THE MANAGEMENT OF SECONDARY LYMPHOEDEMA

- a guide for health professionals

OCTOBER 2018

The implementation of the Lymphoedema HealthPathways and Professional Development project is supported by the Victorian Government.

WHAT IS SECONDARY LYMPHOEDEMA?

Lymphoedema is the regional accumulation of excessive amounts of protein-rich fluid in body tissue causing swelling. It occurs when the demand for lymphatic drainage exceeds the capacity of the lymphatic circulation. Secondary lymphoedema is acquired following surgery, radiotherapy, trauma or other damage to the lymphatic system following treatment for cancer. The condition usually affects the limb(s) although it can also involve the trunk, breast, head and neck or genital area.

Secondary lymphoedema can develop at any time after surgery or radiotherapy. Most secondary lymphoedema is apparent within two years after cancer treatment, but the onset of swelling may be delayed for several years.

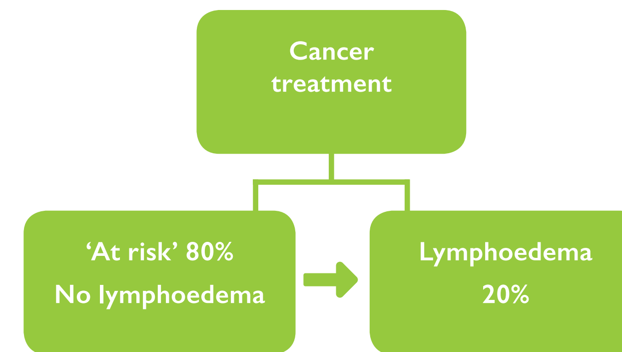
AT RISK POPULATION

Incidence

Conservative estimates suggest that at least 20% of survivors from breast, gynaecological, prostate cancer or melanoma will experience secondary lymphoedema.

Lower incidence rates are often associated with minimally invasive procedures such as sentinel node biopsy.

Groin node removal has a higher risk of lymphoedema than axillary node removal.



Risk factors for developing secondary lymphoedema

Key risk factors include extent of surgery, lymph node dissection and radiation treatment. Other factors include trauma, infection, high body mass index (BMI) and immobility.

Precautionary measures

Risk reducing measures aim to minimise limb swelling and blockage to lymph transport.

Episodes of inflammation, when there is an increase in interstitial protein, may trigger the onset of swelling. Behaviour changes can reduce the risk of infection, injury or severe bruising and can therefore reduce the risk of triggering lymphoedema.

Clinical procedures

It is currently unknown whether certain procedures such as injections, IV cannulations, blood pressure monitoring and excising skin lesions increase the risk of lymphoedema. Therefore, as a precaution, use the untreated limb for these actions whenever possible.

Patient actions

There are a range of other actions that may be suggested to minimise a patient's risk of lymphoedema, however evidence supporting or refuting the effectiveness of these actions is scarce:

- combinations of flexibility, resistance and aerobic exercise may be beneficial
- avoidance of hot baths, spas and saunas as this may exacerbate swelling
- if the patient is planning air travel or a long-haul road or train trip (e.g. longer than 4 hours) discuss additional preventive measures such as:
  - → application of a compression garment if patient has a history of lymphoedema or if they regularly wear a garment
  - → elevation of affected limb
  - → frequent exercise or movement whenever possible.

Early intervention

Intervention at an early stage can have a significant impact on reducing the risk of developing lymphoedema and the severity of lymphoedema if it develops. Intervention includes education about lymphoedema, and specific advice about exercise with the affected limb.

Patients should be encouraged to resume normal activity after surgery and not restrict movement of their limb(s)/body part.

Early warning signs of lymphoedema

Patients should be educated about the early warning signs and encouraged to inform a health professional about their concerns. It is important to note that early warning signs can be intermittent and can develop months or years before the onset of persistent swelling.

Early warning signs include:

- transient swelling following exercise or physical activity
- feelings of heaviness in the affected limb/body part
- aching, pain or tension in the affected limb/body part
- tightness and fullness (a 'bursting' feeling) in the limb/body part
- clothing, shoes or jewellery feeling tighter.

