

# Treatment of head and neck lymphedema

## Improving patient quality of life

By Marize Ibrahim

As a segue from the previous article titled “Assessment of head and neck lymphedema” in the *Pathways* Summer edition 2022, head and neck lymphedema (HNL) is a significant complication of treatment for head and neck cancer (HNC). Its presence in this population is generally under recognized and under treated. As such, HNL has received less attention than lymphedema that affects the extremities.<sup>1</sup> For example, most of the literature focuses on breast-cancer related lymphedema, where between 5-50% of survivors will be affected.<sup>2,4</sup> In contrast, as much as 90% to 97% of HNC survivors can be affected with HNL, either externally (i.e., face, neck) or internally (i.e., throat).<sup>5,6</sup>



Clinically, the presentation of lymphedema parallels its level of severity. In the earliest stage, HNL may present as heaviness, tightness, and barely noticeable fullness without functional impairment. However it can progress to a disfiguring condition with moderate to severe pitting edema and fibrosis that may or may not affect function.<sup>1</sup> Depending on the location of the edema, substantial functional consequences may be present, including impairments affecting problems with speech, breathing, swallowing, and eating.<sup>1</sup> Contrary to limb lymphedema, HNL symptoms are often worse at night and improved during the day due to the positive impact of gravity. Some HNL patients post laryngectomy may experience problems with stomal access for hygienic purposes,



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difficulties with respiration, and with management of a tracheoesophageal voice prosthesis. Swallowing, safely and efficiently, has been found to be impacted both by intra-oral edema and pharyngeal edema.<sup>7,9</sup> Additionally, quality of life (QOL) is often significantly impacted by HNL. This includes, but is not limited to frustration, embarrassment, and depression due to both functional and cosmetic changes.<sup>10-11</sup>

Treatment of HNL is essential for the rehabilitation of these deficits and improvement of the patient's QOL. However, little has been published regarding effective management of HNL.<sup>12-13</sup> To date, there is no published gold standard for treatment. Traditionally, Decongestive Lymphatic Therapy (DLT) is considered the “gold standard” of lymphedema management.

#### The goals of DLT include:

- 1)** to educate patients about lymphedema and its progression;
- 2)** to provide risk reduction strategies;
- 3)** to reduce excess volume and fibrosis levels; **4)** to minimize the risk of bacterial infection (cellulitis);
- 5)** to restore functional mobility and activities of daily living; **6)** to improve the cosmetic appearance and the patient's QOL and **7)** to teach self-care to promote independence in lymphedema management.<sup>14</sup>

Very little robust research is currently available to guide best practice guidelines for HNL treatment.<sup>15</sup> HNL is distinctly different from lymphedema that occurs in other regions



of the body (i.e., upper and lower extremity), thus requiring a customized approach for its assessment and treatment.<sup>16</sup> By utilizing the pillars of DLT management, a thorough head and neck (H&N) treatment protocol was established using a multidisciplinary approach at the McGill University Health Centre (MUHC) Lymphedema Clinic, a Lymphatic Education & Research Network (LE&RN) of Excellence. The following is a brief outline of the treatment tools utilized to manage HNL.

#### Treatment goals can be divided into five sections:

##### 1 Self-Manual Lymphatic Drainage (MLD):

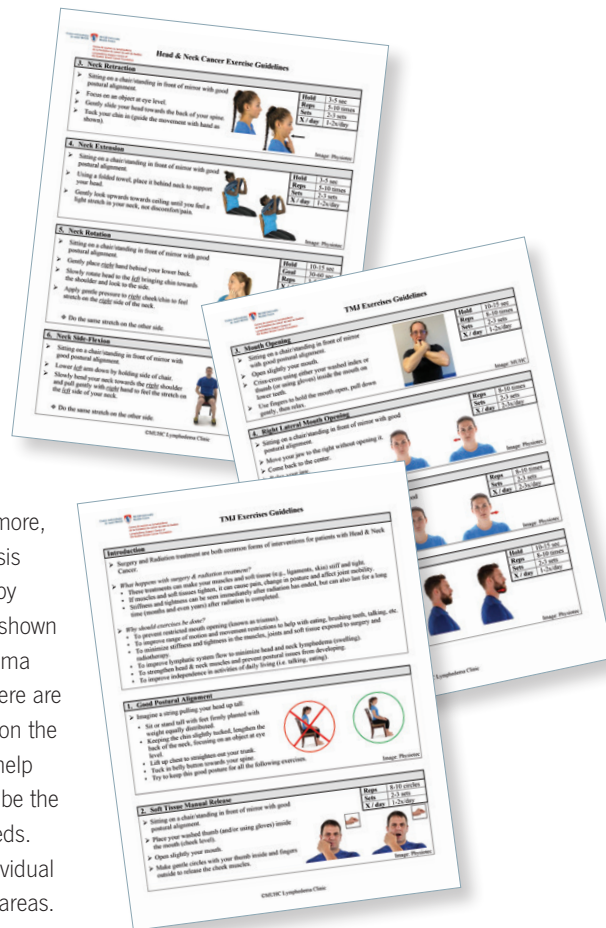
The aim of self-MLD is to move fluid from the swollen region into another area where the lymphatic system is working better, so that the healthier lymphatics can remove the excess fluid accumulation. For HNL, the lymphedema

