The management of a patient with lymphoedema of the legs


Summary
Lymphoedema is a much under-publicised condition, yet it affects many people. Janice Bianchi and Marie Todd outline the implications of the condition and examine the treatment options of a typical case study.

Lymphoedema is a chronic, high protein tissue swelling that can affect one or more limbs. The condition can also affect the trunk, head and/or genitals (Badger 1986). Box 1 shows the two classifications of lymphoedema.

Incidence of lymphoedema
The major cause of lymphoedema worldwide is filariasis, although not everyone with filariasis has lymphoedema. The World Health Organization estimates that 45 million people have symptoms of swelling, while a total of 90 million are infested by filariasis (WHO 1984). In the western world, however, the main cause is breast cancer treatment. Approximately 28 per cent of women undergoing surgery for breast cancer will develop lymphoedema, and this figure increases for women undergoing radiotherapy (Mortimer et al 1996). The incidence of lymphoedema resulting from other causes has yet to be studied, but Casley-Smith and Casley-Smith (1997) suggest that approximately 180 million people worldwide suffer from lymphoedema of some cause.

Problems associated with lymphoedema
Patients with lymphoedema suffer from a wide range of physical, psychological and social problems as a result of their swelling. Physically, the limb can feel heavy and cause nerve and muscle strain to associated joints, such as the shoulder or hip. Pain is also a major problem – a recent audit in a lymphoedema clinic revealed that 52 per cent of the patients were in pain and the main cause was the swollen limb itself (Welsh and Todd 1999). Skin changes occur as a result of the high protein content of the oedema, including hyperkeratosis, papillomatosis and deepened skin folds (Mortimer 1995). The risk of acute inflammatory episodes (AIE) or cellulitis is increased due to the stagnant protein-rich fluid and reduced local immunity. Hospitalisation might be required for IV antibiotics, particularly if the oedema is cancer-related.

These episodes cause further damage to the initial lymphatics and result in increased swelling, which may or may not return to pre-AIE size (Jeffs 1993). Psychologically, the patient might fear recurrence of cancer on the development of swelling. It also acts as a constant reminder of the disease and compounds any body image problems. Patients are frequently asked questions regarding their swollen limb and getting clothes and shoes to fit can be difficult (Woods 1993).

The swollen limb can also affect social interaction with family and friends. People often stare at unusual swellings and ill-fitting clothes can add to the patient’s discomfort. Lymphoedema can affect the patient’s life socially, physically and emotionally.
Psychologically and quality of life might be drastically reduced as a result.

**Treatment of lymphoedema**

Lymphoedema is treated according to the severity of the swelling and associated complications and patients are classed accordingly. Those who are at risk of developing lymphoedema (for example, those who have undergone surgery or radiotherapy, but have not yet developed any swelling) need advice and information regarding care of their limb and steps to take to reduce the possibility of developing lymphoedema. To avoid compromising the affected limb, nurses should not carry out injections, venepuncture or blood pressure tests on it. These patients also require information on what to do if lymphoedema does develop and who to contact for referral to a lymphoedema specialist.

A swelling that is less than 20 per cent bigger than the non-swollen limb, with no skin changes or distortion in shape of the limb, is classified as a mild, uncomplicated condition. Treatment is minimal as it aims to keep skin supple and prevent infection. Patients should wear a compression garment.

The nurse should issue instructions on simple massage to help drain lymph from the congested area to a normal functioning area, and demonstrate exercises to assist the lymphatic flow and maintain limb function.

Since lymphoedema is a chronic condition, this treatment is lifelong. Patients require follow-up at regular intervals to supply new garments and support their maintenance of the condition.

Where swelling is 20 per cent bigger than the non-swollen limb, changes in the skin and distortion in the shape of the limb are often exhibited. This condition requires a more intensive form of treatment. Manual lymphatic drainage and multi-layer compression is usually the treatment of choice to reduce the swelling of lymphoedema (Mortimer et al 1999).

This highly specialised gentle massage technique is employed to encourage movement of lymph from congested oedematous areas to areas of the body where it can drain normally (Badger and Twycross 1988).

‘External compression in the form of bandages or hosiery is used when the aim of the treatment is to reduce the swelling or when trying to maintain the reduced limb size. Support, in contrast, is used when a reduction in limb size is not anticipated or perhaps not necessarily desirable. It can also be supplied by either stockings or bandages, although in this case a lower degree of pressure is used’ (Mortimer et al 1999). Following the intensive phase, the patients revert to the mild to moderate treatment.

Patients in the palliative setting might require a combination of these treatments depending on need, or might only tolerate something low in pressure, such as a tubular bandage.