ASSESSMENT

History

Consider details of:

- cancer treatment
  - → surgery
  - → number of lymph nodes removed
  - → radiotherapy
  - → complications (e.g. post-operative infection/DVT)
- trauma to limb
- cellulitis, infection and ulcers
- travel history.

Physical Evaluation

Conduct a physical examination of:

1. Affected limb/body part to assess

- subcutaneous tissue
  - → pitting/non-pitting oedema
  - → tissue tone
- presence and severity of swelling by measuring circumference of affected limb (trunk or head and neck region) and compare this with unaffected limb using a tape measure[1]
- condition of skin
  - → dry
  - → cracked
  - → infection/tinea
  - → bruising
  - → flaking
  - → ulcers
- presence of Stemmer's sign – thickened skin at the base of the second toe or middle finger, compared with the unaffected limb indicates lymphoedema
- weight and height/BMI
- cardiac and respiratory parameters
- joint range of movement/pain
- axillary cording.

2. **Original site of cancer treatment and recent medical imaging to exclude tumour recurrence.**

Acute onset

If there is an acute onset or a patient with existing lymphoedema experiences an exacerbation, they should be assessed for:

- DVT
- Cellulitis
- Cancer recurrence

and referred as appropriate.

Imaging that may assist with assessment include:

- Ultrasound or CT scan to exclude masses/tumours
- Duplex scan to exclude venous DVT

TREATMENT AND MANAGEMENT

General management principles

Effective management can reduce symptom severity and improve quality of life.

Infection control is essential to reduce the risk of developing or exacerbating lymphoedema.

Acknowledgment of patient concerns and challenges of living with lymphoedema is important and should include practical and emotional aspects.

Patients require support to enable daily, long term management of the condition.

Effective management options may include:

- education on care of the limb/body part including skin care to maintain a protective barrier against infection
- psychosocial support.

Specific management issues:

Weight management

Weight management is essential, as excess body weight may slow lymphatic flow. Encourage regular exercise.

Cellulitis

People with lymphoedema are prone to recurrent episodes of cellulitis.

Urgent antibiotic treatment is essential to control the spread of infection. Antibiotic choice depends on whether there is a wound/bite, allergies and dose varies with weight. When cellulitis occurs with lymphoedema the course of antibiotics may need to be longer (10-21 days). Refer to Therapeutic Guidelines Antibiotics.

- dicloxacillin/flucloxacillin 500mg orally q6h for 7–10 days

  or

- clindamycin 450 mg orally q8h for patients allergic to penicillin). Refer to antibiotic guidelines[2].

Patient should be advised to:

- rest in bed and elevate the affected limb/body part
- continue use of compression garment if comfortable and tolerable
- cease lymphatic drainage if part of routine care until cellulitis resolved.

If frequent recurrence, consider continuous prophylaxis

- phenoxymethylpenicillin 250 mg orally bid for 6 months initially.

For more information, refer to ALA Consensus Guideline: Management of Cellulitis in Lymphoedema **https://www.lymphoedema.org.au**

Patient education

Patients should be educated about the importance of:

- skin care
  - → good skin care is essential to ensure healthy skin acts as a barrier to infection
  - → soap free washes and daily moisturising of the skin
  - → keep skin free of infections such as tinea
  - → early review of wounds to minimise risk of ulcers
  - → avoid constrictions (e.g. jewellery, tight clothes, shoes) to the affected limb/body part
- foot care
  - → feet should be cleaned and dried daily
  - → any infection/injury should be treated promptly
  - → consider podiatry referral.

Referral

Consider referral to an appropriately qualified lymphoedema practitioner or clinic for assessment if:

- symptoms unresponsive to management
- visible swelling and/or clinical pitting
- obvious discrepancy in limb sizes
- patient experiences functional, joint or mobility problems.

Consider a Chronic Disease Management Care Plan.

If symptoms are severe, early referral without a period of monitoring is appropriate.

Specialised treatment

Best practice management has a holistic multidisciplinary approach and is provided by appropriately qualified lymphoedema practitioners.

