Pharyngeal pouch

Pharyngeal pouch

A pharyngeal pouch is a protrusion of mucosa though Killian’s dehiscence, a weak area of the posterior pharyngeal wall between the oblique fibres of the thyropharyngeus and the transverse fibres of cricopharyngeus at the lower end of the inferior constrictor muscle (Figure 52.32). These fibres, along with the circular fibres of the upper oesophagus, form the physiological upper oesophageal sphincter mechanism. Videofluoroscopic and manometric studies have been unable to elucidate the cause of the pouch. Many patients with pharyngeal pouches have been demonstrated to have normal relaxation of the upper oesophageal sphincter mechanism in relation to swallowing, but others have been shown to have incomplete pharyngeal relaxation, early cricopharyngeal contraction and abnormalities of the pharyngeal contraction wave. When enlarged, the pouch almost invariably deviates to the left side of the neck. Clinical features Patients with this condition are commonly more than 60 years of age and it is more common in men than in women. As the diverticulum enlarges, patients may experience regurgitation of undigested food, sometimes hours after a meal, particularly if they are bending down or turning over in bed at night. They sometimes wake at night with a feeling of tightness in the throat and a fit of coughing. Occasionally , they may pres ent with recurrent, unexplained chest infections as a result of aspiration of the contents of the pouch. As the pouch increases in size, patients may notice gurgling noises from the neck on swallowing and the pouch may become large enough to form a visible swelling in the neck. Dysphagia may also be a presenting symptom. Radiological examination A thin emulsion of barium is given to the patient as a barium swallow (Figure 52.33) or ideally as part of a videofluoroscopic swallowing study . Care should be exercised in patients who cough on swallowing, indicating they may have aspiration. A small volume of barium is su ffi cient to outline the pharynx, pouch and upper oesophagus. The videofluoroscopic study Gustav Killian , 1860–1921, Professor of Laryngology at Freiburg, and later at Berlin, Germany . gives additional information about the pharyngeal contraction waves and the performance of the upper oesophageal sphincter. Treatment Surgery is indicated when the pouch is associated with - progressive symptoms and particularly when a prominent crico pharyngeal bar of muscle is associated with abnormality of the upper oesophageal sphincter mechanism and causes considerable dysphagia. In elderly patients, a decision to oper - ate may be influenced by their general condition. However, surgical intervention is mandated in all but the most poorly patients as, in most cases, it is the pouch that is contributing significantly to the underlying debilitation. Of particular importance is the risk of recurr ent pneumonia from aspiration and overspill of pouch contents, as well as increasing dysphagia as the pouch opening becomes larger than the oesophageal opening and the enlarged pouch exerts extramural pressure on the oesophagus. Accordingly , preoperative chest physiotherapy and attention to the respiratory , cardiovascular and nutritional aspects of the patient are important.

Figure 52.32 A pharyngeal pouch. Figure 52.33 Pharyngeal pouch on barium swallow.

