

Management of lymphedema is really a matter in patients with breast cancer

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Abstract

Lymphedema is a prevalent complication affecting patients with breast cancer, greatly impacting their quality of life. This editorial describes diagnostic methods and therapeutic interventions for managing lymphedema in patients with breast cancer. Diagnosis relies on clinical evaluation and objective measures, including arm circumference and volumetric assessments, along with lymphoscintigraphy and ultrasonic measurements. Treatment primarily involves complex decongestive physical therapy, comprising manual lymphatic drainage, compression therapy, exercise, and meticulous skin care. These interventions aim to reduce swelling, alleviate discomfort, and prevent further complications. Additionally, lifestyle modifications such as avoiding extreme temperatures and maintaining proper hygiene are essential. Flavonoids can be used for drug therapy. Despite its prevalence, lymphedema often receives inadequate attention in clinical practice, emphasizing the importance of raising awareness and enhancing medical services for affected individuals. Clinicians play a pivotal role in educating patients about preventive measures and ensuring timely intervention. Overall, a comprehensive approach encompassing early diagnosis, multidisciplinary management, and patient education is essential to mitigate the burden of lymphedema in patients with breast cancer and improve their overall well-being.

Key Words: Lymphedema; Breast cancer; Complex decongestive physical therapy; Diagnosis; Treatment

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Core Tip: This editorial describes the diagnosis and management of lymphedema in patients with breast cancer. Lymphedema, a common complication of breast cancer treatment, greatly impacts patients' quality of life and psychological well-being. Diagnosis relies on clinical evaluation and objective measures, including arm circumference and volumetric assessments, as well as lymphoscintigraphy and ultrasonic measurements. Treatment involves complex decongestive physical therapy comprising manual lymphatic drainage, compression therapy, exercise, and skin care. Early diagnosis and proper treatment are essential for effective management of lymphedema in patients with breast cancer.

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INTRODUCTION

Lymphedema is an abnormal accumulation of protein-rich fluid in interstitial spaces due to a compromised lymphatic system[1]. In patients with breast cancer, lymphedema commonly occurs in the arm on the operated side because of regional lymph node involvement of the tumor, surgical removal of the lymph nodes for tumor treatment, and radiation therapy[2]. The incidence of this condition following breast cancer treatment has been reported at 5%-60%; such differences in incidence may be attributed to differences in diagnostic criteria, measurement methods, and follow-up periods[3]. The condition is considered as incurable and is a major factor decreasing the quality of life of patients with breast cancer[4]. In addition to cosmetic problems, physical discomfort, and functional impairment, lymphedema causes various psychological problems, such as depression, anxiety, and social avoidance[4]. Moreover, patients often experience inflammation from lymphangitis or cellulitis[5,6]. Stagnant proteins in tissues affected by lymphedema serve as a good medium for bacterial growth, increasing the likelihood of an infection[6]. Therefore, prevention, early diagnosis, and proper treatment of lymphedema are crucial.

In this editorial, we comment on a paper by Mubarak *et al*[7] published in a recent issue of *World Journal of Clinical Cases*. The authors described that the presence of tumor deposits in patients with breast cancer indicates a poor prognosis and recommended that clinicians should carefully investigate the presence of tumor deposits. We describe the diagnosis and management of lymphedema, another important issue in patients with breast cancer.

DIAGNOSIS

Although there is no gold standard test for diagnosing lymphedema, common complaints from patients include feeling heavy, tightness, and/or pain. The objective method most commonly used in clinical practice is measurement of both the left and right arm circumferences at the same position, where a difference of > 2 cm between arms is used to diagnose moderate lymphedema[2,8]. A difference of ≤ 2 cm is considered to indicate mild lymphedema[2]. Volumetric methods can also be used, including the water replacement method, which defines lymphedema as a difference of ≥ 200 mL in volume between the two arms[9]. These assessments should be performed preoperatively and within 1 mo postoperatively; once lymphedema has been identified, weekly assessment should be considered[10]. Upon the completion of treatment, follow-up should be performed every 2-3 mo for 1-2 years[10]. Although medical history assessment and clinical examinations may be sufficient for diagnosis, lymphoscintigraphy can be performed to examine the functional status of the lymphatic system and predict treatment outcomes and prognosis[11]. Moreover, ultrasonic measurement of the thickness of the skin and subcutaneous fat layers as well as changes in echogenicity may also help in diagnosis and severity determination[12].

TREATMENT

Complex decongestive physical therapy, which is primarily used to treat lymphedema, consists of four components: Manual lymphatic drainage, compression therapy, exercise therapy, and skin care[13,14]. This therapy typically involves 2-6 wk of intensive therapy followed by several months of management[13,14]. The effects of properly administered complex decongestive physical therapy and appropriate management of lymphedema can last from several months to as long as 2 years or more[13,14]. In addition, prophylactic administration of this therapy after breast cancer surgery has been reported to reduce the incidence of lymphedema[15].

