

Best practice in managing scrotal lymphoedema

Justine Whitaker

Justine Whitaker is the RCN Nursing Standard, Nurse of the Year. Justine is a Macmillan Lymphoedema Clinical Specialist for East Lancashire

Email: justine.whitaker@eastlancspt.nhs.uk

The diagnosis, treatment and long-term management of upper and lower limb lymphoedema are regularly described in current literature. (Badger et al, 2004). There is less information available on lymphoedema affecting the male genitals. Lymphoedema of the external genitalia has been suggested by McDougal to be either transient or persistent and that it can occur at any age (McDougal, 2003). What causes oedema of the scrotum and penis is the same as for any other part of the body. (Haldar and Cranston, 2000). McDougal (2003) provides a simple classification for male genital oedema. Classifying this area can assist in treatment selection when considering individual patients and their differential diagnosis. (McDougal, 2003). He classifies into two main areas with subsequent subcategories; firstly congenital or primary lymphoedema with age of onset, how sporadic it is and inheritance, and secondly acquired, neoplastic, infectious, granulomatous, reactive, disorders of fluid balance and idiopathic, see *Table 1* (McDougal, 2003).

Genital lymphoedema

All the causes of McDougal's classification can if a swelling is evident for three months or longer, result in the condition becoming chronic (Green and Mason, 2006). In the early stages of chronic oedema the tissues will 'pit' when pressure is applied (Williams, 2003). When examining a patient with lymphoedema of the scrotum it is often very obvious that pitting oedema is present due to indentations on the skin caused by underwear seam lines or where the penis has displaced fluid while pressed against the tissues during encasement in underwear.

Green and Mason (2006) discuss the later stages of chronic oedema as the accumulation of fluid and waste products in the tissues and as they remain there, they build up causing thickening and fibrosis. (Green and Mason, 2006). The number of males affected with lymphoedema of the scrotum across all classifications has not been quantified in the literature, although it is thought to affect one group of patients with the condition secondary to the parasitic disease Filarisis in large numbers. Around 120 million people are affected by lymphatic filariasis, with around 90% of those living in India. (Anitha and Shenoy, 2001). The global alliance to eliminate lymphatic Filariasis estimates that globally around 27 million boys and men have scrotal oedema due to this disease (global alliance to eliminate lymphatic Filariasis, 2007).

More commonly in western society scrotal oedema is present due to neoplasms (McDougal, 2003). Prostate cancer is the second most common cancer affecting men in the UK and is responsible for around 13% of male deaths due to cancer with an increasing incidence (Thompson et al, 2007).

The National Institute of Clinical Excellence in 2002 published a document outlining guidance for urological cancers (NICE, 2002). Part of the document says that all patients should have access to specialist palliative care. These guidelines include provision for lymphoedema management. Thompson et al (2007), also highlight that the policy framework for commissioning cancer services (Calman-Hine Report, 1994), should allow integration between cancer treatment services and palliative care services. This can only strengthen the opportunity for patients with scrotal oedema in having access to appropriate services locally, as regional cancer networks implement these strategies.

Clinical presentation

The clinical presentation, physiological causes and psychological impact should be taken into consideration when a patient presents with oedema of the scrotum. It could be justified to assume that when the scrotum swells to excessive amounts that the patient would be suffering from psychological distress. Ridner (2004) analysed the concept of psychological distress within the nursing literature. She found that the term 'psychological distress' was commonly used, however it was repeatedly ill defined and the definition had not been well articulated. It is a common problem

ABSTRACT

Managing lymphoedema of the male genitals is challenging, distressing and potentially life-threatening if not managed appropriately. Consideration is made of the classification, clinical presentation, lymphatic anatomy and management of genital lymphoedema in clinical practice. The article addresses the issues raised when caring for patients suffering from this condition. A case history demonstrates the use of a novel innovation. The Whitaker Pouch, which can relieve and manage symptoms facilitating self-management and appropriate best practice.

