

LYMPHOEDEMA MANAGEMENT IN PALLIATIVE CARE

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Abstract

In palliative care, the presence of lymphoedema poses an interesting challenge for both patients and clinicians. When determining an appropriate management plan for a patient with advanced disease and lymphoedema, a number of factors need to be considered. These include: the extent of the oedema; the impact of the oedema and its management on other symptoms such as pain, breathlessness and fatigue; the expectations of the patient; and the patient's tolerance of different treatment modalities. Current evidence suggests that combined with good skin care, the modalities most effective in the management of lymphoedema include massage (manual lymphatic drainage), compression (multilayer compression bandaging or compression garments) and exercise. This paper discusses how these modalities can be effectively modified for use in a palliative care setting and presents two case studies to illustrate some of the practical considerations of lymphoedema management in palliative care.

Lymphoedema is a high protein oedema that occurs when there is a build-up of fluid in the lymphatic system as a result of damage to lymphatic vessels or nodes through either trauma or disease.¹⁻⁴ Lymphoedema is characterised by changes to both the skin and underlying tissues.⁵ While lymphoedema most commonly manifests in the limbs, in advanced disease oedema may also present in the trunk, face and genital regions.⁶ A number of factors have been identified as contributing to the development of lymphoedema, with cancer and its treatment (surgery, chemotherapy and radiotherapy) identified as one of the leading causes.⁵

In palliative care, the spread of disease to surrounding lymph nodes, the development of fungating lesions, ongoing nutritional deficiencies, recurrent infections, reduced mobility and function, progressive organ failure and prolonged use of medications such as Non Steroidal Anti-inflammatory Drugs (NSAIDs), corticosteroids or chemotherapy, have all been associated with an increased risk of either developing or exacerbating lymphoedema.^{3,7,8} Estimates of the prevalence of lymphoedema in cancer patients have been found to vary according to location of the primary malignancy. However, it is estimated that 20% of patients with melanoma or primary breast, gynaecological or prostate cancer will experience lymphoedema.⁹⁻¹¹ The impact of lymphoedema on patients has been found to be quite profound, with both physical and psychological implications.^{10,12} In patients with advanced disease, the impact is even more pronounced, with the presence of lymphoedema associated with worsening levels of function and dependence, as well as feelings of hopelessness, disgust and social isolation.⁸ For these reasons, the development and utilisation of appropriate strategies to manage lymphoedema are necessary to maintain the quality of life in palliative patients.

Management of lymphoedema

There have been a number of different strategies proposed for the management of lymphoedema.^{9,12} These have ranged from surgical debulking,¹³ or subcutaneous

drainage,^{14,15} to pneumatic pumps,¹⁶ medications,¹² massage, compression, exercise, low-level laser therapy and complementary therapies.^{4,9} However, to date the evidence to support the use of any of these modalities is limited.^{9,17,18} The modalities that have the strongest evidence to support their use are massage, compression and exercise.^{4,9}

Assessment of the patient is required prior to the instigation of a lymphoedema management plan.^{4,9} In conjunction with a full medical history and examination of the extent and quality of the oedema, other useful information includes the impact of the oedema on other symptoms such as pain, breathlessness and fatigue, and the expectations of the patient.¹⁹ If possible, it is also useful to ascertain the patient's tolerance to different treatment modalities, namely compression.⁴ Armed with this information, it is possible to develop a management plan in conjunction with the patient that will not only optimise the control of his or her oedema, but also improve the patient's quality of life.

Skin care is considered one of the cornerstones of comprehensive lymphoedema management.²⁰ Maintaining skin integrity is crucial not only for patient comfort, but also to prevent recurrent infections, such as cellulitis, which are not only problematic to treat but may contribute to worsening oedema.^{21,22} In advanced disease, skin integrity can be further compromised by the presence of lymphorrhoea, the leaking of lymphatic fluid through the skin,²³ or fungating lesions.²⁴ The presence of either of these adds complexity to the management of lymphoedema and requires a co-ordinated approach from the multidisciplinary team.²⁵

The aim of massage, or manual lymphatic drainage (MLD), in lymphoedema management is to facilitate the movement of lymphatic fluid, reducing congestion and ongoing oedema.²⁰ The effectiveness of this modality is reliant on a number of factors. First is the integrity of the skin. Although MLD is a gentle massage technique, if a patient's skin is fragile, inflamed or leaking, massage

may be contra-indicated.⁴ The second factor to consider is the extent of damage to the lymphatic system. If the lymphatic system (vessels and nodes) is significantly compromised, by either underlying disease or cancer treatment (surgery and radiotherapy), then MLD may not be effective in decongesting a limb. In this case, MLD may focus on softening the oedema, especially around joints to enable movement.^{19,20} The final factor to consider is the frequency of MLD. It is unclear how frequently MLD needs to be performed.¹⁷ Current consensus suggests patients and/or their carers be taught self-lymphatic massage, a simplified version of MLD, to optimise the effectiveness of massage.⁴

Graduated compression of an oedematous limb aims to increase lymphatic absorption and facilitate the movement of lymphatic fluid.^{19,26} Compression can be applied either through the use of multi-layer bandaging or a specially fitted compression garment.⁴ Multi-layer bandaging consists of layers of protective padding combined with low stretch bandages.⁴ Compression garments are recommended for use once the volume of oedema in the limb has stabilised.²⁰ In palliative care, the decision to use compression is again based on a number of factors. The region of the body affected will dictate what method of compression can be used, with oedema to the face and genital regions the most difficult to compress.²⁷ Patient comfort is another factor to consider. For instance, reducing the level of compression has been shown to dramatically improve patient tolerance of both bandages and garments.²⁶ Finally, the risk of exacerbating other conditions such as ascities and superior vena cava obstruction needs to be taken into consideration.