Herein, we discuss individual therapies comprising complex decongestive physical therapy. Manual lymphatic drainage is a highly specialized massage technique designed to increase the movement of lymphatic fluid (Figure 1)[16]. Slow and rhythmical massage is used to drain congested lymphatic fluid from the non-functioning lymph node to areas that remain functional; the lymphatic fluid is then removed through the remaining lymph nodes. This massage technique is performed in a proximal-to-distal direction[17] with very superficial and light pressure of approximately 30-45 mmHg

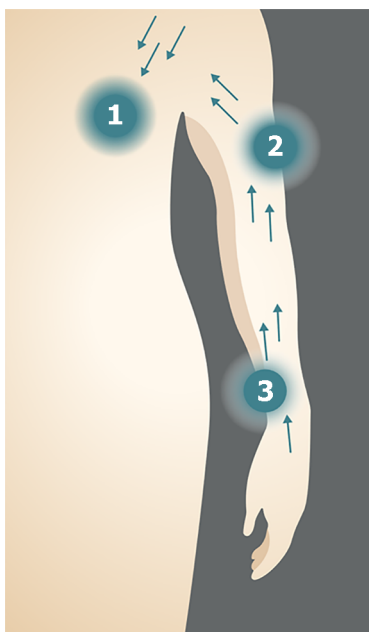


Figure 1 Manual lymphatic drainage. The entire palm is used to gently massage towards the direction of the heart. Massage is subsequently performed from the (1) axilla to (2) the upper arm and then to (3) the forearm.

[18].

Compression therapy involves application of external force, which increases the tissue pressure and facilitates lymphatic and venous circulation to promote lymphatic duct functions[19]. Moreover, it can facilitate the distribution of protein components in fibrotic arm tissues. As compression therapy, a compression bandage (Figure 2A) or compression stocking (Figure 2B) can be applied and should be worn during exercise and activities of daily living[20]. When applying the compression bandage method, a short-stretch, non-elastic bandage is used to increase the working pressure[21]. The patient is also instructed to wear a compression stocking to reduce swelling and maintain an appropriate arm shape and protect the skin, while applying compensatory pressure on the skin that has been stretched and lacks elasticity after the swelling has been reduced[22]. In addition, wearing a compression stocking can enhance the flow of lymphatic fluid, which reduces protein buildup and improves venous circulation[22].

Exercises include upper extremity range of motion exercises, stretching, and resistive exercises for muscle strengthening aimed at preventing and reducing lymphedema[23,24]. Moreover, aerobic exercise can increase sympathetic nervous system activity to enhance the flow of lymphatic fluid[23,24]. These exercises should be performed while wearing a compression bandage or compression stocking to prevent increased lymphatic fluid from pooling on the skin surface[25].

Finally, thorough skin care should be administered to patients with lymphedema[26]. Measures should be taken to prevent and maintain proper hygiene to minimize bacterial infection and lymphedema.

Patients should avoid saunas and tub baths, as they can increase the risk of lymphedema, and should avoid exposure to extreme cold or heat[27]. As dieting can help reduce lymphedema volume, a reduced dietary calorie intake and low-fat diet are recommended to some patients[28].

As drug therapy, flavonoids can be used[29] to enhance lymphangiogenesis and reduce capillary permeability. If there are findings of secondary infection, appropriate antibiotics should be administered immediately[30]. Diuretics are not effective in the long term, as they can exacerbate edema by increasing protein accumulation in the interstitial space.

Surgical treatment is another option for patients with lymphedema that is not controlled by conservative treatment. Microsurgical lymphovenous anastomoses, debulking, and liposuction can be performed to remove excess fluid or tissue and relieve symptoms[31]. However, surgical procedures can lead to complications such as delayed wound healing, infection, and recurrence, and, therefore, should be carefully selected.

CONCLUSION

Lymphedema commonly occurs in patients with breast cancer, which can affect not only the quality of life but also physical function and has a negative psychological impact. Therefore, lymphedema should be actively controlled through early diagnosis and proper treatment. Despite the high need for treatment, effective treatments for lymphedema are lacking for patients with breast cancer. Clinicians should acquire sufficient knowledge on the diagnostic and treatment methods and actively provide appropriate medical services to these patients.



Figure 2 Compression therapy. A: Application of a compression bandage; B: Compression stocking.

FOOTNOTES

Author contributions: Choi JE and Chang MC designed and performed the study, analyzed the data, and wrote the manuscript; both authors have read and approved the final manuscript.

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