KEY WORDS

Genital oedema • Lymphatic anatomy • Empowerment • Management

Table 1. Classification of genital lymphoedema

Congenital			
Age of onset	Birth infancy Prepubertal/pubertal Adult onset		
Sporadic	Lymphoedema congenital Lymphoedema praecox Lymphoedema tarda		
Inherited	Milroy's disease Meig's disease		
Acquired			
Neoplastic	Infectious	granulomatous	reactive
Idiopathic	Disorders of fluid balance		

Source: McDougal, 2003

which is highly debatable as to whether it is addressed at a level adequate to offer the patients the appropriate vehicle to begin to address this component of their condition.

An understanding of the anatomy and physiology of the lymphatics allows us to appreciate that abnormalities of the lymphatic system; and how it contributes to the formation of excess interstitial fluid, which over time becomes chronic and thus lymphoedema occurs (Bates, Levick et al, 1993). Browse et al in 2003 describe the scrotum as a dependent organ, which doesn't have any direct external compression and that due to the shape of the organ has a narrow passage at the top anatomically just below the crest of the pubis, where the lymphatic vessels collect together to continue on their drainage pathway (Browse et al, 2003).

Not all patients who present with scrotal oedema will have oedema of the penis. Browse et al (2003) suggest that in the group of patients whose oedema is caused by congenital or hereditary factors, 65% will have oedema of both the scrotum and penis and around 30% will have swelling of the scrotum alone. The palliative care setting presents patients with both scrotal and penile swelling, but

also just of the scrotum, with no evidence of the quantifiable figures.

Lymphatic anatomy

Anatomically the lymph nodes in the groin and pelvic area are the immediate drainage pathways to drain both the penis and the scrotum. Browse et al (2003) describe in detail from the results of lymphographic studies, these drainage pathways and discuss the 'lymphatic chain' *Figure 3*.

The lymphatic chain incorporates the inguinal, iliac and para-aortic nodes. All the lymphatic vessels from the lower limbs, perineum, external genitalia, lower abdomen and buttock drain into the inguinal nodes. Inguinal nodes are split into superficial and deep and are usually around 10-20 in number. The medial inguinal nodes are responsible for most of the genitalia drainage. The vessels leaving the inguinal nodes drain into the iliac nodes. The inguinal, iliac and the para-aortic nodes are subdivided into the external, medial and internal anatomical positions, hence the lymphatic chain. The medial inguinal nodes generally drain into the medial iliac nodes which in turn drain into the medial para-aortic glands (Browse et al, 2003). Patients who present with para-aortic or pelvic lymphadenopathy in the palliative care setting therefore may present or be at risk of developing scrotal and or penile oedema.

Scrotal oedema management

The management of scrotal oedema can be both conservative and surgical (Haldar and Cranston, 2000; Browse et al, 2003). Haldar and Cranston describe two approaches to surgical management, those being firstly to attempt to correct the underlying lymphatic dysfunction anatomically and secondly to surgically de-bulk the thickened fibrosed tissue of the scrotum (Haldar and Cranston, 2000). Browse et al (2003) demonstrated reasonable immediate control of the oedema using this technique; however report that around half of the patients operated on are likely to have a slow gradual recurrence of the oedema resulting in further surgery (Browse et al, 2003).

Conservative approaches mirror those used to manage lymphoedema of the limbs for example bandaging, manual lymphatic drainage (MLD) and compression garments. Bandaging of the scrotum and penis should begin with low levels of compression and Gültig in 2005 suggests that this technique should be carried out in specialist lymphoedema clinics and in combination with manual lymphatic drainage (Gültig, 2005).

The use of compression hosiery or garments is very well documented in general to manage and control lymphoedema of the limbs (Partsch and Junger, 2006). An increasing range of specialist compression garments are now available for patients with truncal oedema (Doherty et al, 2006). When considering garments for oedema of the scrotum the anatomy of the lymphatics needs to be taken into consideration avoiding a tight band at the top of the garment due to the narrow anatomical structure of the neck of the scrotum, thus further restricting lymphatic flow.