Complex Lymphoedema Therapy (CLT)* consists of the following components:

- education, skin care and exercise
- Manual Lymphatic Drainage (MLD) – achieves volume reduction, however larger reductions are achieved when combined with compression therapy
- compression therapy
  - → compression bandaging/individually fitted garment – long term use of compression is effective in reducing and/or controlling limb swelling.
  - → compression devices – 'Wraps' with Velcro straps are also available

Treatment is individualised and not all components of treatment may be necessary in all cases.

Those with more severe lymphoedema may require intensive treatment of 2-4 weeks of intensive (daily or alternate daily) treatment of MLD, followed by compression bandaging, skin care and prescribed exercises. Self-management by the patient then continues at home.

With improved health education people are reporting early limb changes promptly and this is contributing to a reduction in the need for intensive treatments

*Also known as Complex Physical Therapy (CPT) or Complex Decongestive Therapy (CDT).

Psychological and emotional wellbeing

Implementing psychosocial care strategies help patients and their families/carers to take a proactive role in the management of their lymphoedema and to achieve improvements in their quality of life.

Encourage patients to talk about their general psychological and emotional wellbeing, and explore any specific concerns or sources of distress.

Check clinical issues including:

- anxiety
- depression
- interpersonal functioning
- coping with physical symptoms
- body image and sexuality
- lack of motivation
- ability to cope.

Other treatments

Surgery

Surgery has a very limited place in the management of secondary lymphoedema. Microsurgery for lymphoedema is an emerging field. Liposuction followed by every-day for life compression wear has a small place when there is marked limb size asymmetry.

Pharmacological interventions

It is important to note that:

- diuretics are ineffective in lymphoedema
- some medications may exacerbate the condition (e.g. antihypertensives, steroids, HRT, anti-inflammatory agents)
- there is no conclusive evidence that benzopyrones are effective in secondary lymphoedema treatment.

Low Level Laser Therapy and Pneumatic Pumps

Further research is required to validate treatment doses and regimes. A small number of studies suggest that these treatments may have benefits in achieving volume reductions.

Alternative therapies

There are a range of alternative treatment options that have been used in the treatment of lymphoedema, however research findings on their effectiveness are scarce. These treatments include ultrasound therapy, hyperbaric oxygen therapy, vitamin E supplementation, microwave therapy, acupuncture and moxibustion, mulberry leaf, aromatherapy oils, magnetic fields, vibration and hyperthermia.

RESOURCES

Lymphoedema Compression Garment Program (LCGP)

- Subsidised garments are provided if receiving a Centrelink pension or assessed as being a low or medium income earner in Victoria
- LCGP is funded by the Department of Health and Human Services (DHHS) and administered by the State-wide Equipment Program (SWEP)
- Application forms are available from **https://swep.bhs.org.au/lymphoedema-compression-garment-program.php**
- The initial LCGP eligibility form must be certified by a medical practitioner.
- Further assessment and garment prescription is undertaken by the lymphoedema practitioner
- P: 1300-747-937 / (03) 5333-8101 Fax: (03) 5333-8111
E: swep@bhs.org.au

Australasian Lymphology Association (ALA)

- ALA is the peak professional organisation promoting best practice in lymphoedema management, research and education in Australasia.
- P: 1300-935-332 (Toll free in Australia)
W: **www.lymphoedema.org.au**

Lymphoedema Association of Victoria (LAV)

- LAV provides information, education and support for people with lymphoedema
- Contact LAV for lists of lymphoedema practitioners/clinics in your local area
- P: 1300-852-850 W: **www.lav.org.au**

Online Clinical Pathways

PHN	Resource
Eastern Melbourne	HealthPathways Melbourne **melbourne.healthpathways.org.au**
Gippsland	HealthPathways Gippsland **gippsland.healthpathways.org.au**
Murray	Murray HealthPathways **murray.healthpathways.org.au**
North Western Melbourne	HealthPathways Melbourne **melbourne.healthpathways.org.au**
South Eastern Melbourne	Online Clinical Pathways **semphn.org.au/resources/pathways.html**
Western Victoria	HealthPathways Western Victoria **westvic.healthpathways.org.au**

