Oropharyngeal Dysphagia in Older Patients

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Abstract

Dysphagia in older adults can have a profound adverse influence nutrition and hydration status, quality of life, morbidity, mortality and healthcare costs in adults. Identification and management of dysphagia in older adults are most effective when implemented by a team, including a nurse, physician, speech-language pathologist, dietitian and occupational therapist. However, each professional's role may vary according to the standards, responsibilities and resources available in local settings.

Keywords

Dysphagia · Malnutrition · Aspiration · Deglutition disorder · Oropharyngeal

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For an explanation of the grouping of chapters in this book, please see Chap. 1: “Overview of Nutrition Care in Geriatrics and Orthogeriatrics”.

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Learning Outcomes

At the end of the chapter, and following further study, the reader will be able to:

- Describe oropharyngeal dysphagia symptoms and identify processes to identify older adults with or at risk of oropharyngeal dysphagia.
- Understand causes of dysphagia and the implications of dysphagia for older adults and the systems that care for them.
- Explain screening, clinical and instrumental assessment of oropharyngeal dysphagia.
- Consider interdisciplinary interventional opportunities for patients with or at risk of dysphagia with reference to local standards, responsibilities and resources.

18.1 Oropharyngeal Dysphagia: Prevalence and Consequences

Swallowing is a rapid, complex physiologic process that requires the precise, sequential coordination of both volitional and reflexive movements of more than 30 nerves and muscles within the oral cavity, pharynx, larynx and oesophagus. Normal oropharyngeal swallowing requires a coordinated voluntary transfer of food from the mouth into the pharynx, followed by rapid transfer of the bolus into the upper oesophagus. Dysphagia is the medical term for difficulty or inability to swallow and is classified as a digestive condition by the International Classification of Diseases (ICD) ICD-10 [1, 2]. Experts of the Dysphagia Working Group recently recognised dysphagia as a “geriatric syndrome”, defined by the difficulty to effectively and safely move the alimentary bolus from the mouth to the oesophagus. Anatomically, dysphagia may arise from an oropharyngeal or oesophageal impairment and from a physiological standpoint either a functional or structural cause [3]. The focus of this chapter is oropharyngeal dysphagia.

Patients experiencing dysphagia may demonstrate one or more signs including but not limited to difficulty sucking, chewing or initiating swallowing and managing saliva, taking medication or protecting the airway coughing. They may report coughing during eating or drinking, food or medication sticking in the throat, voice changes, dyspnoea, nasal regurgitation, unintentional weight loss or a change in eating habits. The complications arising from oropharyngeal dysphagia are dependent on the severity and may range from mild to moderate difficulty to complete inability to swallow [1, 4–6].

Dysphagia is associated with major nutritional and respiratory complications, particularly in older patients, resulting in multiple negative health consequences, most commonly increased risk of malnutrition and dehydration, frailty, asphyxiation, aspiration-related pneumonias and death. Depression, social isolation and poorer health-related quality of life are other established implications [1, 6–11]. Dysphagia is a growing geriatric syndrome of increasing frequency, impacting on morbidity, mortality and costs associated with hospital length of stay [11–13]. In many hospitals, an

overt discrepancy exists between these factors and the associated nutritional and respiratory complications of oropharyngeal dysphagia and the limited availability of both human and material resources available to patients with dysphagia [1, 8].

The prevalence of oropharyngeal dysphagia in older persons is variable across different settings. Studies demonstrate between 30 and 40% in independently living older people, 44% in those admitted to geriatric acute care and 60% of institutionalised older patients are dysphagic [4, 6, 8, 14, 15]. Oropharyngeal dysphagia has been shown to be more prevalent in older adult with reduced mobility, functional capacity or cognitive status, frailty, polypharmacy and multimorbidity [16]. Increasing age is associated with increased risk of oropharyngeal dysphagia which can be attributed to multiple factors including age-related changes in head and neck anatomy, changes in neural and physiologic mechanisms that control swallowing (e.g. loss of muscle mass and function, decreased tissue elasticity, decreased saliva production and cervical spine changes) and increasing disease acquisition that may have dysphagia as a symptom or side effect. These changes can slow deglutition and negatively impact the effective and efficient flow of swallowed materials [8, 10, 16].

18.2 Causes of Oropharyngeal Dysphagia

Commonly reported causes of oropharyngeal dysphagia are diseases of nervous system, neurodegenerative diseases, muscular/neuromuscular diseases and local or structural lesions in head or neck or oesophageal area [17].

