

# Prevention and treatment of secondary lymphedema of the arm in breast cancer patients

Svetlana POPOVIĆ-PETROVIĆ<sup>1</sup>  
Milka VASOVIĆ<sup>2</sup>  
Miroslav NEDELJKOVIĆ<sup>1</sup>

A program of early postoperative rehabilitation (kinesy therapy and education) has been conducted since 1996 in our Department for Rehabilitation at the Institute of Oncology in Sremska Kamenica. The aim of this program is to prevent the appearance of secondary lymphedema of the arm and the contacture of the shoulder. Unless the patient, in further follow up, does not have any complication, a program of "late" rehabilitation is conducted. If secondary lymphedema of the arm (SLEA) is evolved, then the patient is submitted to a complex of decongestive physical therapy (CDP) or CDP and sequential pneumatic compression (SEPC). However, if SLEA and local alterations on the skin exist, we immobilize the arm (mitela, plaster). In other cases without SLEA, e.g. peri-arthritis or the damage of brachial plexus, we perform physical procedures (kinesy therapy, TENS, kryo-massage and acupuncture). With regard to the degree of complication of SLEA and consequences that might develop the starting point should be directed towards early detection of SLEA.

<sup>1</sup>INSTITUTE OF ONCOLOGY SREMSKA KAMENICA, SREMSKA KAMENICA, YUGOSLAVIA

<sup>2</sup>DEPARTMENT FOR RHEUMATISM, NOVI SAD, YUGOSLAVIA

**KEY WORDS:** Breast Neoplasms; Lymphedema; Arm; Physical Therapy

Archive of Oncology 2002, 10(2):77-78©2002, Institute of Oncology Sremska Kamenica, Yugoslavia

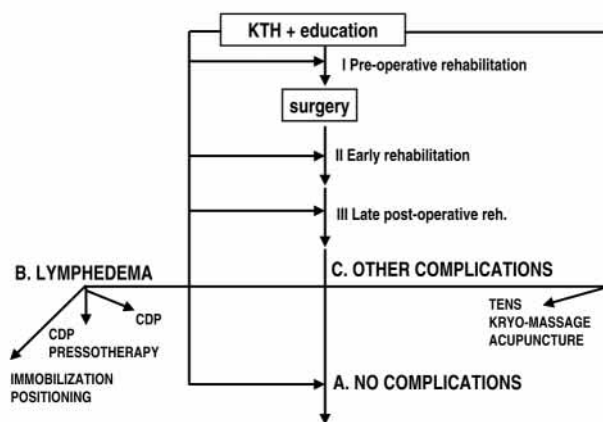
## INTRODUCTION

Secondary lymphedema of the arm (SLEA) is the most common complication of operative treatment and/or radiotherapy of breast cancer. It develops in an interval of a few months to several years after the therapy of primary disease (1).

In order to prevent and early detect SLEA and also to conduct physical treatment as early as possible, the Department for Rehabilitation at the Institute of Oncology in Sremska Kamenica began to deal with this problem in 1996 (Dr. M. Vasović, Dr. N. Radaković)(2-4).

## PREVENTION AND TREATMENT OF SLEA

In this paper, we present the algorithm of preventive measures and therapeutic procedures that we conduct in our breast cancer patients (Figure 1).



**Figure 1.** The algorithm of preventive and therapeutic procedures in breast cancer patients

**I.** Program of preoperative rehabilitation includes education, and informing the patients with what is to be done in the postoperative period due to possible functional damages after the treatment of breast cancer.

**II.** On the second postoperative day we conduct the program of so-called early rehabilitation that consists of:

- Instruction on the elevation of the arm on the operated flank;
- Positioning in the bed (the shoulder placed in moderate flexion and abduction with a semi-flexion elbow);
- Kinesy therapy: four or five exercises designed in the manner in which the patient can work out in bed or in upright position, as

Address correspondence to:

Dr. Svetlana Popović-Petrović, Institute of Oncology Sremska Kamenica, Institutski put 4, 21204 Sremska Kamenica, Yugoslavia

The manuscript was received: 17. 06. 2002.

