International Journal of Science and Research Archive
eISSN: 2582-8185
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.net/

(REVIEW ARTICLE)

Check for updates

Lymphedema after gynaecological cancer How can it be prevented? How can it be managed?

Fouad Ech chouyekh *, Zineb Tazi,Yassine Belhaj, Sofia Jayi,FZ Fdili Alaoui,Hikmat Chaara and MA Melhouf

Gynaecology and Obstetrics Department II, Hassan II University Hospital, Fez, Morocco.

International Journal of Science and Research Archive, 2025, 17(03), 877–884

Publication history: Received 11 November 2025; revised on 20 December 2025; accepted on 22 December 2025

Article DOI: https://doi.org/10.30574/ijsra.2025.17.3.3273

Abstract

Lymphedema is an inflammatory condition caused by the accumulation of lymphatic fluid following damage to the lymphatic system, after cancer treatment and particularly after lymph node dissection.

The prevalence of lymphedema remains significantly underestimated. Too few affected patients receive treatment

The possibility of effective prevention through early treatment of lymphedema should encourage practitioners to pay more attention to edema and treat it in order to prevent the chronicity of edema initially considered common

Given the considerable psychosocial and physical burdens associated with more advanced stages, early detection of cancer-related lymphedema is essential to minimize disease progression

And to further encourage practitioners to integrate the management of lymphedema into their daily practice, we provide a brief reminder through this article which focuses particularly on cancer-related lymphedema, which can develop weeks, months or years after oncological treatments, presenting risk factors, anamnesis and physical examination to make a clinical diagnosis, as well as the management of this problem.

Keywords: Lymphedema Godet's sign; Stemmer's sign; lymph node dissection

1. Introduction

Lymphedema is an inflammatory condition caused by the accumulation of lymphatic fluid following damage to the lymphatic system, after cancer treatment and particularly after lymph node dissection.

The prevalence of lymphoedema remains significantly underestimated. Too few patients receive treatment.

The possibility of effective prevention through treatment as soon as lymphoedema develops should encourage practitioners to pay greater attention to oedema and treat it in order to prevent the chronicity of oedema initially considered to be common.

Given the considerable psychosocial and physical burdens associated with more advanced stages, early detection of cancer-related lymphoedema is essential to minimise the progression of the disease.

And to further encourage practitioners to integrate the management of lymphoedema into their daily practice, this article provides a brief reminder, focusing in particular on cancer-related lymphoedema, which can develop weeks,

* Corresponding author: Fouad Ech chouyekh

months or years after cancer treatment, presenting risk factors, medical history and physical examination for clinical diagnosis, as well as management of this problem.

1.1. Definition

Lymphoedema is persistent, chronic swelling of a part of the body, most commonly affecting the limbs, which is linked to a build-up of lymph fluid in the subcutaneous tissue following cancer treatment, particularly after lymph node dissection.

1.2. Pathophysiology

The lymphatic system removes excess fluids, proteins and other molecules from the intercellular space. If this drainage system malfunctions, the tissues become congested, initially causing tension and then swelling known as oedema. The oedema gradually becomes denser and can develop into a chronic, debilitating and discouraging condition if not treated properly: lymphoedema.

There are various types of lymphoedema, but they all share the characteristics of being chronic and having a significant impact on quality of life. It is not painful, but appears as swelling, sometimes significant, of one or more limbs, the genitals or the face.

Treatment must be continuous and involves different approaches depending on the clinical situation.

A distinction is made between primary and secondary oedema, although the two can coexist.

- Primary lymphoedema may be present from birth or develop during life, and is often syndromic.
- Secondary lymphoedema is mainly related to cancer treatments.

The lymphatic system is responsible for part of the maturation and activity of the immune system. It also provides drainage and filtration, which ensures fluid balance in the intercellular spaces.

When the loaded fluids reach the lymph nodes, they undergo sorting, which partially separates the mixture of very small molecules such as water from large molecules such as proteins or even larger structures such as bacteria or metastases from a tumour site. Most of the small elements return to circulation via the lymph node's own microcirculation and its vein. Only the large elements are sequestered within the lymph node for a time and then continue their lymphatic journey.

Each group of lymph nodes drains from, and is dependent on, several adjacent areas of our body. For example, the arm drains, in part, into the same lymph nodes as the breast. The leg drains, in part, into the same lymph nodes as the external genital organs.

