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**SUBCUTANEOUS DRAINAGE IN LYMPHEDEMA TREATMENT
IN PROSTATE CANCER PATIENTS****HIGHLIGHTS**

1. Prostate cancer should receive equal attention as other cancers.
2. Lymphedema subcutaneous drainage is beneficial in prostate cancer.
3. Palliative prostate cancer patients especially benefit from SLD.

Cátia Manuela Azevedo Ferreira¹ Diana Moura Santos² Vanessa Tatiana Vieira Real³ Paulo Alexandre Oliveira Marques⁴ **ABSTRACT**

Introduction: this article sought to deepen knowledge about the subcutaneous lymphatic drainage technique as a form of palliative treatment for secondary lymphedema in prostate cancer patients. **Development:** literature review carried out between November 13 and 17, 2023, in the Medline and CINHALL databases. The literature supporting this analysis is scarce, both in terms of studying the technique on site and standardizing the procedure. These considerations explain the benefits that the technique offers in improving men's quality of life, in the sexual, psychological and social contexts, and in the economic repercussions. **Conclusion:** subcutaneous lymphatic drainage is a technique that is little known, and little used in clinical practice, but it is an option to consider in the treatment of secondary lymphedema in a palliative context, as it can improve the patient's quality of life.

KEYWORDS: Drainage; Lymphedema; Prostate Cancer; Palliative Care.

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INTRODUCTION

Prostate cancer is the second most common cancer affecting men worldwide¹ and involves various types of treatment, such as surgery, chemotherapy and radiotherapy. In men undergoing surgery, lymphedema of the lower limbs and the scrotal and suprapubic regions may appear.

Lymphoedema results from an injury to the lymphatic system which causes fluid accumulation of plasma proteins in the interstitial space, fat deposition, chronic tissue inflammation and fibrosis²⁻³. Clinical symptoms include abnormal tissue edema, changes in the skin and subcutaneous tissue, pain, a feeling of heaviness and impaired limb function³, resulting in a negative impact on the quality of life of these people⁴.

Portugal's ANDLymph (National Association of Sufferers of Lymphatic Disorders)⁵ explains that lymphedema can be classified as primary or secondary. Primary lymphedema is rare and can be caused by abnormal development of the lymphatic system. Symptoms can be present at birth, develop at puberty or in middle age. Secondary lymphedema is caused by damage to a healthy lymphatic system, caused by venous disease, reduced mobility, cellulite, obesity, trauma and oncology-related lymphedema. It is a recognized complication related to cancer and radiotherapy treatments⁶.

Treatments to improve secondary lymphedema, as a debilitating condition, can be divided into two main categories: medicinal and mechanical. As for medications, the most commonly used include diuretics and corticosteroids⁷. The same authors state that there is no cure for severe lymphoedema, however, all degrees of lymphoedema can be improved by mechanical treatments, such as: specialized oncological physiotherapy (decongestive lymphatic therapy), manual lymphatic drainage, skin care with moisturizing creams, various forms of compression (non-elastic containment devices, multilayer bands), physical exercise and nutrition, and even surgery⁸.

When traditional treatments for lymphedema fail, palliative drainage of the subcutaneous fluid can be tried, which is a new approach to treating secondary lymphedema. It is therefore important to understand and evaluate the effects and benefits of subcutaneous lymphatic drainage, which is a palliative technique in the treatment of secondary lymphedema in prostate cancer.

The aim of this study was to deepen our knowledge of the subcutaneous lymphatic drainage technique as a form of palliative treatment for secondary lymphedema in prostate cancer patients, based on Jean Watson's Theory of Human Care.

DEVELOPMENT

Literature review carried out between November 13 and 17, 2023, in the Medline and CINHALL databases, with no time limit, with the inclusion criterion being any articles that referred to the treatment of lymphedema in patients with prostate cancer.

In 2020, 1,414,259 new cases of prostate cancer and 375,304 deaths related to this type of cancer were revealed worldwide, mainly affecting older men over the age of 70⁹.

The highest incidences of this type of cancer are reported in Northern and Western Europe and the lowest incidences are in South, East and Central-South Asia. The wide geographical variation in these figures is probably due to differences in the availability of diagnostic tests⁹, and not necessarily to the absence of disease.

