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Managing the Patient With **DYSPHAGIA**

Dysphagia, or difficulty swallowing, is a common medical condition among today's patients. It is estimated that approximately 15% of individuals older than 60 years experience dysphagia. Approximately 40% of institutionalized patients (i.e., patients residing in nursing homes, group homes, or assistive care facilities) have swallowing difficulties (Zagaria, 2005).

The swallowing mechanism is quite complex, involving more than 50 pairs of muscles. Impairment of any one or more of these muscles may result in a serious health risk to the patient. The patient may be at risk of aspirating food or saliva into the lungs, creating a potentially life-threatening medical condition.

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The 3 Stages of the Swallow

The swallow is divided into 3 phases: oral, pharyngeal, and esophageal. The first, or oral, phase begins when the bolus enters the oral cavity and is mixed with saliva during mastication to allow formation of a cohesive bolus.

The second stage of the swallow, the pharyngeal stage, is entered as the bolus is propelled toward the oropharynx, where the swallow reflex is triggered. Soft palate elevation during this stage prevents foods and liquids from entering the nasopharynx. The hyoid bone and larynx are pulled upward and anteriorly and the vocal folds midline. The epiglottis, a cartilage flap, closes, thereby protecting food from entering the airway. The posterior tongue base propels the food through the pharynx with the assistance of the peristaltic wave contraction of the posterior pharyngeal wall (Nam-Jong Paik, 2006).

As the food is passed through the pharynx to the esophagus, the upper esophageal sphincter relaxes, allowing the food to pass through into the esophagus. Peristaltic wave contractions continue to propel the food toward the stomach. The lower esophageal sphincter, located at the juncture of the esophagus and stomach, opens to allow entry of the food into the stomach. This sphincter then closes, preventing reflux (Nam-Jong Paik, 2006). Esophageal conditions affecting swallowing may include gastroesophageal reflux, achalasia, and esophageal strictures, among many others.

A delay or impairment in any stage of the swallow may result in dysphagia. The speech and language pathologist (SLP) works with the oral and pharyngeal stages of the swallow. The SLP may evaluate the need for an instrumental assessment of the swallow, identify the need for a referral to another medical professional, make appropriate recommendations regarding management of the patient's dysphagia, provide

swallowing treatment, and serve as an educational source for the training of other professionals in management of the patient's dysphagia (American Speech and Language Hearing Association, 2002).

Symptoms in the oral stage, the first stage of the swallow, may include frequent drooling, poor rotary jaw movement, difficulty manipulating the bolus within the oral cavity, loss of food from the mouth during eating, and residue after eating. The patient may pocket food in his or her cheek or have food remaining within the oral cavity along the tongue or palate after eating.

Overt symptoms in the pharyngeal stage that suggest swallowing dysfunction include coughing or choking during eating. A wet-sounding vocal quality or frequent throat clearing may be heard. Patients may complain about the sensation of food "sticking" in their throat or may make multiple attempts to swallow a small bolus (Table 1).

Unfortunately, many patients also are at risk for what is known as a silent aspiration event. Silent aspiration is defined as food or saliva aspirated with no obvious reaction, such as coughing or choking. This is the reason why it is very im-

Table 1. Oral Stage Dysphagia Symptoms vs. Pharyngeal Stage Dysphagia Symptoms

Oral Stage Dysphagia Symptoms	Pharyngeal Stage Dysphagia Symptoms
1. Difficulty with bolus management	1. Coughing/choking while eating
2. Inability to manage oral secretions (drooling)	2. Wet vocal quality
3. Food residue along the tongue/palate or food retained in cheeks after swallowing	3. History of frequent upper respiratory tract infections or pneumonia
4. Difficulty chewing food	4. Complaints of food "sticking" in throat
5. Loss of food from mouth while eating	5. Spiking high-grade temperature or consistently running a low-grade temperature
	6. Increased respirations with oral intake
	7. Throat clearing during meals
	8. Pain during the swallow
	9. Leakage of liquids through the nose while eating
	10. Repetitive swallows

portant for the SLP to obtain extensive case history information. Right lower lobe pneumonias often are viewed as a primary clinical indicator of possible aspiration, as are frequent low-grade temperatures or a sudden spike in temperature. Patients exhibiting a wet vocal quality should always be evaluated for dysphagia. This is a clinical indicator that the patient may be aspirating his or her own saliva. Bacterial organisms in the saliva may potentially cause pneumonia.

Cognitive dysfunction also may affect the swallowing process. Patients, often those with degenerative neurologic disorders (i.e., Alzheimer's, dementia), may begin to experience difficulty knowing what to do when food is placed in the mouth. They may exhibit a tonic bite (i.e., holding the mouth closed when food is introduced) or may hold food in their mouths for lengthy periods, unaware of the need to begin the swallowing process (swallowing apraxia).

Sensory techniques such as gentle pressure on the tongue may help the patient remember to swallow. Cueing and encouraging a patient to feed him- or herself may help the patient elicit a more natural swallow. Eating is an automatic behavior, and by allowing a patient to feed him- or herself, the medical professional is not only encouraging independence, but also allowing the natural process of swallowing to occur.