Stroke. The incidence of dysphagia after stroke with figures ranges from 23 to 65% [6, 18]. Although up to half of acute stroke patients will have dysphagia, most will have recovered a functional swallow spontaneously by 1 month. Dysphagia after stroke carries a threefold increased mortality risk and a sixfold to sevenfold fold increased risk of aspiration pneumonia. Dysphagia screening should occur for every patient presenting with symptoms of a stroke.

Head and neck cancers. Whilst considering the site of lesion, severity and treatment type, oropharyngeal dysphagia presents as a common consequence in approximately 50% of head and neck cancer patients [8].

Dementia. Oropharyngeal dysphagia is a frequent condition in patients with dementia of various types, including in early stages. It is estimated that up to 45% of patients institutionalised who have dementia will have some degree of dysphagia, with symptoms varying and dependent on the clinical presentation and type of dementia. Patients will often demonstrate a slowing of the swallowing process, which results in increased time taken to complete meals, placing the patient at increased risk of malnutrition and dehydration. Patients may demonstrate poor initiation, distractibility, impulsivity and sensory changes that may result in oral holding, overchewing and texture or temperature aversion. These characteristics together with a change in a patient's ability to self-feed, loss of appetite, food avoidance and wandering can be attributed to increasing cognitive impairment and are risk factors for poor nutritional status, subsequently increasing the susceptibility to pneumonia in this patient population [19, 20].

Parkinson's disease. Oropharyngeal dysphagia is a common symptom in patients with neurological diseases. In particular, in neurodegenerative conditions such as Parkinson's disease and related disorders, the prevalence of dysphagia increases rapidly as the disease progresses [21]. However, the early detection of swallowing problems is not always easy because dysphagia may be asymptomatic, and the self-awareness of patients is poor [8, 21].

Medication. An often-overlooked cause of dysphagia is the patient's medication. Several categories of drugs have been associated with oropharyngeal dysphagia; this is commonly referred to as drug-induced dysphagia. Major mechanisms have been identified as (1) dysphagia as a side effect of the drug, (2) dysphagia as a complication of the drug's therapeutic action and (3) medication-induced oesophageal injury. Several types of drugs have been found to cause dysphagia. Drugs that cause xerostomia (dry mouth) include anticholinergics (e.g. atropine, trihexyphenidyl, ipratropium), angiotensin-converting enzyme (ACE) inhibitors, antiarrhythmics, antihistamines and neuroleptic medications (e.g. clozapine, quetiapine, risperidone). Dysphagia-causing drugs also include gabapentin, valproic acid, diazepam, codeine as well as drugs associated with medication-induced oesophageal injury (e.g. ibuprofen, vitamin C, erythromycin) [10, 22]. For further reading about drug interactions, see Chap. 20.

18.3 Screening and Diagnosis of Oropharyngeal Dysphagia

Screening and assessment of swallowing are different procedures and are usually conducted at different times by different health professionals. Swallowing screening has been previously defined as a minimally invasive evaluation that rapidly examines the following: (1) the likelihood of dysphagia, (2) the requirement for further swallowing assessment, (3) the safety of patient oral intake and (4) the requirement for alternative nutritional support. Whereas a swallowing assessment would usually include a case history (related to swallowing problems), an in-depth examination of oral, pharyngeal and laryngeal anatomy; sensory and motor function and behavioural, cognitive and language abilities; and an oral/feeding trial if appropriate [11, 12].

18.3.1 Screening

Clinical screening for oropharyngeal dysphagia should be quick, low risk and low cost and aim at identifying the highest-risk patients who require further assessment [1]. There are multiple screening tools that have been developed and researched within specific patient population groups. Strong supporting evidence across general geriatric cohorts for any single tool is lacking; which screening tool local teams choose to administer will depend on, for example, disease-specific recommendations (e.g. stroke versus dementia), national or international guidelines and/or local practice policies/procedures and/or protocols.

It is beyond the remit of this chapter to critique or recommend which tools are appropriate to apply. We consequently recommend local teams work with patients to identify and co-design dysphagia screening processes that apply tools that are both valid and feasible to implement in their specific settings and populations. Without being prescriptive, we note that the EAT-10 is a self-reported questionnaire and quick, easy screening method, validated to identify individuals at risk for dysphagia (<https://www.nestlenutrition-institute.org/resources/nutrition-tools/details/swallowing-assessment-tool>) [23]. Similarly, the Yale Swallow Protocol [24] is another evidence-based protocol that identifies aspiration risk that local teams may wish to consider. This tool supports recommendation of specific oral diets without the need for further instrumental evaluation; it is easily administered, reliable and validated for use in a variety of environments, including acute care, rehabilitation and nursing homes [24, 25].