One garment which is available is called the 'Whitaker

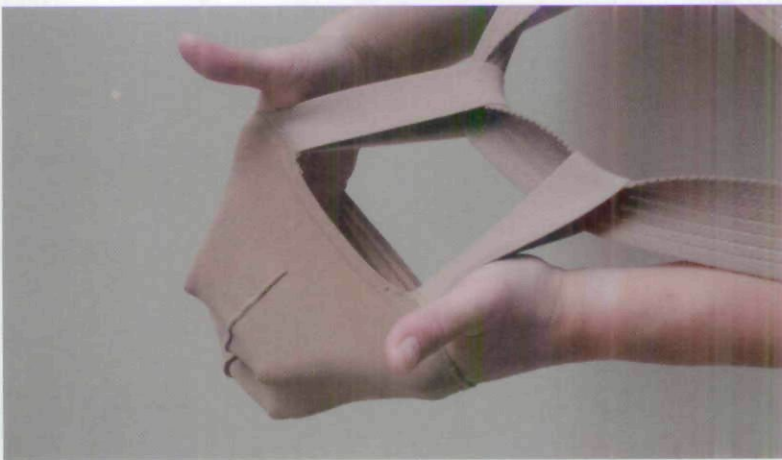


Figure 1. The correct application of the Whitaker pouch. The penis sits between the loops.

