

# Assessment of External Lymphedema in Patients With Head and Neck Cancer: A Comparison of Four Scales

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**D**amage to or removal of regional lymph nodes and vessels from cancer or its treatment are among the most common conditions that lead to secondary lymphedema in the United States (Holcomb, 2006; Rockson & Rivera, 2008). Although lymphedema is an acknowledged problem in the breast cancer population, the problem is only now being recognized in patients with head and neck cancer (HNC) (Bruns et al., 2004; Deng et al., 2012; Deng, Ridner, & Murphy, 2011; Lewin, Hutcheson, Barringer, & Smith, 2010; Micke et al., 2003; Smith & Lewin, 2010). Aggressive multimodality treatment has improved survival rates for patients with HNC, leaving them at risk for the development of late treatment effects. Patients with HNC are at high risk for the development of secondary lymphedema because of treatment-related lymphatic system damage from surgery, radiation, and tumor infiltration of soft tissues (Deng et al., 2012; Smith & Lewin, 2010). These patients may develop secondary lymphedema externally (e.g., face, neck) and internally (e.g., larynx, pharynx). The current study's authors reported the results of a cross-sectional analysis of lymphedema in 103 patients with HNC post-treatment. Those results indicated that lymphedema is a frequent complication of HNC treatment associated with substantial symptom burden, functional deficits, and decreased quality of life (QOL) (Deng et al., 2013). Although the data clearly indicated that lymphedema is a clinically meaningful problem in the HNC population, confirmatory data are lacking, in part because of a lack of validated tools for lymphedema assessment in this population.

To date, little attention has been given to methodologic approaches specific to secondary lymphedema in patients with HNC (Deng et al., 2011; Földi, Földi, Strösenreuther, & Kubik, 2007; Lymphoedema Framework, 2006). Prior to selecting the assessment tools for their preliminary study, the current authors developed a comprehensive literature review to select the most suitable tools to measure lymphedema in their cross-sectional study. Based on that review, they identified four scales that eval-

**Purpose/Objectives:** To compare available grading and staging scales that measure external lymphedema in patients with head and neck cancer (HNC) and to assess problems and gaps related to these tools.

**Design:** Cross-sectional.

**Setting:** A comprehensive cancer center in Tennessee.

**Sample:** 103 participants post-HNC treatment.

**Methods:** Four scales were used to evaluate study participant external lymphedema status, including the Common Terminology Criteria for Adverse Events (CTCAE) Lymphedema Scale (version 3.0), American Cancer Society Lymphedema Scale, Stages of Lymphedema (Földi's Scale), and the CTCAE Fibrosis Scale (version 3.0).

**Main Research Variables:** Occurrence rate, severity of lymphedema, and components and descriptors of each scale.

**Findings:** The prevalence and severity of external lymphedema differed based on the tools. Each tool had an identified limitation. Current theory postulates a continuum between lymphedema and fibrosis, but only the Földi's Scale adequately reflected that concept.

**Conclusions:** None of the available scales clearly captured all the important characteristics of external lymphedema in patients with HNC. A need exists to develop a clearly defined and validated scale of external lymphedema in the HNC population.

**Implications for Nursing:** Oncology nurses should take an active role in addressing issues related to lymphedema assessment in patients post-HNC treatment; however, new assessment tools need to be developed for clinical use.

**Knowledge Translation:** Early identification and accurate documentation of head and neck lymphedema are critically important to prevent lymphedema progress. However, existing grading criteria failed to capture important characteristics of external head and neck lymphedema. More research efforts need to be made to address this under-recognized issue.

uated secondary lymphedema. Some tools were specific to patients with HNC, whereas others were developed for lymphedema in general without reference to the cause. Specifically, two scales were developed for grading head and neck lymphedema: the Common Terminology Criteria for Adverse Events (CTCAE) Lymphedema Scale