The advances that have been made in the therapeutic approach have led to an increase in survival, which unfortunately has not always been accompanied by an improvement in quality of life, an essential aspect in the approach to the patient. One of the most frequent complications of surgical and/or radiotherapeutic treatment for prostate cancer is lymphedema of the lower limbs, groin, genital and scrotal area, with joint stiffness, hyperkeratosis, skin dyschromia, altered sensitivity and weight of the limbs, associated with an increased infection risk¹⁰.

Determining the incidence rates of penile and scrotal lymphedema is more difficult because, in most studies, it is typically considered together with lower limb lymphedema. Prostate cancer (and its complications) has not received the same attention as breast cancer and its consequences, which is why there is an international movement to raise awareness of the problem in November each year.

There are several reasons why prostate cancer does not receive the same attention or public awareness compared to breast cancer, even though it is a significant disease in terms of its impact on men's health. One of the main causes may be related to the fact that breast cancer patients place more emphasis on the functional and aesthetic elements of lymphedema, whereas in prostate cancer patients, the main concern is sexual and urogenital function¹¹. On the other hand, it may be related to cultural awareness and taboos, less emotional impact, being socially visible, prevalence, less widespread screening and early detection programs, and effective education and awareness-raising needs.

In terms of awareness and cultural taboos, it is known that, traditionally, health problems specific to men may face cultural taboos or a lower willingness to discuss them publicly. This can result in less information and consequently less awareness of the problem. At the same time, while breast cancer can be more tangible and visible, prostate cancer often has no obvious symptoms in the early stages, which can diminish individual and public awareness of this disease.

According to statistics from the National Cancer Registry¹², the incidence of cancer in Portugal has been increasing over the years. Recent estimates indicate that there are around 6,000 new cases of breast cancer per year in Portugal, whereas the figure for prostate cancer is around 7,000 new cases diagnosed annually in the country, figures that may have changed in the meantime due to demographic changes, advances in diagnostic methods and other variables.

Although prostate cancer is one of the most common neoplasms among men, compared to breast cancer among women, the incidence may be lower¹². The difference in prevalence can influence the amount of attention and resources allocated to each disease.

There are still various screening programs for the different cancers, but we found that prostate cancer is less widely publicized in terms of screening programs and early detection¹². While mammograms for breast cancer detection are widely disseminated, screening programs for prostate cancer, such as the PSA (Prostate Specific Antigen) test, have been the subject of debate due to false positives and negatives, which may compromise the intention of their dissemination as a diagnostic strategy.

The general lack of knowledge about the prostate, its functions and the risks associated with cancer in this gland, contributes to the lower visibility of the disease and the lack of public discussion, thus creating a greater need for education and awareness-raising.

In this sense, it is essential to understand that prostate cancer is a significant public health issue, which is why it requires attention, awareness and investment in research, in order to improve early diagnosis, treatment and support for patients. Ensuring awareness and dissemination about this pathology is crucial to reducing the stigma associated with this disease and promoting a more open and informative approach to men's health.

As far as treatments are concerned, and despite the advances that have been made, conventional methods still prevail, which are generally effective in treating symptoms, although they don't show the same results in palliative patients, above all because of their increased frailty and because the aim is to minimize disruption to their daily lives.

It is very important to understand that prostate cancer treatment can affect quality of life, causing intestinal changes, urinary incontinence and reduced sexual function¹³. It is very important to understand that prostate cancer treatment can affect quality of life, causing intestinal changes, urinary incontinence and reduced sexual function. In this respect, around three quarters of men with prostate cancer rate their ability to function sexually as poor or very poor, compared to half of men of the same age without a prostate cancer diagnosis¹³.

At the same time, a recent systematic review¹⁰ found that in patients with prostate cancer, the secondary lymphedema rate in the lower limbs varied between 0% and 14% in individuals treated with pelvic lymph node dissection, and between 0% and 8% in patients treated with pelvic lymph node radiotherapy. In addition, the prevalence was higher (between 18% and 29%) in men who had had their pelvic lymph nodes irradiated after dissection, which is an indicator that the combination of surgery and irradiation results in significantly higher rates of lymphedema¹⁰.

When all conventional treatments for lymphedema fail, the use of subcutaneous lymphatic drainage to reduce lower limb edema is indicated. This therapeutic proposal emerged in 2001 and was reported in 2004¹⁴. There is currently no standard method for this procedure¹⁵.

