Case 27

A 27-year-old male teacher presented with a 2-year history of intermittent dysphagia for solids, which occurred about once every three meals. There was no regurgitation, bolus obstruction, odynophagia, or chest pain. His weight was stable and there was no history of melaena or haematemesis. He had reflux, which caused intermittent heartburn, but symptoms were controlled with omeprazole. This had not made any difference to the dysphagia.

The only other medical history was childhood asthma. There was a family history of Crohn's disease, but no other family history of gastrointestinal disease.

On examination, he was fit and well, with a body mass index of 25kg/m^2. His hands, skin, and abdomen were normal, with no tremor, normal speech, no goiter, and no abdominal findings.

Investigations showed:

- Barium swallow: there was no structural abnormality in the hypopharynx or oesophagus and no stricture. There was transient hold up of a swallowed marshmallow. The gastro-oesophageal junction opened normally.
- Gastroscopy: oesophagus, stomach and duodenum looked normal. Oesophageal, gastric and duodenal biopsies were taken.

Questions

27a) What is the differential diagnosis?

27b) By examining the oesophageal biopsy (Fig. 27.1 in the central coloured section), what is the diagnosis?

27c) What changes could be present on endoscopy in this condition?

27d) What is the treatment of this condition?

27e) What is the prognosis?

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Answers

27a) **What is the differential diagnosis?**

The differential diagnosis is:

- Eosinophilic oesophagitis
- Peptic stricture from gastro-oesophageal reflux
- Achalasia
- Muscle disorders
  - Muscular dystrophies
  - Hyper or hypothyroidism
  - Myasthenia gravis
- Oesophageal involvement in systemic conditions (e.g. scleroderma)
- Oesophageal spasm.

Intermittent dysphagia in a young adult over many years (particularly with an episode of food impaction), should raise the possibility of **eosinophilic oesophagitis**. This becomes more likely with a personal or family history of allergic disorders. It should always be considered in the differential diagnosis of chronic unexplained dysphagia, but has been recognized only relatively recently. The barium swallow is usually normal, but strictures of varying length and diameter can occur.

Distinguishing eosinophilic oesophagitis from **gastro-oesophageal reflux** disease can be difficult, but the latter only causes food impaction if a mechanical stricture (which should be visible on barium swallow) is present. It is notable that a proton pump inhibitor relieved reflux symptoms in this patient, but did not relieve dysphagia. Dysphagia due to severe oesophagitis without a stricture is not that uncommon, but the sensation is relieved by acid suppression.

Achalasia should be considered, but several features make the diagnosis unlikely. Patients with achalasia tend to have dysphagia for both solids and liquids. Furthermore, chest pain occurs in up to half of patients, and 60–90% describe regurgitating undigested foods during or shortly after a meal. The barium swallow might also be expected to show features of achalasia given the 2-year history. The typical feature of achalasia on barium swallow is the 'bird's beak' appearance of the gastro-oesophageal junction, due to the non-relaxing sphincter, and sometimes associated with a dilated oesophagus. Fluoroscopy during the swallow may reveal decreased peristalsis. At endoscopy, there may be a transient resistance to the passage of the endoscope through the gastro-oesophageal junction

that is recognized by an experienced endoscopist alert to the potential diagnosis.

Muscular disorders must not be overlooked, but often are at first presentation. There are three categories to consider. The first is muscular dystrophy: two uncommon forms of muscular dystrophy involve the striated muscles of the pharyngo-oesophageal region. **Dystrophia** myotonica is a familial disease characterized by myopathic facies, myotonia, swan neck, muscle wasting, frontal baldness, testicular atrophy, and cataracts. **Oculopharyngeal dystrophy** is a syndrome that presents later in life with ptosis and dysphagia, with a dominant pattern of inheritance. The second category is **hyperthyroidism** or **hypothyroidism**, which can also affect striated musculature. The third muscle disorder is **myasthenia gravis**, which is a disorder of the motor end plate, affecting the striated oesophageal musculature with clinical manifestations that resemble the myopathies. The characteristic feature is fatigue during repeated effort, with successive attempts to swallow (pharyngo-oesophageal transfer) causing more symptoms as the meal progresses.

Systemic conditions such as scleroderma, polymyositis, or mixed connective tissue disease can involve the oesophagus. Other findings such as sclerodactyly, telangiectases or weakness, are generally detected in conjunction with symptoms of dysphagia.