Metastases that leave the primary tumour are temporarily stopped in the first lymph nodes, called sentinel nodes, which are removed by the surgeon during cancer treatment, which can interrupt part of the drainage network of all the areas affected by the removed nodes.

Fortunately, this network is so dense and interconnected that diversions are quickly established, allowing for total or partial compensation for the drainage of the areas. When compensation is insufficient or no longer sufficient, fluids and cellular waste accumulate in the tissues, gradually leading to swelling in areas with poor or inadequate drainage.

2. Classification

- **Stage 1:** the oedema is fluctuating and reversible, appears periodically, disappears at rest. The oedema starts in the thigh, pubic area or genitals and then spreads down the leg. It may be bilateral from the outset or start in the foot. Presence of pitting oedema.

Given the context, it must be treated immediately, otherwise it will progress to stage 2.

- **Stage 2 Grade a**: the oedema becomes permanent with the presence of pitting (lymphoedema is always fluid-based) but does not completely subside with rest.

- **Stage 2 Grade b**: the tissues change, becoming hard (fibrosis and fattening), the skin thickens, the cup sign is less present, and the oedema decreases slightly at rest. Stemmer's sign appears (pinching the skin at the base of the second toe or finger assesses the thickness of the skin fold. Difficulty lifting the skin indicates a positive Stemmer's sign, which may be present regardless of the stage of lymphoedema.): if present on the feet, it is a pathognomonic sign of lymphoedema: it only occurs in this condition.
- **Stage 3:** the volume of the limb is greatly increased with the presence of trophic disorders: hyperkeratosis, vesicles and lymphatic warts.

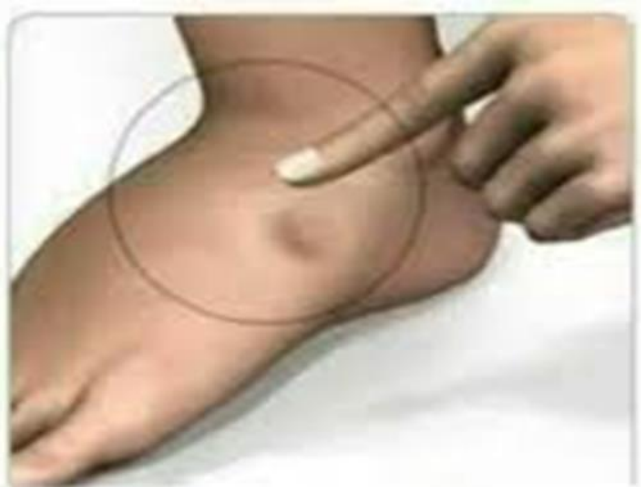

Figure 1 Godet's sign

Figure 2 Positive Stemmer sign on the left foot

Figure 3 Stages of lymphoedema in a lower limb

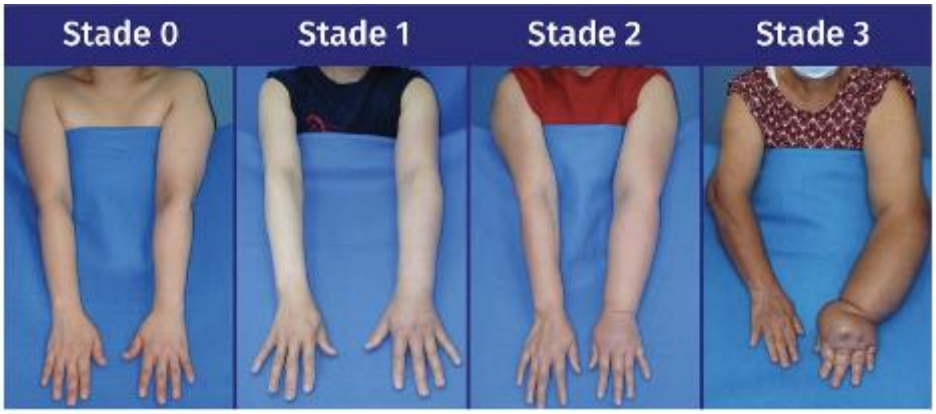

Figure 4 Stages of lymphoedema in an upper limb

2.1. Risk factors

- Having a lymph node dissection
- Number of lymph nodes removed
- Post-operative radiotherapy
- Lymph node metastases
- An infection or inflammation that has damaged the lymph vessels
- Obesity

2.2. Diagnosis

Lymphoedema does not appear suddenly out of nowhere; it develops slowly, gradually and discreetly until the skin can no longer withstand pressure.

