastasis. *Cancer* 1997; 80: 1529 -1537.

10.Tuck AB, Arsenault DM, O' Melley FP, et al. Osteopontin induces increased inveness and plasminogen activator expression of human mammary epithelial cells *Oncogene* 1999;18:4237-4246.

11.Nicolson GL. Expression, cellular diversification and tumor progression to the metastatic phenotype. *Bioessays* 1991;13: 337.

12.Liotta LA. Tumor invasion role of the extracellular matrix. *Cancer Res* 1986, 46:1-7.

13.Boon T, Old LJ. Cancer tumor antigens. *Curr opin Immunol* 1997; 20: 1-14.

14.Bos JL, Fearon EL, Hamilton SR, ras oncogenes in human colorectal cancer; a review *Cancer Res* 1989;49:4682- 4689.

15.Schlom J, Abrams S. Tumor immunology. *Cancer medicine* 2000; 153-162.

16.Holland F, Liotta L, kohn E. American Cancer Society, invasion and metastases 2000;121-128.

17.Folkman J. American Cancer Society, tumor angiogenesis 2000;133-145.