The surgical technique typically used is endoscopic sta pling of the diverticular wall. A double-bladed rigid endoscope (diverticuloscope) is passed, with one blade in the diverticulum and one blade positioned in the oesophagus (Figure 52.34 Opening of the bivalve scope reveals the pathognomonic ‘bar’ formed by the cricophar yngeus muscle and overlying mucosa, which forms the boundary between the posterior wall of the oesophagus and the anterior wall of the pouch. At this stage the pouch should be emptied of food content and the mucosa should be inspected for the rare occurrence of carcinoma in the pouch. An endoscopic linear stapler is then introduced to sit astride the ‘bar’. One jaw of the stapler is placed in the oesophagus, the other in the pouch. The stapler is fired, divid ing the wall separating the two. The process should be repeated until the bottom of the pouch is reached. This has the e ff ect of opening the pouch, incor porating it as part of the oesophageal wall and dividing the cricopharyngeus muscle. If the patient is symptom free after the procedure, they may start graded oral intake and be discharged early . Division of the ‘bar’ using a carbon dioxide laser, as an alternative to stapling, is gaining popularity in some centres. Flexible endoscopic division of the cricopharyngeal bar is a new technique popularised over the last decade, with equally good results, and can be used in patients who have poor access with rigid endoscopes. In instances where endoscopic access is di ffi cult or for very large pouches, an open excision of the pouch becomes neces sary . In the classic external operation, the opening to the pouch is first identified using a pharyngoscope and a nasogastric tube placed into the oesophageal lumen f or postoperative nutrition. This initial endoscopy is often di ffi cult because the nor oesophageal opening is small compared with the lumen of the pouch, but it may be better visualised using a Dohlman’s rigid endoscope. The pouch may be packed with ribbon gauze to further aid identification of its neck. Gösta Dohlman , 1890–1983, Swedish physician and professor. Henry Stanley Plummer , 1874–1937, physician, The Mayo Clinic, Rochester, MN, USA, described this syndrome in 1912. Porter Paisley Vinson , 1890–1959, physician, The Mayo Clinic, Rochester, MN, who later practised in Richmond, V A, USA. Donald Rose Paterson , 1863–1939, surgeon, The Ear, Nose and Throat Department, The Royal Infirmary , Cardi ff , UK. Adam Brown Kelly , 1865–1941, surgeon, The Ear, Nose and Throat Department, The Royal Victoria Infirmary , Glasgow , UK. Vinson, Paterson and Kelly all described this syndrome independently in 1919. sternocleidomastoid muscle, or a transverse crease incision, is used and the muscle and carotid sheath are retracted laterally and the trachea and larynx medially . The pouc h is found medi - ally behind the lower pharynx and is carefully isolated and dissected back to its origin at Killian’s dehiscence. It is then excised and the pharynx closed in two layers or , if it is small, the pouch may be invaginated into the pharyngeal lumen before closing the muscle layers. Care must be taken to protect the recurrent laryngeal nerve during the procedure. In all cases, a myotomy dividing the fibres of the cricopharyngeus muscle and the upper oesophageal circular muscle fibres must be per - formed. The wound is usually closed with drainage and the patient fed through a nasogastric tube for 3–7 days. A water- based swallow test is performed on day 5 to ascertain that there is no leak prior to commencing oral feeds. The av erage operating time with an endoscopic proce - dure is 20–30 minutes compared with 60–90 minutes with an external procedure. Inpatient stay is also decreased for pa tients - undergoing an endoscopic procedure. The endoscopic tech - nique is associated with a high symptomatic success rate and a low morbidity , which is particularly important in the elderly .). Complications The classic operation has been associated with wound infec - tion, mediastinitis, pharyngeal fistula formation, recurrent laryngeal nerve palsy and stenosis of the upper oesophagus. Endoscopic division is associated with the same risks but at much lower rates. The recurrence rates between the two proce - dures appears to be equal; longer term follow-up will establish this. Endoscopic stapling will also allow for safe reoperation if -

necessary . It must be noted that contrast swallows will demon - strate the pouch in patients who have under gone stapling and are an inappropriate modality to evaluate recurrences.

Oesophagus Pouch Figure 52.34 Endoscopic view of a pharyngeal pouch.

Pharyngeal pouch

A pharyngeal pouch is a protrusion of mucosa though Killian’s dehiscence, a weak area of the posterior pharyngeal wall between the oblique fibres of the thyropharyngeus and the transverse fibres of cricopharyngeus at the lower end of the inferior constrictor muscle (Figure 52.32). These fibres, along with the circular fibres of the upper oesophagus, form the physiological upper oesophageal sphincter mechanism. Videofluoroscopic and manometric studies have been unable to elucidate the cause of the pouch. Many patients with pharyngeal pouches have been demonstrated to have normal relaxation of the upper oesophageal sphincter mechanism in relation to swallowing, but others have been shown to have incomplete pharyngeal relaxation, early cricopharyngeal contraction and abnormalities of the pharyngeal contraction wave. When enlarged, the pouch almost invariably deviates to the left side of the neck. Clinical features Patients with this condition are commonly more than 60 years of age and it is more common in men than in women. As the diverticulum enlarges, patients may experience regurgitation of undigested food, sometimes hours after a meal, particularly if they are bending down or turning over in bed at night. They sometimes wake at night with a feeling of tightness in the throat and a fit of coughing. Occasionally , they may pres ent with recurrent, unexplained chest infections as a result of aspiration of the contents of the pouch. As the pouch increases in size, patients may notice gurgling noises from the neck on swallowing and the pouch may become large enough to form a visible swelling in the neck. Dysphagia may also be a presenting symptom. Radiological examination A thin emulsion of barium is given to the patient as a barium swallow (Figure 52.33) or ideally as part of a videofluoroscopic swallowing study . Care should be exercised in patients who cough on swallowing, indicating they may have aspiration. A small volume of barium is su ffi cient to outline the pharynx, pouch and upper oesophagus. The videofluoroscopic study Gustav Killian , 1860–1921, Professor of Laryngology at Freiburg, and later at Berlin, Germany . gives additional information about the pharyngeal contraction waves and the performance of the upper oesophageal sphincter. Treatment Surgery is indicated when the pouch is associated with - progressive symptoms and particularly when a prominent crico pharyngeal bar of muscle is associated with abnormality of the upper oesophageal sphincter mechanism and causes considerable dysphagia. In elderly patients, a decision to oper - ate may be influenced by their general condition. However, surgical intervention is mandated in all but the most poorly patients as, in most cases, it is the pouch that is contributing significantly to the underlying debilitation. Of particular importance is the risk of recurr ent pneumonia from aspiration and overspill of pouch contents, as well as increasing dysphagia as the pouch opening becomes larger than the oesophageal opening and the enlarged pouch exerts extramural pressure on the oesophagus. Accordingly , preoperative chest physiotherapy and attention to the respiratory , cardiovascular and nutritional aspects of the patient are important.