In the study described, subcutaneous needles were placed in the swollen legs, using three on each side (the back of the foot, the ankle and the lower thigh). The fluid volume drained varied between 1 and 8 liters (L). Another study, involving 31 patients, describes a trial of subcutaneous needle drainage with a closed system, in which the mean drainage volume was 5.5 L. In this publication, they associated an improvement in quality of life markers after drainage¹⁶.

In 2010, another investigation was published, with 8 patients, in which a closed and open system were combined. The closed system was the same one used in previous reports. The open system involved the formation of a subcutaneous path, where the needle is removed and left to drain. In this study, fluid loss from lymphedema was demonstrated with both system types¹⁷. Other studies use cannulas¹⁵.

In a study carried out by Portuguese researchers¹⁸ looking at controlled subcutaneous lymphatic drainage at home, it was found that the procedure improves comfort and well-being and can be carried out without the need for hospitalization, which is particularly important in palliative care patients, which will probably have an impact on the patient's quality of life, but also on the costs related to the disease and treatment. The home

procedure appears to be effective and feasible and can be managed on a daily basis by patients and caregivers, while being supported and monitored by a palliative care team¹⁸.

In the aforementioned studies, the pain of needle placement during the technique is not mentioned as relevant and there is no specific standard method for carrying it out.

CONCLUSION

Lymphedema secondary to prostate cancer treatment, which is a chronic and progressive disease, can interfere with mobility and cause pain and discomfort. The literature on the subject, although scarce, indicates that subcutaneous lymphatic drainage is a technically simple procedure, with an effective reduction in limb edema and absence of infectious and inflammatory tissue reactions. In relation to the impact on quality of life, it would be important to explore this aspect in greater depth, although results can be implicitly inferred.

The research carried out did not identify any evidence-based guidelines for secondary lymphoedema treatment, which is why a gap has been identified that needs to be filled in order to allow it to be disseminated as a valid treatment option for secondary lymphoedema and lead to its use as a first-line treatment and not just when conventional treatments have not worked or have worked less well.

Given what is available in the literature, it is important to raise awareness among nurses of the possible use of this procedure by healthcare teams in clinical practice, essentially for symptom relief in a palliative context. Subcutaneous drainage of lymphoedema resulting from prostate cancer or breast cancer is equally important, and the nurse's role is essential for the diagnosis of the problem and for the implementation and success of this therapeutic measure.

Thus, when weighing up the risk/benefit ratio, the evidence seems to indicate that it is worth applying the lymphoedema drainage procedure in the context of palliative care, both in hospital and at home.

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REFERENCES

1. Ferlay J, Ervik M, Lam F, Laversanne M, Colombet M, Mery L, et al. Global Cancer Observatory: cancer today. International Agency for Research on Cancer. [Internet]. 2024 [cited 2023 Nov. 02]; 247. Available from: <https://gco.iarc.who.int/media/globocan/factsheets/cancers/27-prostate-fact-sheet.pdf>

