

1 Dysphagia

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By the end of this chapter you will be able to:

- Describe the swallowing process and causes of swallowing difficulties
- List the symptoms commonly associated with dysphagia
- List the conditions most commonly associated with dysphagia
- Identify the roles of different healthcare professionals in managing dysphagia

Introduction

The apparently simple act of swallowing is in fact a highly complex series of neurologically controlled events involving the structures of the oral cavity, pharynx and oesophagus to safely transport food and drink from mouth to stomach. A loose definition of dysphagia is any difficulty which disrupts this process¹. This may be due to changes to the structures or neurological control involved in swallowing. Although difficulties can occur at any stage of the swallowing process, this chapter will focus on disruption to the swallow as material passes through the oral cavity and pharynx (Figure 1.1). The normal swallow and causes and consequences of dysphagia will be outlined. Potential effects of dysphagia on swallowing medication will be described followed by guidance on management of medication for people with dysphagia.

The normal swallow

The normal swallow allows an individual to manage a wide range of food and drink, of varying volumes, textures and consistencies.¹

There are three main phases to the normal swallow which are reliant on both motor activity and sensory feedback:

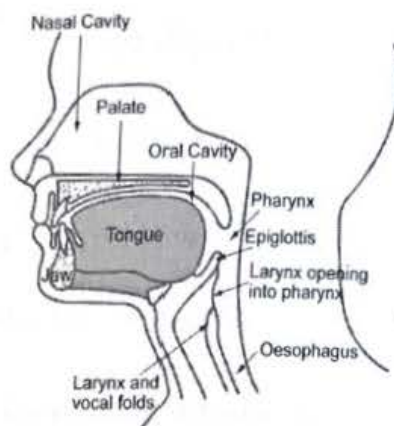


Figure 1.1 Mid Sagittal section of the head and neck

The oral phase – preparation of the bolus

The oral phase involves the preparation of food and drink for safe transit into the pharynx. Material is detected and recognised by its taste, texture and consistency (Figure 1.2). The lips, tongue and soft palate are involved in retaining and controlling food and drink within the oral cavity. The tongue manipulates material to allow for chewing activity. At the same time saliva moistens and lubricates dry materials to allow for smooth transit. Once preparation is complete a bundle of material or bolus is formed and held in the midline by the tongue.

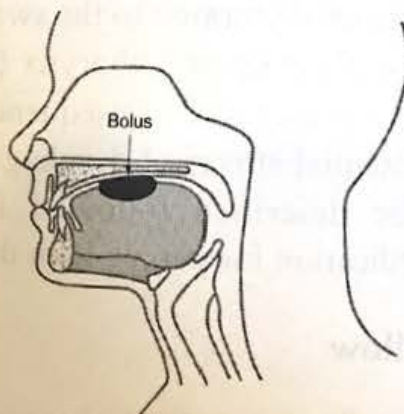


Figure 1.2 Oral phase

At the end of the oral preparatory phase the bolus is propelled towards the pharynx with a backward motion of the tongue.

Pharyngeal phase – airway protection

As the pharynx provides a shared passage for swallowing and respiration the pharyngeal phase provides a mechanism to prevent material entering the airway. This phase (Figure 1.3) is initiated by the backward movement of the tongue and immediate detection of the bolus within the pharynx. The soft palate elevates to prevent material entering the nasal cavity. The main activities during the pharyngeal phase are the cessation of breathing and the closure of the airway. Timing and coordination are crucial. Closure is achieved by drawing together the vocal folds within the larynx. This is accompanied by the upward and forward movement of the larynx. The epiglottis closes over the larynx diverting the bolus towards the oesophagus. The upward movement of the larynx facilitates the opening of the upper oesophageal sphincter. At the same time the pharyngeal musculature exerts pressure on the bolus pushing it into the oesophagus

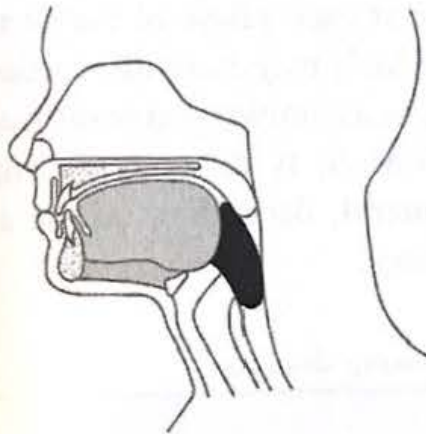


Figure 1.3 Pharyngeal phase

Oesophageal phase

The oesophageal phase describes the transport of the bolus through the oesophagus and consists of muscular contractions,

in a series of peristaltic waves, which actively transport the bolus to the stomach.