Figure 52.32 A pharyngeal pouch. Figure 52.33 Pharyngeal pouch on barium swallow.

The surgical technique typically used is endoscopic sta pling of the diverticular wall. A double-bladed rigid endoscope (diverticuloscope) is passed, with one blade in the diverticulum and one

blade positioned in the oesophagus (Figure 52.34 Opening of the bivalve scope reveals the pathognomonic ‘bar’ formed by the cricophar yngeus muscle and overlying mucosa, which forms the boundary between the posterior wall of the oesophagus and the anterior wall of the pouch. At this stage the pouch should be emptied of food content and the mucosa should be inspected for the rare occurrence of carcinoma in the pouch. An endoscopic linear stapler is then introduced to sit astride the ‘bar’. One jaw of the stapler is placed in the oesophagus, the other in the pouch. The stapler is fired, divid ing the wall separating the two. The process should be repeated until the bottom of the pouch is reached. This has the e ff ect of opening the pouch, incor porating it as part of the oesophageal wall and dividing the cricopharyngeus muscle. If the patient is symptom free after the procedure, they may start graded oral intake and be discharged early . Division of the ‘bar’ using a carbon dioxide laser, as an alternative to stapling, is gaining popularity in some centres. Flexible endoscopic division of the cricopharyngeal bar is a new technique popularised over the last decade, with equally good results, and can be used in patients who have poor access with rigid endoscopes. In instances where endoscopic access is di ffi cult or for very large pouches, an open excision of the pouch becomes neces sary . In the classic external operation, the opening to the pouch is first identified using a pharyngoscope and a nasogastric tube placed into the oesophageal lumen f or postoperative nutrition. This initial endoscopy is often di ffi cult because the nor oesophageal opening is small compared with the lumen of the pouch, but it may be better visualised using a Dohlman’s rigid endoscope. The pouch may be packed with ribbon gauze to further aid identification of its neck. Gösta Dohlman , 1890–1983, Swedish physician and professor. Henry Stanley Plummer , 1874–1937, physician, The Mayo Clinic, Rochester, MN, USA, described this syndrome in 1912. Porter Paisley Vinson , 1890–1959, physician, The Mayo Clinic, Rochester, MN, who later practised in Richmond, V A, USA. Donald Rose Paterson , 1863–1939, surgeon, The Ear, Nose and Throat Department, The Royal Infirmary , Cardi ff , UK. Adam Brown Kelly , 1865–1941, surgeon, The Ear, Nose and Throat Department, The Royal Victoria Infirmary , Glasgow , UK. Vinson, Paterson and Kelly all described this syndrome independently in 1919. sternocleidomastoid muscle, or a transverse crease incision, is used and the muscle and carotid sheath are retracted laterally and the trachea and larynx medially . The pouc h is found medi - ally behind the lower pharynx and is carefully isolated and dissected back to its origin at Killian’s dehiscence. It is then excised and the pharynx closed in two layers or , if it is small, the pouch may be invaginated into the pharyngeal lumen before closing the muscle layers. Care must be taken to protect the recurrent laryngeal nerve during the procedure. In all cases, a myotomy dividing the fibres of the cricopharyngeus muscle and the upper oesophageal circular muscle fibres must be per - formed. The wound is usually closed with drainage and the patient fed through a nasogastric tube for 3–7 days. A water- based swallow test is performed on day 5 to ascertain that there is no leak prior to commencing oral feeds. The av erage operating time with an endoscopic proce - dure is 20–30 minutes compared with 60–90 minutes with an external procedure. Inpatient stay is also decreased for pa tients - undergoing an endoscopic procedure. The endoscopic tech - nique is associated with a high symptomatic success rate and a low morbidity , which is particularly important in the elderly .). Complications The classic operation has been associated with wound infec - tion, mediastinitis, pharyngeal fistula formation, recurrent laryngeal nerve palsy and stenosis of the upper oesophagus. Endoscopic division is associated with the same risks but at much lower rates. The recurrence rates between the two proce - dures appears to be equal; longer term follow-up will establish this. Endoscopic stapling will also allow for safe reoperation if - necessary . It must be noted that contrast swallows will demon - strate the pouch in patients who have under gone stapling and are an inappropriate modality to evaluate recurrences.

Oesophagus Pouch Figure 52.34 Endoscopic view of a pharyngeal pouch.

Revision #1
Created 2025-12-31 15:20:02 UTC by Omar Ayman
Updated 2025-12-31 15:20:02 UTC by Omar Ayman