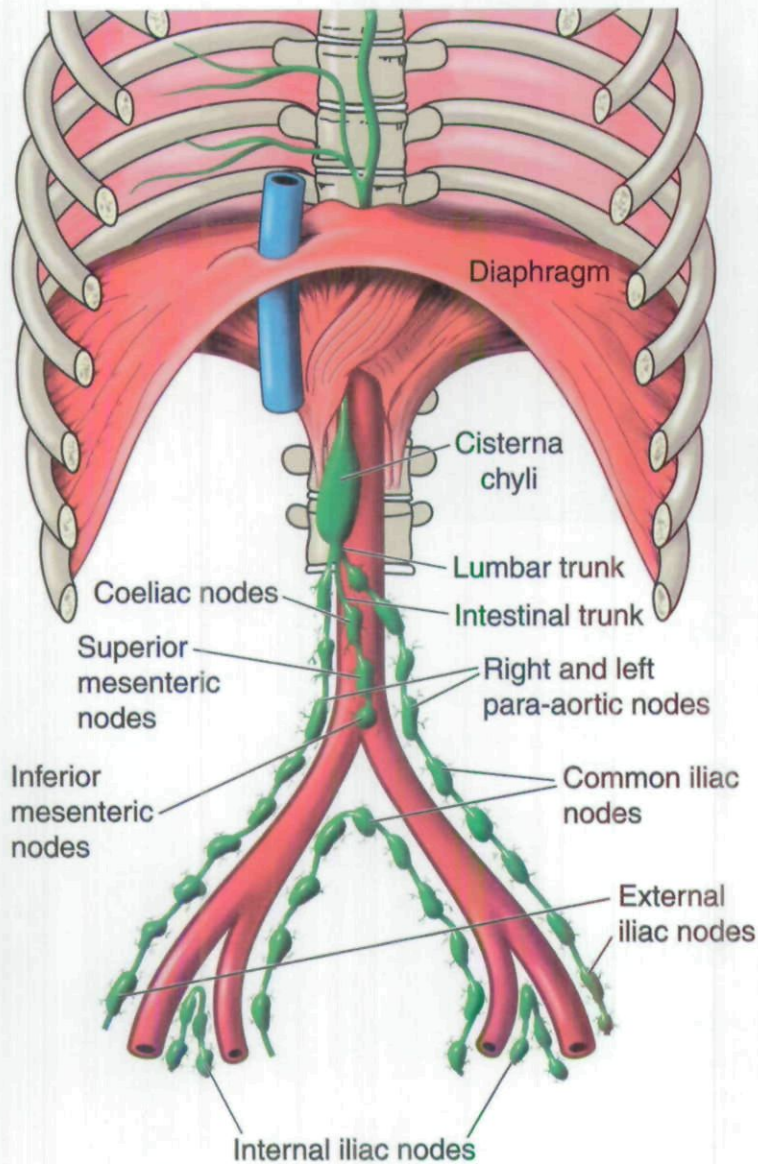


Figure 3. Anatomical positions of the lymphatic chain.



Figure 4. Male wearing a Whitaker Pouch NB: penis would normally be visible between pouch and strap.



Figure 2. The person assisting the application turns the pouch inside out ensuring the seam is on the underside.

Pouch' and is produced by Medi Bayreuth. (Figure 1,2 and 4). The Whitaker Pouch is made of a soft fine elastic circular knit fabric which when tested exerts compression of around a Class 1 RAL standard. RAL standard compression is the German method of testing the pressures exerted by a garment when tested in-vitro conditions. RAL class 1 amounts to 18–21mmHg of compression. Other standards which produce lower levels of compression at class 1 are the British Standard and the French Standard (Clark and Krimmel, 2005).

Self management

Providing a compression garment to manage lymphoedema not only controls the swelling but also empowers patients to become self-managing. The following example outlines a case study on how the Whitaker Pouch contributed to gaining control over Mr X's scrotal oedema.

Case History

Mr X a 68 year old man was diagnosed with prostate cancer four years prior to his disease becoming meta-static. Metastases affected his left hip and he was treated with radiotherapy and chemotherapy. Three months later following a CT scan he was diagnosed with extensive lymphadenopathy affecting his iliac and para-aortic node chain. A month later he presented to clinic with extensive scrotal, penile and left leg oedema. Socially he lived with his wife who supported him and he was a very motivated proactive individual who embraced self-management of his condition, including his long-term urinary catheter. Assessment of the scrotum included measurement, which although somewhat subjective, was repeatable.

Two measurements were taken of the scrotum; the first was taken from the underneath point of the base of the penis where it protrudes from the torso, through to the posterior aspect of the scrotum where it forms the



Figure 5. Mr X's initial presentation.

perineum, secondly the horizontal measurement of the circumference or girth, at the widest part of the scrotum was taken. It is this second measurement which is needed to gauge the correct size of the Whitaker Pouch for appropriate fitting. The measurements indicated a considerable sized scrotum; the first being 22cm in length and the second being 35cm in length.

Whitaker Pouch

A Whitaker Pouch was fitted and the patient was instructed on how to apply the garment daily (Figure 1). Due to his strong internal locus of control he took on this responsibility with no objection, also it was appropriate to teach him a daily routine of simple lymphatic drainage (SLD), which is a modified self treatment derived from manual lymphatic drainage (MLD). Three weeks later Mr X had a repeat CT scan to monitor his disease progress and it resulted in an increase in size to the iliac and para-aortic nodes. Despite this, the size and condition of his scrotum improved enough to fit him with the next size down of the Whitaker Pouch. His first measurement had decreased by 5.5cm to 16.5cm and his second measurement had decreased by 8cm in girth to 27cm.

Management of his swollen penis was also done by the gentleman himself and this included daily self-bandaging with a 4cm wide cotton mesh conforming bandage. Although measurements of the penis girth were not taken a visible reduction was noted and the patient managed to maintain the results of his intervention.

Conclusion

Although managing lymphoedema of the male genitalia can be quite a challenge, and in some instances the problem may be beyond the use of a simple compression garment, other techniques such as bandaging, MLD and on occasion surgery can assist to gain control. Once this has occurred the long-term objective to manage and prevent deterioration will ultimately result in the consideration of a compression garment. The Whitaker Pouch can offer this long-term management and continue to reduce the symptoms while facilitating the individual to gain self caring strategies to manage their own chronic condition (Figure 1).