18.3.2 Assessment

The aim of clinical assessment is to evaluate the safety and efficacy of swallowing and detect aspirations at the bedside. Clinical assessment should be performed by specialists and regularly repeated according to progression of the disease.

18.3.3 Oropharyngeal Dysphagia Diagnosis

In many clinical settings, a bedside diagnosis may be informed by a clinician qualified to make a diagnosis using a clinical swallowing examination (CSE), for example, speech-language pathologists or medical officers; there are a variety of different CSE approaches applied across global settings, and again these should be governed by local clinical processes [26–28].

An instrumental examination may be indicated to confirm the diagnosis and/or plan treatment for patients suspected of having dysphagia following clinical observation/examination. Videofluoroscopy swallowing study (VFSS) and fibre-optic endoscopic evaluation of swallowing (FEES) are two types of instrumental assessments used to evaluate the safety and efficacy of deglutition. These methods are considered the “gold standard” for diagnosis of oropharyngeal dysphagia and are useful in determining the effectiveness of compensatory strategies and/or the type of rehabilitation therapy [1, 4, 10, 26].

18.4 Interventions for Oropharyngeal Dysphagia

No single strategy is appropriate for all older adults with oropharyngeal dysphagia. The unified goal is to treat the underlying pathology when possible and manage symptoms effectively while meeting nutritional needs. This can be achieved through interdisciplinary management that considers (1) maintaining adequate nutrition,

hydration and diet choices, (2) dietary modifications and (3) maximising oral hygiene and oral health. Where appropriately trained specialists are available, for example, SLPs or medical staff, compensatory strategies and rehabilitative techniques and manoeuvres should also be considered. The following information is provided for educational purposes; interventions for oropharyngeal dysphagia should be guided by patient population and setting specific guidelines that ideally have been co-designed and endorsed by teams consisting of older adults, speech and language pathologists and medical, nursing and other healthcare professionals.

18.5 Maximising Adequate Nutrition, Hydration and Diet Choices

For patients with or at risk of oropharyngeal dysphagia, it is essential that any required changes are considered both in line with existing evidence and the patient's preferences and wishes. Due to the increased risk of malnutrition and dehydration in older patients with dysphagia, screening for malnutrition and nutritional status (including hydration) should be assessed among all patients with dysphagia [29]. If malnutrition is present, an individualised nutritional program should be developed, balancing the importance of eating, in relation to quality of life, as this will differ between patients. This may be complicated for patients with diagnosed cognitive impairment, who lack capacity for informed healthcare decisions [11].

If the patient's swallowing safety and efficiency cannot reach a level of adequate function or if swallow function does not support nutrition and hydration adequately, the treating team may recommend alternative nutritional and/or fluid support (Chap. 5).

18.6 Dietary Modifications

Texture modification has become one of the most common forms of intervention for dysphagia and is widely considered important for promoting safe and efficient swallowing [11]. The goal of diet modification is to improve the safety and/or ease of oral consumption and therefore maintain safe and adequate oral intake of food and liquids [30]. Modifying the consistency of foods and liquids is a common compensatory strategy utilised for patients with dysphagia [6]. However, health professionals should be cautious that as the diet and liquids are modified, decreased acceptability by the patient may result from the altered taste, texture and appearance. These changes in solid and liquid consistencies may lead to decreased adherence to recommendations and increased risk of malnutrition and/or dehydration [31]. Many studies have highlighted a lower caloric intake resulting from modified diets [11].

A newer system of food and liquid classification has been derived from the International Dysphagia Diet Standardisation Initiative (IDDSI). It is a global standardised method of describing dysphagia diets that ranges from level 0 to level 7

[11]. Whilst these are considerate of recent evidence, again given the contextual diversities globally, we recommend local teams work with patients to establish or review locally applied dietary modification recommendations, definitions, systems and processes.

18.7 Oral Hygiene and Health

Although this is not the focus of this chapter, it is worth noting that particular attention should be given to oral hygiene and oral health for patients with or at risk of dysphagia.

The first deglutition phase—the oral stage of swallowing (chewing, bolus formation and propulsion process)—depends on a good mouth status; poor mouth hygiene, edentulism and improper prosthesis are some of the risk factors for malnutrition among older adults [5]. The physiology of the oral cavity changes with age, and older adults often experience issues such as the loss of teeth, reduced saliva (dry mouth) and a reduction in muscle and connective tissue elasticity. Poor oral hygiene and dentition, lack of teeth and ill-fitting dentures can induce pain and discomfort and are red flags for possible undiagnosed oropharyngeal dysphagia. As a result, eating takes longer, and patients fatigue more quickly and may self-modify their diets to compensate, increasing the risk of malnutrition. Maintaining good oral cares has proved paramount in reducing the occurrences of aspiration-related pneumonia [11].