Provisionally accepted: 04. 07. 2002.

Accepted for publication: 15. 07. 2002.

assisted exercises which he performs and to the limit of pain. Along with this program, the patient also performs respiration exercises. The exercises should be performed three times a day with the aim of preventing SLEA and contracture of the shoulder. Additionally, in this phase the recommendations are given as to what should be avoided (heath, loading the arm, long term static position, trauma, injections and infusions on the arm of the operated flank).

The first control at the physiatrist is recommended one month after the operation.

**III.** On the control check-up given that:

A. There is no complication (such as SLEA, damage of brachial plexus, infection), the program of "late rehabilitation" is conducted, i.e. kinesy therapy (KTH) with the aim of: preserving the extent of the movements in the shoulder (this period is very important since in a number of patients a radiotherapy is commencing), and preventing the SLEA by exercises with an elevated arm and exercises in order to activate the muscle pump. At intervals of three months, the patient comes to a physiatric control.

B. SLEA is evolved

1. A complex of decongestive physical therapy is performed consisting of:

- Skin care: washing with neutral soaps and protection against infection;

- KTH exercises from the program of "late" rehabilitation;

- Manual lymphodrainage (MLD) which is performed centripetally, beginning from the tips of the fingers up to the humero-scapular region, through moderate pressure and somewhat stronger pressure at the sites of fibrosis. The treatment lasts 10 days and it is performed once a day for 30 minutes. The cycles can be repeated.

- Bandaging of the arm: is obligatory during performing the exercises and after MLD and after device-assisted pressotherapy. When the circumference is diminished, one places an elastic sleeve.

2. Complex of decongestive physical therapy (CDP) possibly combined with SEPC (device Green press 12, with sleeve consisting of 12 channels in which a wave of ascending pressure is generated). Usually the pressure does not exceed 45-60 mm Hg. Daily treatment lasts an hour and the whole treatment lasts 10 days. After the treatment completion, a bandage is placed to the arm.

3. If the SLEA is accompanied with infection (erysipelas, cellulite), an antibiotic therapy is mandatory. If there are local metastatic alterations along with SLEA, and an expressive pain caused by movement or paralysis of brachial plexus, one introduces a mitela in order to immobilize the arm in a relieving position.

4. If a pathological fracture exists along with SLEA orthopedic

consultation is needed (possibly stucco immobilization).

C. Other complications without SLEA exist, e.g. peri-arthritis humeroscapularis or damage of the brachial plexus along with KTH, we apply TENS, kryo-massage and acupuncture (2-5,8).

## **CONCLUSION**

---

By such a designed program we try to prevent SLEA, and by regular check-ups we detect early stages of SLEA.

## **REFERENCES**

---

1. Petrek AJ, Pressman IP, Smith AR. Lymphedema: current issues in research and management. *CA Cancer J Clin* 2000;50:292-307.
2. Vasović M, Radaković N, Popović S. Rehabilitation procedures in the treatment of lymphedema of the arm after mastectomy performed for breast carcinoma. *Archive of Oncology* 1996;4:207-8.
3. Radaković N, Popović S, Vasović M. Physical pain therapy in patients after mastectomy. *Archive of Oncology* 1996;4:209-11.
4. Radaković N, Popović-Petrović S, Vranješ N, Petrović T. A comparative pilot study of the treatment of arm lymphedema by manual drainage and sequential external pneumatic compression (SEPC) after mastectomy. *Archive of Oncology* 1998;6:177-8.
5. Brennan JM, Miller TL. Overview of treatment options and review of the current role and use of compression garments, intermittent pumps and exercise in the management of lymphedema. *Cancer* 1998;83:2821-7.
6. Rinehart-Ayres EM. Conservative approaches to lymphedema treatment. *Cancer* 1998;83:2828-32.