Causes of Dysphagia

Dysphagia often is thought of as resulting from a stroke or other neurologic injury such as a traumatic brain injury. However, dysphagia may result from a host of medical problems (Table 2).

Table 2. Disorders Commonly Diagnosed With Dysphagia

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|--|-------------------------------------|
| 1. Patients with neurological conditions, such as cerebrovascular accidents, traumatic brain injuries, Parkinson's, and so forth | 5. Esophageal disorders |
| 2. Generally medically debilitated patients | 6. Patients with tracheostomies |
| 3. Chronic obstructive pulmonary disease | 7. Failure to thrive |
| 4. Head and neck cancers | 8. Cleft palate |
| | 9. Vocal fold paralysis |
| | 10. Gastroesophageal reflux disease |
| | 11. Dementias (ie, Alzheimer's) |



Patients with dysphagia should avoid mixing consistencies.

Mixed consistencies typically have both a solid and a thin liquid consistency.

Any neurologic injury may cause dysphagia, particularly if brain stem impairment is involved. Dysphagia also may result from general debilitation in patients with heart failure, cancer, or other medical condition. Patients with chronic obstructive pulmonary disease (COPD) also should be closely monitored for signs or symptoms of dysphagia. This population often is at risk for a silent aspiration event. Even trace amounts of aspiration are a potential health risk for COPD patients because their lung status is already compromised.

Medications also may affect swallow function. Xerostomia, or dry mouth, is a common complaint among patients taking heart medications, diabetic patients, and some patients with cancer. Psychotropic and anticholinergic medications or medications for controlling seizures also may result in dysphagia (Al-Shehri, 2003). In addition, nitrates may increase reflux (Swigert, 2000).

How Can a Speech and Language Pathologist Help?

