Dysphagia and Delayed Wound Healing: How are They Related?

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Consider the following scenario: Your patient, Ms. T, is a 70-year-old woman whose surgical wounds are healing poorly. You happen to visit her during hospital rounds just after she finished breakfast and you notice that she is coughing persistently and her voice has a wet, gurgly quality. She complains that she feels as if food is getting stuck in her throat when she eats.

These symptoms suggest Ms. T may have dysphagia, a perceived difficulty in swallowing characterized by the abnormal transfer of a bolus of food from the mouth to the stomach involving any or all of the three stages of swallowing (oral, pharyngeal, or esophageal). Because the esophageal phase of swallowing is strictly involuntary, this article will focus on oropharyngeal dysphagia and refer to it simply as “dysphagia.”

Dysphagia can lead to significant health issues such as dehydration, malnutrition, muscle breakdown, fatigue, aspiration, pneumonia, and a general decline in functional status, factors that can contribute to skin breakdown and prolonged wound healing. Proper evaluation and management of dysphagia can facilitate marked improvements in nutrition and hydration, and ultimately, skin integrity.

Signs and Symptoms of Dysphagia

Patients with dysphagia display a variety of clinically observable signs, symptoms, and complaints related to eating or swallowing. Some of the problems encountered include the inability to keep a bolus of food in the mouth, difficulty in gathering the bolus in the back of the tongue, food remaining in the mouth after swallowing, taking too long to eat solid foods, eating only soft foods, hesitation or inability to initiate swallowing, coughing or choking when drinking or eating (or after eating), hoarseness, wet voice quality (“gurgly”), frequent throat clearing, food stuck in the throat or at the bottom of the neck, nasal regurgitation, frequent repetitive swallowing, avoiding social dining, dry mouth or lack of saliva, drooling or excessive saliva, pocketing food in the cheek, pain with swallowing, and recurrent pneumonia. Any one or a combination of these issues may lead to reduced food intake and subsequent unintended weight loss, which affect wound healing.

Dysphagia also takes a psychological toll on its sufferers, which can further compromise health. Many social activities and forms of entertainment involve eating and drinking, often in the presence of friends, family members, and coworkers. If a person experiences major changes in the swallowing process, this can lead to feelings of shame, anxiety, depression, fear of eating, and isolation that significantly impact quality of life.

Therefore, a person with difficulty swallowing must be identified so the condition can be managed before there are severe psychological and physical consequences.

Conditions Associated with Dysphagia

Although taken for granted, swallowing is a highly coordinated and complex series of voluntary and involuntary psychological, sensory, and motor behaviors. Normal swallowing function involves six cranial nerves, precise timing, and the critical cessation of breathing until food and liquid can be cleared into the upper gastrointestinal tract. Multiple conditions can affect the ability to swallow, including but not limited to treatment or surgery related to cancer of the head and neck, amyotrophic lateral sclerosis (ALS), Parkinson’s disease, dementia, stroke, multiple sclerosis, head injury, peripheral neuropathy, alcoholic myopathy, inflammatory muscle disease, fibrosis, enlarged thyroid gland, rheumatoid arthritis, myasthenia gravis, and certain drugs with dopamine antagonist action such as metoclopramide, commonly prescribed for gastroesophageal reflux disease.

Normal aging also influences swallowing ability. An estimated nearly 40% of Americans 60 years of age and older experience dysphagia. One reason is that the presence of chronic diseases increases with age and dysphagia is a comorbidity of many age-related diseases and/or their treatments. Normal, age-related changes in the oral cavity also contribute to dysphagia in the elderly adult. For example, an elderly edentulous patient not only has an impaired ability to chew due to tooth loss, but also may have age-related muscle loss in the tongue and lingual muscles, reducing the effect of the chewing process. Older adults are more likely to experience xerostomia or reduced flow of saliva necessary for the lubrication of food, which may be exacerbated by certain medications. Not only do...
many medications cause xerostomia, but also many affect cognition and mental status, which can impede adequate food and fluid intake. Finally, older adults experience diminished sensory nerve function for taste, temperature, and tactile sensation. All of these factors contribute to an impaired swallow response that would normally facilitate the transport of a bolus of food from the mouth to the esophagus.2,4

**Determination of Dysphagia**

Differentiating symptoms of dysphagia from those of common age-related diseases can be challenging, particularly because many older adults with swallowing problems also have concurrent language or cognitive difficulties that impact their ability to clearly express their symptoms. Health professionals such as nursing staff who interact with patients on a daily basis are often responsible for screening for dysphagia. Registered dietitians (RDs) who conduct mandatory nutrition screening and assessment and meal observations in acute and long-term care facilities also may be able to determine why patients are selecting or avoiding certain food items and recommend a more comprehensive swallowing evaluation. Speech language pathologists (SLPs), also known as speech therapists, are trained to conduct bedside swallowing evaluations that include history, oropharyngeal sensorimotor assessment, and evaluation of trial swallows of foods and liquids of varying consistencies in order to determine the correct nutrition prescription.2

Ultimately, a comprehensive diagnostic tool — ie, a videofluoroscopic oropharyngeal swallowing study (also known as a modified barium swallow study) — may be warranted. In this procedure, the radiologist takes moving x-rays of the mouth and throat while the SLP instructs the patient to chew and swallow small amounts of barium-containing foods and liquids of varying consistencies. Compensatory maneuvers, such as a chin-tuck position, also may be trialed to prevent aspiration or other types of swallowing dysfunctions identified during the study.1 The SLP then will devise an individual swallowing plan and recommend any special devices or techniques that may assist in correcting the swallowing problem.