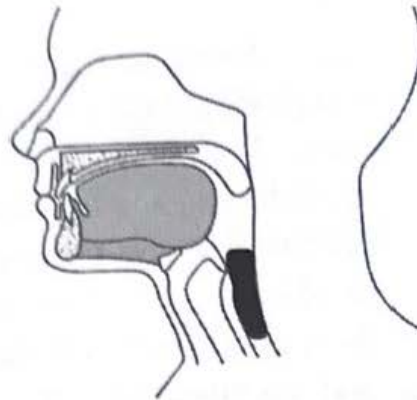


Figure 1.4 Oesophageal phase

Dysphagia

Swallowing is the primary mechanism for protecting the airway. However if timing or coordination fails material may enter the airway resulting in aspiration, i.e. material reaches a level below the vocal cords. Table 1.1 outlines difficulties which can occur at each phase of the swallow. It should be noted that individuals may have difficulties which affect any one of the phases or a combination of difficulties. Neurological control of swallowing is bilateral so impairment may be unilateral or bilateral, depending on the site and nature of neurological damage.

Table 1.1 Swallowing deficits

Oral phase

- Sensory or cognitive disturbance – failure to detect material within the mouth
- Altered muscle tone affecting actions of the jaw, lips, tongue, soft palate disrupting retention and preparation of the bolus – uncontrolled material may spill from the lips or into the pharynx

Pharyngeal phase

- Loss of sensation within the pharynx resulting in absent or delayed initiation of the pharyngeal phase – aspiration prior to the swallow
- Incomplete closure of the vocal folds – aspiration during the swallow
- Incomplete elevation of the larynx resulting in failure to clear all material from the pharynx – aspiration after the swallow

Oesophageal phase

- Absence of peristalsis
- Stricture / obstruction

The normal response to aspiration is a cough. However loss of sensation or poor respiratory status may result in a weak or absent cough, i.e. silent aspiration. Aspiration is a significant cause of chest infections or pneumonia. The signs and symptoms associated with dysphagia are outlined in Table 1.2.

Table 1.2 Signs & symptoms of dysphagia

- History of choking ✖
- Cough before, during or after the swallow ✖
- History of chest infections
- Change in breathing pattern or shortness of breath when eating / drinking ✖
- Wet, bubbly voice quality
- Weight loss
- Prolonged mealtimes
- Refusal to eat / drink
- Regurgitation ✖

Who might be at risk of dysphagia?

Dysphagia is not a disease but a symptom caused by structural or neurological dysfunction. Prevalence varies according to the

population studied, concomitant medical disorders, and the diagnostic instrument used. Prevalence may be greater than the published figures suggest as some patients may not acknowledge their symptoms or dysphagia may be seen as an inevitable consequence of old age.^{2, 3} 70-90% of older people have some degree of swallowing dysfunction⁴ and in 2005-06 24,754 patients were admitted to UK hospitals with a primary diagnosis of dysphagia, accounting for 63,204 bed days.⁵ Table 1.3 outlines the disorders in which dysphagia may occur.

The difficulties resulting from dysphagia may be exacerbated by retained reflexes,⁶ changes associated with aging,² reduced levels of alertness, cognitive decline, poor respiratory status and poor posture. Reduced saliva production resulting in a dry mouth (xerostomia) or excessive saliva may also interfere with the swallowing process.

Table 1.3 Disorders in which dysphagia may occur

Congenital disorders, e.g.

- Cerebral palsy
- Muscular dystrophy
- Syndromes associated with learning difficulties

Acquired neurological conditions, e.g.

- Stroke
- Parkinson's Disease
- Multiple Sclerosis
- Motor Neurone Disease
- Dementia

Head and neck cancers or complications of surgery

Tracheostomy

Side effects of medication for mental health disorders, e.g.

- Benzodiazepines
- Neuroleptics
- Anti-seizure medication