therapist assesses the extent of the edema and reviews the best drainage pathway to take for each individual case, as this will vary depending on the type of cancer treatment and the areas affected. MLD for H&N is very different compared to upper or lower lymphedema. Firstly it's much shorter, and second depending where the scars are, the therapist has to be careful not to go through them but around to the posterior neck. Radiation fibrosis is also a big problem for them, so we tend to combine massage with MLD to help break up the fibrosis or else the lymphedema won't be able to pass through.

**2 Skin care:** As injury and infections can lead to local inflammation, further increasing lymphatic load; reducing the risk is critical. Some strategies taught to patients include decreasing the risk of sunburn (or other burns), insect bites or scratches from animals and skin abrasions (both externally and internally). Safer grooming practices are also encouraged (particularly for males), to avoid abrasions to the skin. Teaching the importance of using emollient/creams/lotions/oils is also essential to improve skin integrity that has been radiated. Cuts and open wounds/sores should be carefully treated with an antibiotic ointment and monitored for the development of infection. Any sign or symptom of bacterial cellulitis, redness, warmth, pain, increased swelling should be investigated quickly by a physician for appropriate medical treatment. This can be challenging to assess due to permanent skin changes from surgery and radiation. It's rare to get a cellulitis in the H&N region as our clinic sees more ulcers and would issues for this population.

**3 Compression:** A compression garment may or may not be required in any particular HNL patient. The goal of a H&N compression garment is to reduce lymphedema, promote lymphatic drainage and prevent refilling or worsening of the lymphedema. Compression is often used over night, as this is when an increase in HNL usually occurs. Modifications to donning of compression however may be required if patients have other medical conditions that may hinder them from using it at night (i.e. CPAP machine, tracheostomy). Furthermore, compression may help soften skin fibrosis that often develops following radiotherapy treatment. Compression has also been shown to reduce internal pharyngeal lymphedema which can improve dysphagia.<sup>16, 17</sup> As there are several types of compression garments on the market, the lymphedema therapist will help guide the patient with which one would be the most appropriate for their individual needs. Additionally, pads may be made for individual cases to help soften pitting and fibrotic areas.

**4 Exercise:** Regular exercise is critical for HNL. These exercises can be broken down into different segments, including exercises for a) shoulder mobility (i.e. shoulder flex, abduction, external/internal rotation), b) postural re-alignment, c) cervical spine/neck mobility (flexion, extension, right and left rotations, right and left side flexion and combined movements), d) tongue mobility (frenulum, elevation, protrusion, lateralization bilaterally), e) temporomandibular - TMJ (depression, elevation, protrusion, retraction and lateral movements), f) facial mobility



(cheek, palate, eye opening/closing) and g) dysphagia-swallowing maneuvers. Exercise promotes drainage by alleviating restrictions, improving muscle contraction to pump lymphatic fluid and increasing lymph flow. Deep breathing exercises are particularly helpful for H&N patients, added with MDL sequence and usually with shoulder ROM to get thoracic expansion. Additionally, achieving and maintaining a healthy body weight, as per the oncologist's and nutritionist's advice, is critical for lymphedema management to minimize excess strain on the lymphatic system.



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**5 Self-Management:** Lymphedema is a progressive condition that can advance through various stages of swelling and fibrosis, which can impair function, promote infection, and elicit considerable psychological distress. Daily self-management is required to slow lymphedema progression and minimize complications. Once lymphedema begins, lifetime self-management is required as currently there are no surgical or medical interventions that provide a cure. In contrast to other sites that may be affected by lymphedema, gravity appears to assist in lymph drainage of the H&N region, which naturally helps with



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management. Elevation such as wedges or bed adjustments can assist with reducing refill of the H&N areas overnight, especially if compression is not tolerated or effective. Self-management strategies include teaching the patient about the essential pillars of lymphedema management including self-MLD, exercise, compression (as needed), and skin care. Patients with HNL can benefit from a self-administered treatment program in the home setting once they have been properly assessed by a certified lymphedema therapist.<sup>17</sup>

In summary, the treatment of HNC

leads to post-treatment sequela including lymphedema, which can worsen and pose a great challenge for patients and clinicians. Unfortunately, HNL has not been well studied nor documented. This article summarizes a treatment protocol utilized at the MUHC Lymphedema Clinic for patients with HNL using the essential pillars of DLT. [18](#)

**For a full set of references including three documents outlining practical exercises for H&N cancer patients, visit <https://www.canadalymph.ca/pathways-references/>**

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