References

1. International Society of Lymphology, The diagnosis and treatment of peripheral lymphedema. *2016 revision of the Consensus document of the International Society of Lymphology. Lymphology, 49(2016): 170-184.*
2. Therapeutic Guidelines Ltd: Antibiotic (eTG July 2018 edition) – *Skin and soft tissue infections: bacterial.*

ASSESSMENT

PATIENT HISTORY

- cancer treatment
  - → surgery
  - → lymph node removal
  - → radiotherapy
  - → complications (e.g.post-operative infection/ DVT)
- trauma to limb
- cellulitis, infection, ulcers
- travel history

PHYSICAL EXAMINATION OF

1. Affected limb/body part to assess
   - subcutaneous tissue (pitting/non-pitting oedema)
   - presence and severity of swelling (measurement of limb circumference)
   - condition of skin
   - presence of Stemmer's sign
   - weight and height / BMI
   - cardiac and respiratory parameters
   - joint mobility
   - axillary cording
2. Original site of cancer treatment, including recent medical imaging →

If abnormality investigate and refer

EARLY INTERVENTION

If NO swelling detected, initiate 'at risk' education and/or review patient education about:

- early warning signs that may appear months or years before onset of swelling:
  - → transient swelling
  - → feelings of heaviness, aching, pain or tension, tightness and fullness in limb/body part
  - → jewellery, clothing or shoes feeling tighter
  - → impaired movement or loss of function
- skin care
- travel
- injuries and risk of infection
- exercise/weight issues
- psychological support
- optimising limb function

Precautionary measures

Clinical procedures - as a precaution use the untreated limb for injections, IV cannulations, blood pressure monitoring and excising skin lesions. It is currently unknown whether these procedures increase the risk of lymphoedema.

Patient actions that can be suggested to minimise risk:

- combinations of flexibility, resistance and aerobic exercise may be beneficial
- avoid hot baths, spas and saunas
- if planning air, long-haul road or train trip (e.g. longer than 4 hours) discuss additional preventive measures such as:
  - → application of compression garment if patient has a history of lymphoedema or if they regularly wear a garment
  - → elevation of affected limb
  - → frequent exercise or movement

TREATMENT AND MANAGEMENT

If SWELLING IS DETECTED initiate the following management:

- skin care
- infection control → *Cellulitis**

Urgent antibiotic treatment is essential

- physical exercise
- weight management
- psychosocial support
- co-morbidities
- monitor and review medications/garments
- promote self-management

Promote team management approach for regular review of patient

REFERRAL

Initiate referral to appropriately trained lymphoedema practitioner or clinic if:

- symptoms unresponsive to management
- there is visible swelling/clinical pitting
- obvious discrepancy in limb sizes
- there are functional, joint or mobility problems

If symptoms are severe, early referral without a period of monitoring is appropriate.

SPECIALISED LYMPHOEDEMA TREATMENT

Complex Lymphoedema Therapy (CLT)

- Special exercises
- Manual Lymphatic Drainage (MLD)
- Compression Therapy – garment/bandaging

ACUTE ONSET / EXACERBATION

If NEW ONSET or exacerbation of lymphoedema detected on physical examination consider:

- Tumour recurrence →
- DVT →
- Cellulitis

Investigate appropriately and refer

*Urgent antibiotic treatment for cellulitis

Antibiotic choice depends on whether there is a wound/bite, allergies and dose varies with weight. When cellulitis occurs with lymphoedema the course of antibiotics may need to be longer (10-21 days). Refer to Therapeutic Guidelines Antibiotics.

- dicloxacillin/flucloxacillin 500mg orally q6h for 7–10 days

  or
- clindamycin 450 mg orally q8h for patients allergic to penicillin

Advise patients to:

- rest in bed and elevate the affected limb
- continue use of compression garment if tolerable
- cease lymphatic drainage until cellulitis resolved

If frequent recurrence consider continuous prophylaxis

- → phenoxymethylpenicillin 250 mg orally bid for 6 months initially

This information is adapted with permission from Cancer Australia.

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