Oesophageal spasm generally presents with retrosternal chest pain, with episodes lasting for minutes or hours. Intermittent dysphagia occurs in 30–60% of patients. A barium swallow can reveal a 'corkscrew

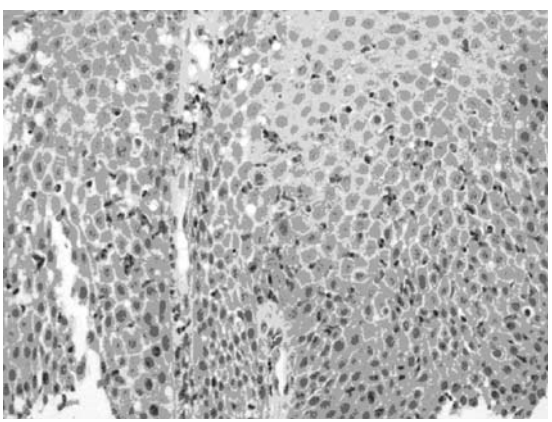

Fig. 27.1 (see colour plate 12) Mid-oesophageal biopsy from a patient with dysphagia and a normal oesophagus at endoscopy.

oesophagus', due to dysfunctional circular muscle contractions that in extreme situations trap barium between powerfully contracted segments. The endoscopic appearance is normal.

27b) **By examining the oesophageal biopsy (Fig. 27.1 in the central colour section) what is the diagnosis?**

The diagnosis is **eosinophilic oesophagitis**. The diagnosis hinges on histopathological evidence of eosinophils infiltrating the oesophageal mucosa. It is well recognized that other diseases are associated with eosinophilic infiltration of the oesophagus, including gastro-oesophageal reflux, but with a lesser degree of eosinophilic infiltrate. For diagnosis of eosinophilic oesophagitis, the eosinophilic infiltration in the squamous epithelium should exceed 20 eosinophils/high power field at x400 magnification. Mid-oesophageal biopsies should be the standard of care for patients with dysphagia and a normal endoscopy.

27c) **What changes could be present on endoscopy in this condition?**

Typical endoscopic findings of eosinophilic oesophagitis include mucosal longitudinal linear furrows, a corrugated appearance or plaque-like exudates, friability of the oesophageal mucosa ('crêpe-paper' mucosa), and strictures of variable length. Most patients appear to have a normal oesophagus at endoscopy, so the endoscopist should be encouraged to take biopsies.

27d) **What is the treatment?**

Corticosteroids, either topical or systemic, are generally effective. Initial treatment should be swallowed fluticasone (220μg dose x four puffs, swallowed with a minimal amount of water twice daily, instructing patients not to eat or drink for 2 hours after each dose). Continue therapy for 6 weeks, if there is a response. Recurrent symptoms are best treated with the same dose, but for a longer period. If there is no initial response, systemic corticosteroids (prednisolone 40mg/day, tapered over 6 weeks) should be considered.

Elimination diets: although eosinophilic oesophagitis appears likely to be an allergic disorder, identifying the triggering allergens (food or environmental) is labour intensive and unproductive. Patients may have multiple allergies, making it difficult to comply with allergen-avoidance or food restriction. Paediatric patients are often treated with an elimination or liquid diet and improve, but they comply with food restriction better than adults.

Oesophageal dilatation: patients with eosinophilic oesophagitis are at increased risk for mucosal tears and perforation after oesophageal dilatation. Medical treatment of eosinophilic oesophagitis decreases the risk of strictures. Dilatation should be carried out only in patients who fail medical therapy and have severe dysphagia.

New therapies such as anti-IL5 monoclonal antibody therapy are evolving.

27e) **What is the prognosis of this condition?**

Untreated, patients with eosinophilic oesophagitis may develop strictures, with weight loss, food impaction, or even perforation. After patients are successfully treated, it is likely that 25–40% will have relapse of their symptoms. The long-term outcome for patients with eosinophilic oesophagitis who have been treated and the proportion that require multiple courses of treatment is unknown. There have been no cases of oesophageal malignancy observed in association with eosinophilic oesophagitis.

Further reading

Attwood SE, Lamb CA (2008). Eosinophilic oesophagitis and other non-reflux inflammatory conditions of the oesophagus: diagnostic imaging and management. *Best Pract Res Gastro*; **22**: 639–60.

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Ferguson DD, Foxx-Orenstein AE (2007). Eosinophilic esophagitis: an update. *Dis esophagus*; **20**: 2–8.