**Case study**

Mr C (78) lived alone and was admitted to a medical ward following a fall at home. He gave a history of not eating well and generally neglecting himself over the previous three months. He also confided that he had slept in a chair rather than a bed for a number of years. Although he had three sons, none of them lived nearby. There was little social support and he was very lonely.

The only injuries sustained from the fall were minor abrasions to his forehead. There was no medical history of note except vague details of angina and possibly dermatitis. He was taking aspirin 75mg once daily.

On examination, he was found to be alert and oriented. He was pale but not cyanotic, with minor abrasions to the forehead. Both feet, however, were swollen and oedematous with nodular-thickened skin. Extending to his mid-calf were gross varicose changes of the skin and crusted hyperkeratotic areas. The legs were malodorous, with maceration and dermatitis around the toes (Fig. 1). Pitting oedema extended to the thighs. Fungal infection was thought to be present, so swabs were sent for culture and sensitivities. Results indicated no fungal or bacterial infection.

Femoral pulses were palpable, popliteal pulses were difficult to palpate and pedal pulses could not be assessed due to grossly thickened skin.
There was no evidence of acute ischaemia.

Routine blood tests were within normal parameters, but Mr C’s chest X-ray revealed a degree of congestive cardiac failure. Frusemide 40mg twice daily was introduced initially and this dose was later increased to 80mg twice daily. A good diuresis resulted in reduction of central oedema, and the frusemide was subsequently reduced to 40mg twice daily, to continue as a maintenance dose. Digoxin 125mcg was also commenced once daily to improve symptoms and exercise tolerance.

It is important to recognise diuretics were used in this instance to reduce oedema of central origin and are not a useful treatment for lymphoedema. Diuretics achieve little more than relief of symptoms of tightness in a congested limb and do not decrease swelling (Mortimer et al 1999).

Four days after Mr C was admitted, a dermatologist examined him and diagnosed chronic lymphoedema. Since there were a few small palpable lymph nodes in the right groin and lymphoedema was more severe to that limb, pelvic ultrasound was arranged to rule out a compressing mass. No abnormality was found. The lymphoedema was thought to be due to chronic venous insufficiency and limb dependency (Box 1).

Manual lymphatic drainage and multilayer compression are available mainly in dedicated lymphoedema clinics. The demand for the service is such that Mr C would have had to wait four weeks for an appointment. Compression therapy alone was, therefore, considered to be the best treatment option, providing he had no arterial insufficiency.

Topical treatment consisted of potassium permanganate lower leg baths to reduce odour, dermatitis and maceration, along with a potent topical steroid ointment. Crusted areas were treated with 50:50 white soft paraffin in liquid paraffin.

The standard rapid assessment tool for arterial insufficiency is a hand-held Doppler ultrasound to assess ankle brachial pressure index (ABPI). In this case, because of the gross swelling, there was no audible signal.

In patients in whom ABPI assessment is thought to be error prone, preliminary data suggest that pulse oximetry is a reliable, easy to use method of assessing whether compression therapy may be safely applied (Bianchi et al 2000). Results suggested compression therapy was appropriate.

As Mr C’s lymphoedema subsided and his mobility improved, plans for discharge from hospital were
made. The occupational therapist carried out a home assessment and found that several aids were needed to enable Mr C to maintain his independence. Full social support, including home help and meals on wheels, would also be required. Day care was recommended, but Mr C declined the offer of this service.

Long-term compression helps to prevent recurrence of lymphoedema. Class two compression stockings were recommended for Mr C. When patients have trouble applying and removing stockings, however, the continued application of multilayer bandaging is a suitable alternative. Mr C was also advised to keep his foot elevated.

**Conclusion**

Mr C’s case was an interesting and complex one, which challenged the multi-professional team. The lower limb swelling was due to limb dependency, venous insufficiency and lymphoedema, further exacerbated by fluid retention caused by congestive cardiac failure. Diuretic therapy successfully relieved heart failure, while graduated compression and leg elevation proved effective in reducing swelling.

In addition to the physical symptoms Mr C had experienced, psychological factors might have influenced the disease process. Social support is ‘...the perceived comfort, caring, esteem or help a person receives from other people or groups’ (Wills 1984). Mr C’s self-neglect might have been due in part to loneliness and the lack of social support. The input of social services might help to reduce Mr C’s feelings of isolation and allow him to maintain his independence.

This study does not aim to suggest that compression therapy alone is suitable for all patients with lymphoedema of the lower limbs. Referral to a specialist lymphoedema clinic is always preferable, as manual lymphatic drainage, which encourages fluid to move from swollen congested areas, is an important part of the therapy.

---

**Fig. 3. Mr C’s legs four weeks after beginning compression therapy**

---

**REFERENCES**