The goal of dysphagia evaluation and treatment is to determine how the patient

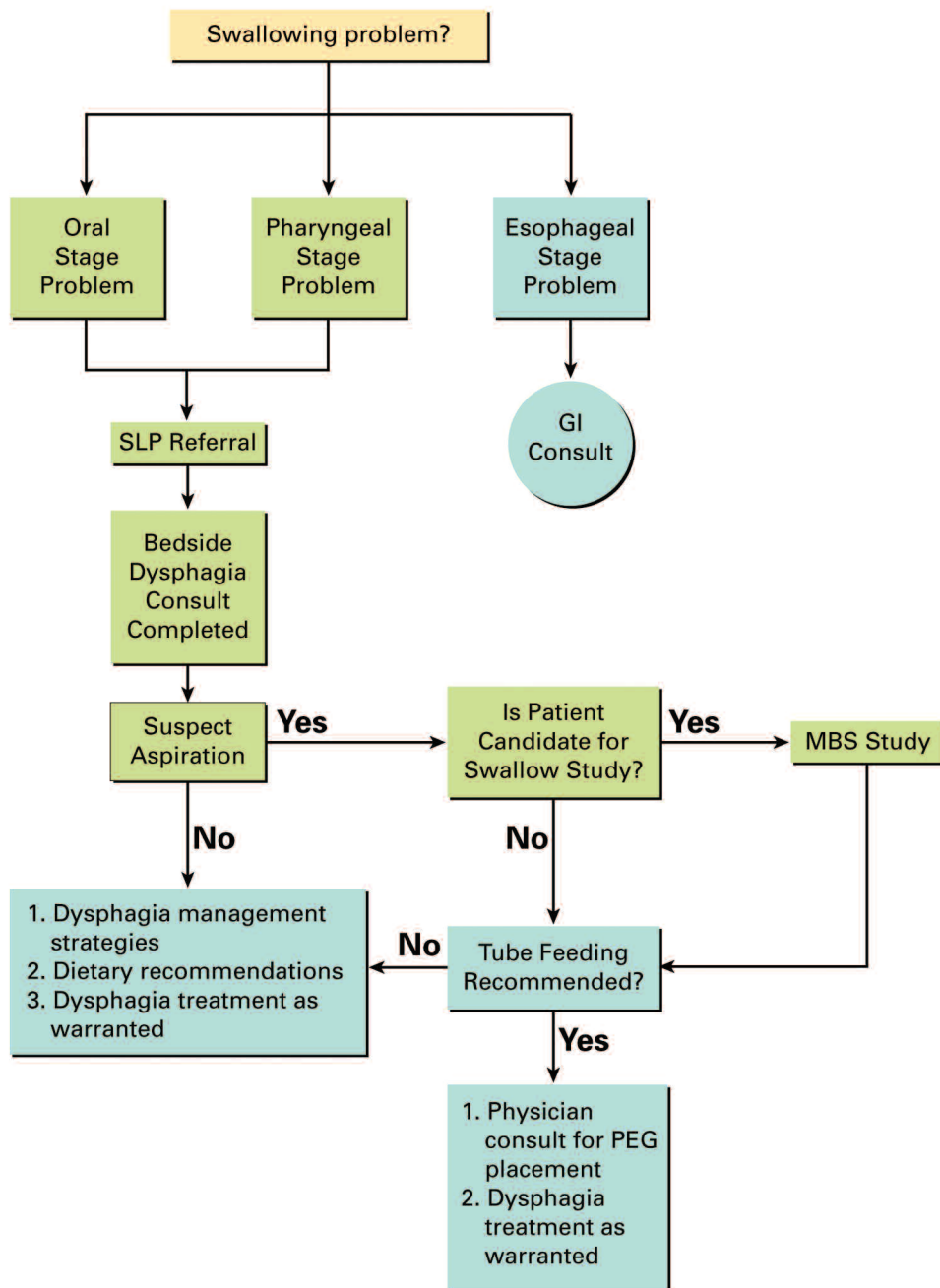


Figure 1. Dysphagia flow chart.

may most safely be fed by mouth. After completing an initial assessment, the SLP determines whether a patient can eat by mouth and the level of supervision required. The SLP also assesses whether a modified barium swallow study is warranted and works with the physician to determine and recommend the most appropriate objective assessment (Figure 1). A modified barium swallow study allows the SLP to create a video or

“movie” of the swallow evaluating each stage of the swallow. A radiologist is typically present during the study to determine medical pathology, such as tumor or other anomaly (Haselkus & Kander, 2004). Thin liquids, thickened liquids, pureed and solid consistencies are presented by the SLP while examining the swallow through videofluoroscopy. This allows the SLP to view the food from the time it enters the oral cav-

ity until it passes through the pharynx into the esophagus. The purpose is not only to determine whether aspiration is present, but also to determine what compensatory treatment strategies may assist in reducing aspiration risk and the safest consistencies for dietary intake. Compensatory strategies may include modifying bolus size (encouraging small bites/sips), chin tuck, positioning strategies, alternating liquids and solids, and the like.

The SLP may recommend the use of a thickening agent to decrease the risk of aspiration. Thickeners increase the viscosity, or thickness, of the bolus, slowing its movement through the mouth and pharynx, thereby promoting a safer swallow for some patients. Patients may be placed on nectar-thick, honey-thick, or pureed thick liquids. Not particularly pleasant, compliance is a significant issue with these patients, and their pulmonary status should continue to be closely monitored. Gel thickeners, such as SimplyThick (SimplyThick, LLC, St. Louis, Missouri), are becoming more palatable, and some patients are more compliant with this type of thickener than with the powdered forms.

The patient's diet may need to be softened or modified to pureed consistency, thereby improving oral control and reducing the risk of choking. Foods to be avoided often include raw fruits and vegetables, nuts, tougher meats, sticky breads, and foods that break apart easily in the mouth (e.g., cornbread, rice).

Patients with dysphagia also should avoid mixing consistencies. Mixed consistencies typically have both a solid and a thin liquid consistency (e.g., canned fruit in its juice or cereal with milk). Ice cream and jello should never be allowed unless thin liquids are tolerated. Often misconstrued as a thickened liquid or pureed consistency due to their solid state, ice cream and jello are considered thin liquids.

Treating Dysphagia

Dysphagia treatment is crucial to recovery. Direct dysphagia treatment may train the patient, family, or both to implement compensatory strategies. It may involve exercises to improve oral control or to improve the overall strength, coordination, and initiation of the oropharyngeal swallow.

Compensatory training may teach the patient to implement strategies for further reduction of



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aspiration risk. These strategies may be the only option for the patient to continue feedings by mouth. For example, a chin tuck strategy is commonly recommended. This strategy places the epiglottis, a cartilage flap located immediately above the larynx, in a more forward position, allowing for improved airway protection during swallowing. A head turn may be beneficial for patients with unilateral vocal fold paralysis to improve vocal fold closure during the swallow or to help patients with hemiparesis affecting movement of the bolus on one side of the throat. It is important to note that these strategies should be determined by the SLP before implementation is attempted.

VitalStim (Chatanooga Group, Hixson, Tennessee), an electrical stimulation treatment, is a relatively new method of dysphagia treatment (www.vitalstim.com). It allows the clinician to stimulate the muscles of the swallow directly to both strengthen swallow musculature and retrain the pathways of the brain (Wijting & Freed 2003). This treatment is provided in outpatient, hospital, and long-term care facilities as well as in home health settings.

Adaptive feeding equipment also may be an option that could help to encourage implementation of dysphagia management strategies such as modifying bolus size or implementing a chin tuck strategy. For example, a dysphagia cup may be contoured to prevent the patient from tilting his or her head back while swallowing.

Home Care Nurse Implications

Retaining the ability to eat by mouth is essential to most people. This very basic function satisfies not only their nutritive needs, but also their social needs. Through early identification and intervention, the interdisciplinary team can help these dysphagia patients swallow more safely. Learning to identify when a swallow evaluation is warranted is crucial to the patient's recovery.

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The author of this article has no significant ties, financial or otherwise, to any company that might have an interest in the publication of this educational activity.

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