The onset time ranges from 6 weeks to 9–12 months. Lymphedema of the lower limbs can appear with a median of 13.5 months, and 75% of lymphedema cases appear within the first year. There is time to ask questions and possibly perform a clinical examination by simply measuring the circumference of the legs or arms to screen for people who may develop secondary lymphedema at a later stage.

Early diagnosis must be implemented in routine surgical practice, looking for early signs that precede the onset of clinical lymphoedema by several weeks or even months, because we are more likely to be effective if we tackle things from the outset.

No additional tests are needed; the clinical picture and context speak for themselves. Therefore, we must look for:

- swelling of an arm or leg, which may include the fingers or toes
- feeling of fullness, swelling or heaviness in the arm, leg or genital area
- continuous pain or burning sensation in the limb
- Tightness or warmth in the skin of the arm, leg or genital area
- Difficulty moving a joint in the arm or leg
- Hardening or thickening of the skin
- Feeling that clothes or jewellery are too tight

Finish the examination with a simple bilateral and comparative perimetry of the limbs.

Then, if lymphoedema is present, assign a stage according to the severity of the symptoms.

2.3. Prevention

- Do not perform a lymph node dissection.
- Reduce the number of lymph nodes removed.
- Post-operative radiotherapy should be more targeted, which significantly reduces damage to the lymphatic system (therapeutic de-escalation).
- Lymph node metastases
- Obesity
- For surgery: Surgery must be more selective and less aggressive for the lymphatic system, respecting the circumflex GGs during pelvic lymph node dissections, Eliminate systematic lymph node dissections, Sentinel lymph node biopsy

2.4. Treatment

Lymphedema treatments are based on its severity and aim to:

- reduce swelling;
- relieve pain;
- prevent it from worsening;
- prevent infection;
- increase movement and use of the arm or leg.

The importance of this therapy lies in starting treatment at the early stage, as this is when it is most effective, to prevent progression to an advanced stage.

2.4.1. Skin Care

Proper skin and nail care can help prevent infections and keep lymphedema from worsening. Furthermore, in lymphedema, the skin undergoes a transformation, thickening and drying out, leading to the formation of fissures, blisters, and even infections such as erysipelas.
Treat the blisters (the skin becomes increasingly thin due to the pressure of the lymphocele), as these are entry points for infection that will worsen the lymphocele.

2.4.2. Engage in physical activity.

Lymphatic circulation is physiologically very slow, and to accelerate drainage, movement is necessary. Light exercises are recommended, ideally while wearing compression garments. Swimming is advised: the water provides pressure on the lower limbs equivalent to wearing 25-30 mmHg compression stockings.

2.4.3. Avoid excess weight:

Excess weight can lead to lymphedema. It can also make lymphedema more difficult to manage.

Gentle physiotherapy, including manual lymphatic drainage.

2.4.4. Compression,

especially compression bandages, reduces edema. Once the pitting edema has disappeared, compression stockings can help prevent further lymph accumulation in the area.

- **Microsurgical repair techniques**: venolymphatic anastomoses (AVL):

This involves attaching lymphatic vessels to neighboring veins in the area where lymph nodes have been removed. It is a newer procedure used to treat some people with lymphedema. This surgery does not cure lymphedema, but it allows for a permanent reduction in swelling.

- **Lymph node transfers**:

Lymph node transfer is a surgical procedure currently being studied in clinical trials for the treatment of people with lymphedema. It involves moving lymph nodes from a tissue containing lymph nodes to the area where the lymph nodes have been removed.

- **Gene therapy**:

study on secondary lymphedema of the upper limb: Theralymph study: researchers will inject a modified virus carrying messenger RNA with a factor that will stimulate the formation of new lymphatic vessels.

- **Medications: -** targeted use of anticancer substances, research into drugs aimed at stimulating the formation of lymphatic vessels, reducing fat accumulation, and inflammation

2.5. Therapeutic Education +++

- Understanding the disease and knowing how to manage it
- Learning healthy lifestyle habits
- Self-care (bandages, lymphatic drainage, skin care)
- Adapted physical activities, sports
- Weight management
- Wellness activities: significant mental burden (YOGA…)
- Spa treatments
- Psychological support, support groups
- Importance of patient partners and associations
- → Empowering the patient