A thorough understanding of the underlying disease process and a diagnosis is an essential component of any patient's prescription of care to ensure they receive appropriate management at the first point of contact. Patients where possible should have access to a lymphoedema specialist service in order to facilitate this. When a patient is unable to self manage for a multitude of reasons, carers, community and hospital based staff can assist in the application of the Whitaker Pouch (Figure 2). Knowing appropriate garments are available can aid professionals to broach the subject of genital swelling and also allow the patient comfort in that it is not unheard of and that appropriate equipment is available to address their individual problem.

BJCN

- Anitha K, Shenoy RK, (2001). Treatment of lymphatic filariasis: Current trends. *Indian J Dermatol Venereol Leprol* 67(2): 60-5
- Badger C., Preston N, Seers K, Mortimer P (2004) *Antibiotics / anti-inflammatories for reducing acute inflammatory episodes in lymphoedema of the limbs* (Cochrane Review). In: The Cochrane Library (Issue 3)
- Bates D, Levick J, Mortimer P (1993) Change in macromolecular composition of interstitial fluid from swollen arms after breast cancer treatment, and its implications *Clin Sci* 85(6): 737-46
- Browse N, Burnand K, Mortimer P (eds) (2003) *Diseases for the lymphatics*. Hodder Arnold, London
- Clark M, Krimmel G (2006) *Lymphoedema and the construction and classification of compression hosiery*. Lymphoedema Framework. Template for Practice: compression hosiery in lymphoedema. MEP Ltd, London
- Doherty D, Morgan P, Moffatt C (2006) *Role of hosiery in lower limb lymphoedema*. Lymphoedema Framework. Template for Practice: compression hosiery in lymphoedema. MEP Ltd, London
- Green T, Mason W (2006) Chronic oedemas: identification and referral pathways. *Br J Community Nurs* 11(4):S8, S10-6
- Global Alliance to Eliminate Lymphatic Filariasis (2007) www.filaria.org last accessed 16/09/07
- Gültig O (2005) Lymphoedema bandaging for the head, breast and genitalia. Lymphoedema bandaging in practice. EWMA Focus document. Medical Education Partnership Ltd
- Haldar N, Cranston D (2000) *Male Genital Lymphoedema*. In: Twycross R, Jenks K, Todd J (2000) Lymphoedema, Radcliffe Medical Press, Oxford
- McDougal W (2003) Lymphoedema of the external genitalia. *J Urol* 170 711-16
- National Institute for Clinical Excellence (2002). Improving Outcomes in Urological Cancers Manual. NICE, UK
- Partsch H, J nger M, (2006). *Evidence for the use of compression hosiery in lymphoedema*. Lymphoedema Framework. Template for Practice: compression hosiery in lymphoedema. MEP Ltd, London
- Ridner S (2004) Psychological distress: concept analysis *J Adv Nurs* 45(5): 536-45
- Thompson J, Wood J, Feuer D (2007) Prostate cancer: palliative care and pain relief. *Br Med Bull* (Epub ahead of print)
- Williams A (2003). An overview of non-cancer related chronic oedema - a UK perspective. www.worldwidewounds.com/2003/april/Williams/Chronic-Oedema.html, last accessed 16/09/07

KEY POINTS

- ♦ Managing lymphoedema of the male genitals is challenging, distressing and potentially life-threatening if not managed appropriately.
- ♦ The clinical presentation, physiological causes and psychological impact should be taken into consideration when a patient presents with oedema of the scrotum.
- ♦ An understanding of the anatomy and physiology of the lymphatics allows us to appreciate that abnormalities of the lymphatic system; and how it contributes to the formation of scrotal oedema.

Copyright of British Journal of Community Nursing is the property of Mark Allen Publishing Ltd and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.