Exercise is thought to facilitate the movement of lymphatic fluid through utilisation of the extrinsic muscle pump.^{12,20} While specific exercise regimes have been developed,¹⁶ there is anecdotal evidence to suggest that participation in activities of daily living may be sufficient to improve lymphatic flow. In palliative care, the ability to maintain independence has been identified as important for quality of life. The introduction of a general exercise program, including joint range of motion exercises, may facilitate not only a reduction of lymphoedema, but enable patients to return to activities they enjoy.⁴

Case studies

The following two case studies illustrate some of the practical considerations and complexity of upper limb and lower limb lymphoedema management for patients with advanced disease. In both cases, the patients were referred to a multidisciplinary specialist palliative care team, where the physiotherapists are trained in, and provide, lymphoedema management.

Ms G

Ms G is a 48 year-old lady with right sided breast cancer. Her initial treatment was neo-adjuvant chemotherapy and hormonal treatment prior to right mastectomy in May 2006, followed by radiotherapy. She then developed metastatic disease to her brain,

liver, lung, cervical lymphadenopathy and a fungating wound of her right anterior chest wall. Ms G developed right upper limb lymphoedema two years after her primary treatment. At this time she was measured for a custom fit garment consisting of a glove and sleeve. She was also taught self-lymphatic drainage massage, which she performed twice daily.

One year later she had increased cervical lymphadenopathy, progressive right upper limb lymphoedema, a sharp stabbing pain in her arm and hand, and she was no longer tolerating wearing her compression garment. On initial examination by our physiotherapist, Ms G had gross lymphoedema of her right upper limb, extending from her fingers to her right chest wall area. Her limb was very fibrotic in texture, and her skin was intact. Circumferential measurements were taken of her wrist 20cm, elbow 34.5cm and axilla 54cm.

She was initially treated with multi-layer compression bandaging of the right upper limb, with only one layer of low stretch bandage, and given range of movement exercises. She was to continue her daily self-lymphatic massage and moisturise her skin. This treatment was not tolerated by the patient for more than six hours and resulted in neurological compromise with reported pins and needles and numbness. The next line of treatment that was trialled was again multi-layer bandaging, using one layer of crepe instead of short stretch bandages. This time the patient tolerated the bandages for less than three hours before neurological compromise started, at which point she removed them. On both occasions neurological signs resolved with removal of the bandages. Ms G reverted to wearing her compression glove and Tubigrip. Her treating physiotherapist then commenced lymphoedema massage of the right upper limb in an attempt to soften the fibrotic nature of the limb. Ms G also requested being measured for a new compression glove. There was a good response to the lymphoedema massage over time, with the limb reducing in size and woodiness.

Ms G reported improved upper limb function, namely she was able to resume some cooking preparation, feeding with her right arm, typing, sewing and knitting. Her axilla circumference decreased to 49cm. She had some lymphorrhoea at times that ceased with massage. Despite the reducing size of her right upper limb, Ms G was unable to be fitted for an off-the-shelf compression glove and continued to be managed with massage and Tubigrip, as this was the only form of compression she could tolerate. The goals of treatment identified for this patient were to improve her upper limb function, maintain her skin condition and prevent infection.

Ms D

Ms D is a 51 year-old lady with metastatic non-small cell lung cancer. Ms D suffered two episodes

of cellulitis in both her lower limbs, treated with intravenous antibiotics and knee length anti-embolic (TED) stockings, which she did not wear as they cut in behind her knees. Ms D was referred to the community palliative care physiotherapist to manage her oedematous legs. On initial examination, oedema was gross, hard and pitting extending the length of her legs to the thigh (left right), with fibrotic areas on the left lower limb. She had pressure areas at both anterior ankle creases and forefeet.

On the first occasion, treatment consisted of lymphatic drainage massage, education in how to perform daily self-massage and education in maintaining skin integrity, to prevent infection. It was decided to try modified compression bandaging using low stretch bandages that would stay on for approximately 36 hours, and to do this twice a week. This would allow Ms D to continue to go out and maintain an active lifestyle, while attempting to manage and reduce her oedematous legs. Ms D was also instructed on active ankle and knee exercises to perform while the bandages were on, and advised to keep her legs elevated when resting. Ms D was happy with the results, exclaiming that she "had ankles again!" This continued twice weekly for two weeks. She had a third episode of cellulitis, likely from the broken skin of a fungal infection in her toes.

On discharge, treatment resumed as it had prior to her hospital admission, and extra emphasis was placed on the importance of maintaining skin integrity to avoid further episodes of cellulitis. Ms D was finding that her legs were reduced in size after the bandages came off, but that they would return to their larger size within a day or so. She found the heat/humidity of summer made the bandages very uncomfortable and she was often not able to tolerate them for very long. She was then maintained with weekly to twice weekly massage to her legs by the community physiotherapist, continuation of self-massage and TED stockings at night. Her right leg size reduced markedly and the left leg is still moderately oedematous, but has no fibrotic areas and skin is very well nourished, with no pressure areas.

Conclusion

Although lymphoedema can be challenging to manage in palliative populations, it is possible to modify existing modalities to effectively reduce oedema and improve quality of life. Care does need to be taken though to ensure that patient comfort is maintained in the assessment and treatment process. For this reason it is advisable to utilise clinicians who not only possess appropriate training in lymphoedema management, but who also employ a holistic view to patient care.

While the focus of this paper has been on the physical management of lymphoedema, it is important not to discount the psychological impact of swollen limbs on patients and their carers. Hopefully, as the body of research in this area develops, clinicians will be able

to offer patients evidence-based treatment strategies to effectively manage the physical and psychological consequences of lymphoedema.

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