2. Rockson SG. Lymphedema after breast cancer treatment. *N Engl J Med*. [Internet]. 2018 [cited 2023 Nov. 02]; 379(20):1937-44. Available from: <https://www.nejm.org/doi/10.1056/NEJMcp1803290>
3. Kruger N, Plinsinga ML, Noble-Jones R, Piller N, Keeley V, Hayes SC. The lymphatic system, lymphoedema, and medical curricula-survey of Australian medical graduates. *Cancers*. [Internet]. 2022 [cited 2023 Nov. 04]; 14(24):6219. Available from: <https://doi.org/10.3390%2Fcancers14246219>
4. Lindqvist E, Wedin M, Fredrikson M, Kjöhede P. Lymphedema after treatment for endometrial cancer: a review of prevalence and risk factors. *Eur J Obstet Gynecol Reprod Biol*. [Internet]. 2017 [cited 2023 Nov. 02]; 211:112-21. Available from: <https://doi.org/10.1016/j.ejogrb.2017.02.021>
5. Associação Nacional de Doentes Linfáticos - and Linfa [Internet]. Portugal: Associação Nacional de Doentes Linfáticos; 2023. [cited 2023 Nov. 02]. Available from: <https://andlinfa.pt/linfedema/#1643319364508-6cd34b8e-4843>
6. Wilting J, Bartkowski R, Baumeister R, Földi E, Stöhr S, Strubel G, et al. S2K Guideline: diagnostics and therapy of lymphoedema [Internet]. 2019 [cited 2023 Nov. 2]. Available from: https://vascern.eu/app/uploads/2023/03/058-001e_S2k_Diagnostics_and_therapy_of_lymphoedema_2019-07-abgelaufen.pdf
7. Towers A, Hodgson P, Shay C, Keeley V. Care of palliative patients with cancer-related limphoedema. *J Lymphoedema*. [Internet]. 2010 [cited 2023 Nov. 02]; 5(1):72-80. Available from: https://woundsinternational.com/wp-content/uploads/sites/8/2023/02/content_11200.pdf
8. Vignes S. Genital lymphoedema after cancer treatment: a narrative review. *Cancers*. [Internet]. 2022 [cited 2023 Nov. 04]; 14(23):5809. Available from: <https://doi.org/10.3390%2Fcancers14235809>
9. Wang L, Lu B, He M, Wang Y, Wang Z, Du L. Prostate cancer incidence and mortality: global status and temporal trends in 89 Countries From 2000 to 2019. *Front Public Health*. [Internet]. 2022 [cited 2023 Nov. 02]; 16(10). Available from: <https://doi.org/10.3389/fpubh.2022.811044>
10. Clinckaert A, Callens K, Cooreman A, Bijmens A, Moris L, Calster CV, et al. The prevalence of lower limb and genital lymphedema after prostate cancer treatment: a systematic review. *Cancers*. [Internet]. 2022 [cited 2023 Nov. 02]; 14. Available from: <https://doi.org/10.3390/cancers14225667>
11. Yafi FA, Jenkins L, Albersen M, Corona G, Isidori AM, Goldfarb S, et al. Erectile dysfunction. *Nat Rev Dis Primers*. [Internet]. 2016 [cited 2023 Nov. 02]; 2(1). Available from: <https://doi.org/10.1038/nrdp.2016.3>
12. Ministério da Saúde (PT). Registo Oncológico Nacional (RON) [Internet]. Lisboa: Ministério da Saúde; 2019 [cited 2023 Nov. 02]. Available from: https://ron.min-saude.pt/media/2214/ron-2019_new_v8f.pdf
13. EUROPA UOMO. Quality of life after prostate cancer treatment [Internet]. 2023 [cited 2023 Nov. 02]; Available from: <https://www.europa-uomo.org/who-we-are/quality-of-life-2/the-euproms-study/>
14. Clein LJ, Pugachev E. Reduction of edema of lower extremities by subcutaneous, controlled drainage: Eight cases. *Am J Hosp Palliat Care*. [Internet]. 2004 [cited 2023 Nov. 02]; 21(3):228-32. Available from: <https://doi.org/10.1177/104990910402100314>
15. Priest L, Allcroft P, Thomson M, Lambrakis A. Subcutaneous cannula drainage for symptomatic lower limb oedema in advance cancer: a case study. *J Lympho*. [Internet]. 2023 [cited 2023 Nov. 24]; 18(1). Available from: <https://woundsinternational.com/journal-articles/subcutaneous-cannula-drainage-for-symptomatic-lower-limb-oedema-in-advanced-cancer-a-case-study/>
16. Landers A, Holyoake J. Lymphoedema in advanced cancer: does subcutaneous needle drainage improve quality of life? *BMJ Support Palliat Care*. [Internet]. 2019 [cited 2023 Nov. 02]; 12(e6):E821-5. Available from: <https://doi.org/10.1136/bmjspcare-2019-001924>
17. Bar-Sela G, Omer A, Flechter E, Zalman D. Treatment of lower extremity edema by subcutaneous drainage in palliative care of advanced cancer patients. *Am J Hosp Palliat Care*. [Internet]. 2010 [cited 2023 Nov. 02]; 27(4). Available from: <https://doi.org/10.1177/1049909109352660>

18. Julião M, Costa E, Calaveiras P, Daniel S, Sousa PF, Dias R. Treatment of lower extremity edema by controlled subcutaneous drainage at home: a case report. Am J Hosp Palliat Care. [Internet]. 2021 [cited 2023 Nov. 02]; 38(8):1053-6. Available from: <https://doi.org/10.1177/1049909120960715>

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