**Dysphagia Management**

**Compensatory techniques.** In addition to good oral hygiene, three types of intervention strategies typically utilized for patients with dysphagia are compensatory, rehabilitative, or a combination. Interventions for dysphagia management in the elderly are traditionally compensatory because they are believed to require less patient effort. The aims of most of these techniques are to reduce bolus size or redirect the path of the bolus to protect the airway, prevent aspiration, and improve bolus clearance. However, it is important to keep in mind that they are all temporary fixes and must be used with every single swallow in order to work. Examples of postural compensatory mechanisms include sitting upright (90° seated angle), head turn toward the hemiparetic side (which closes off that side to bolus entry and facilitates transit through the nonparetic channel), and a simple chin tuck when swallowing. Other compensatory techniques such as having the patient swallow three times or cough to clear the residue before taking the next bite or reduce the rate and amount food and liquids consumed are designed to change swallowing behavior. The following recommendations are suggested interventions and should be communicated to the patient2,5,6:

- Eat slowly and allow ample time for a meal.
- Take small amounts of food or liquid into the mouth using a teaspoon.
- Concentrate on swallowing — eliminate distractions such as television.
- Avoid mixing solid food with liquids in the mouth at the same time.
- Place food on the stronger side of the mouth if there is unilateral weakness.
- Alternate between solids and liquids to wash down residue.
to look, smell, and taste good if it is going to be eaten; attractive plate presentation and the use of aromatic ingredients and strong flavors to enhance the appeal of pureed foods are of utmost importance.^{6} Table 1 describes the food textures outlined in the National Dysphagia Diet.

**Rehabilitative intervention.** Unlike compensatory techniques, the goal of rehabilitative interventions is to improve the underlying ability of the person to swallow faster, stronger, or in a more timely manner.^{7} These exercises require active participation and cooperation on the part of the patient; muscle strength may be regained among older adults. These exercises are aimed at increasing the strength of the tongue, lingual muscles, larynx, and pharynx and include simple isotonic or isometric neck exercises such as head lifts from a supine position.^{8}

Some interventions have an immediate positive effect on swallowing efficiency and safety, as well as improve the patient’s long-term ability to swallow. They may be compensatory when first introduced but eventually become rehabilitative. Examples of these kinds of techniques include the use of effortful swallow maneuvers (eg, Mendelsohn maneuver, effortful swallow, or suprasyrangular swallowing) or the use of increased sensory stimulation (eg, ice, sour taste, or thermal or electrical stimulation).^{9}

**Practice Points**

Patients who are consuming inadequate amounts of foods or fluids due to swallowing problems are at risk for several nutritional problems that will, in turn, impact their ability to heal a wound. It is imperative to identify dysphagia so treatment can be started as soon as possible. Identification, diagnosis, and treatment of this disorder require an interdisciplinary team. With proper food consistency, compensatory strategies, and some compassion, we can help our patients swallow easily and safely and consume all the calories, protein, and fluids they require for wound healing.

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**Table 1. Food textures as recommended by the National Dysphagia Diet**

| Pureed (Dysphagia Level 1) — Foods should be homogenous and cohesive with a pudding-like consistency. No chewing ability is required. No coarse textures, raw fruits or vegetables, or nuts are allowed. Examples include pureed meats without lumps, cooked cereals with a pudding-like consistency, mashed potatoes, well-cooked pasta that has been pureed, and pureed fruits and vegetables without lumps, pulp, or seeds. |
| Mechanically Altered (Dysphagia Level 2) — Foods are moist and soft-textured. Some chewing ability is required. Examples include soft pancakes moistened with syrup, cooked cereals with some texture (eg, oatmeal and moistened dry cereals), soft canned fruits and cooked vegetables, moistened ground or chopped meat, moist meatloaf, and well-cooked baked or boiled potatoes. |
| Dysphagia Advanced (Dysphagia Level 3) — Mostly foods of regular textures except for hard, sticky, or crunchy foods. Examples include all cereals except for coarse dry cereals like shredded wheat, soft fruits and vegetables, tender meats without bones, potatoes, and rice. Hard fruits and vegetables, nuts, and chewy candies should be avoided. |

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**References**


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**Coming next month:**

Iron deficiency