18.7.1 Swallowing Strategies and Manoeuvres

Changes in body and/or head posture may be recommended as one type of compensatory technique with the aim to reduce aspiration or residue. These changes may impact on the speed and flow direction of a food or liquid bolus, often with the intent of protecting the airway to improve swallow safety.

Similarly, swallow manoeuvres are designed to modify the normal swallow and as a result improve the safety or efficiency of swallow function. Numerous swallow manoeuvres have been recommended to address different physiologic swallowing deficits. While swallow manoeuvres can be used as a short-term compensatory strategy, many have also been used as swallow rehabilitative techniques. Various manoeuvres are aimed at addressing different aspects of the impaired swallow. For example, the supraglottic and super supraglottic swallow techniques both incorporate a voluntary breath hold and related laryngeal closure to protect the airway during swallowing. It is important to note that patients experiencing cognitive impairment may have difficulty implementing swallowing strategies or manoeuvres [11].

Swallowing strategies and/or manoeuvres should always be individually prescribed by an SLP, swallow therapist or appropriately trained medical officer, after a thorough individualised assessment has been completed [6].

Table 18.1 Potential opportunities for interdisciplinary management of dysphagia [4, 30]

• Interdisciplinary screening using locally approved, validated screening tools (e.g. EAT-10, Yale Swallow Protocol or other tools that are feasible and valid for the population/setting)
• Referral for specialist assessment and intervention where appropriate and re-referral where repeat screening or clinical judgement indicates need for review
• Educate and engage patients and caregivers regarding the rationale for dysphagia management strategies, strategies for food and fluid modification and self-monitoring processes for dysphagia, malnutrition and dehydration
• Support and assist mealtimes
• Ensure positioning of patient and swallowing manoeuvres align with locally endorsed safe swallowing recommendations and individualised advice where prescribed
• Wherever possible and appropriate, encourage patients to sit upright or out of bed for meals
• Avoid eating or drinking when drowsy, rushed or fatigued
• Encourage and assist small amounts of food or liquids into the mouth at a time
• Eat slowly with intent to implement control of bolus flow
• Concentrate only on swallowing and eliminate distractions
• Alternate liquids (of appropriate thickness) and solids to clear oral and pharyngeal residue
• Place the food on the stronger side of the mouth if there is unilateral weakness
• Use sauces, condiments and gravies (of appropriate thickness) to facilitate cohesive bolus formation
• Avoid mixing food and liquids in the same mouthful
• Provide appropriate cutlery and utensils

18.7.2 Opportunities for Interdisciplinary Management of Dysphagia

Whilst there is no specific “one-size-fits-all” strategy that is applicable to all older patients with oropharyngeal dysphagia, there are some generic strategies that are often appropriate for interdisciplinary team members to apply to assist with dysphagia identification and management, as shown in Table 18.1 [32]. These are provided for educational purposes; local treating teams should ensure appropriate processes are embedded to support adequate nutritional and fluid intake for older adults with or at risk of dysphagia.

18.7.3 Summary

Oropharyngeal dysphagia adversely influences the nutritional intake, hydration, morbidity, mortality and quality of life in many older adults globally. There is no single management strategy for managing older adults with dysphagia; an interdisciplinary approach is fundamental to define diagnosis and treatment [33]. Locally relevant evidence-based procedures and guidelines must be in place to support interdisciplinary teams to work together with older adults to improve the safety and/or ease of oral consumption and thus maintain safe and adequate oral intake of food and liquids. We also encourage teams to balance management strategies with the need to promote adequate nutritional intake, overall patient health and quality of life, through shared decision-making and informed consent.

Take-Home Points

- Dysphagia is common in older adults across community, inpatient and aged care home settings with associated adverse outcomes.
- There are diverse causes of dysphagia; screening is able to be performed by diverse healthcare providers; however, diagnosis requires specialist consultation.
- There are many opportunities for interdisciplinary healthcare providers to monitor and support nutritional and fluid intake of patients with dysphagia; these should be undertaken in line with locally endorsed evidence-based procedures and processes.

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Suggested Further Reading

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Useful Website. International Dysphagia Diet Standardisation Initiative IDDSI. <https://www.iddsi.org/>

Useful Website. Swallowing screening tool EAT-10 in different languages. <https://www.nestlenutrition-institute.org/resources/nutrition-tools/details/swallowing-assessment-tool>

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