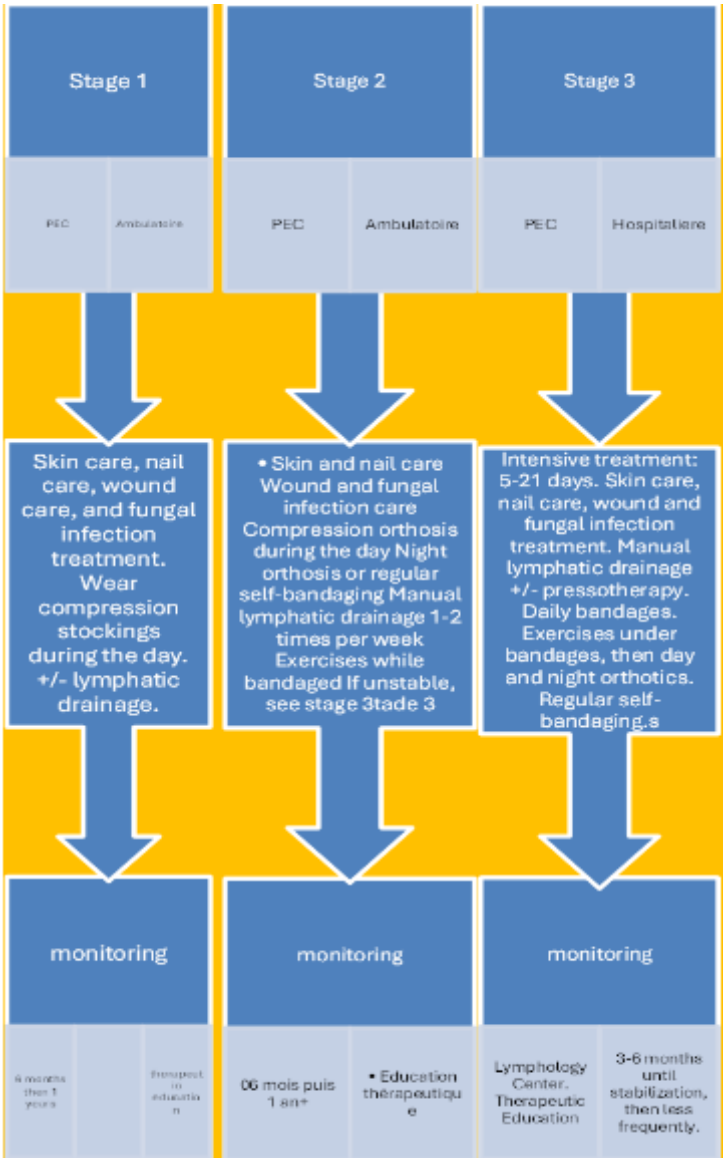

Figure 5 Flowchart of lymphedema management

3. Conclusion

The prevalence of lymphedema remains significantly underestimated. Too few affected patients receive treatment. Management requires several specifically trained professionals and must be considered a long-term approach given the chronic and incurable nature of this condition. Early management and prevention of lymphedema are therefore of paramount importance in order to reduce its incidence and prevalence, its complications, secondary functional disabilities, and limit the decline in patients' quality of life, as well as healthcare costs.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

[1] Le lymphœdème lié au cancer Genevieve Chaput and Marize Ibrahim .Canadian Family Physician October 2023; 69 (10) e206-e210; DOI: https://doi.org/10.46747/cfp.6910e206

[2] Petrek JA, Pressman PI, Smith RA. Lymphedema: current issues in research and management. CA Cancer J Clin 2000;**50**(5):292-307. **CrossRefPubMedGoogle Scholar**

[3] Lawenda BD, Mondry TE, Johnstone PA. Lymphedema: a primer on the identification and management of a chronic condition in oncologic treatment. CA Cancer J Clin 2009;**59**(1):8-24.**CrossRefPubMedGoogle Scholar**

[4] Vignes S, Poizeau F, Dupuy A. Cellulitis risk factors for patients with primary or secondary lymphedema. J Vasc Surg Venous Lymphat Disord 2022;**10**(1):179-85.e1. Publ. en ligne du 3 mai 2021. **Google Scholar**

[5] Societe canadienne du cancer : lymphœdème

[6] lymphœdème : CHU Saint-Pierre/UMC Sint-Pieter

[7] Didier Tomson ,Claudia Lessert ,Dirk Klumbach ,Michèle Depairon Prévention des troubles lymphatiques et de leurs complications DOI: 10.53738/REVMED.2012.8.327.0315