

Endosonography

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Endoscopic ultrasonography (EUS) relies on a high-frequency (5–30 MHz) transducer to provide highly detailed images of the layers of the oesophageal wall and mediastinal structures close to the oesophagus. There are two types of EUS: radial echoendoscope, which has a rotating transducer that creates a circular image with the endoscope in the centre, and linear echoendoscope, which produces a sectoral image in the line of the endoscope. Mini-ultrasound probes that are around 2.0–2.9 mm in diameter can be inserted through the biopsy channel of an ordinary endoscope to give a simple radial diagnostic assessment within a narrowed lumen. This is useful for obstructive tumour. The different layers of the oesophageal wall are characterised by its alternating echogenicity (Figure 66.8). Different structures can be identified adjacent to the oesophagus and used as landmarks, such as the aorta, the azygos vein and the spine. EUS can also provide a Doppler signal to differentiate index lesions from genuine vascular structures or abnormality before attempting biopsy . Biopsy of submucosal oesophageal lesions or mediastinal masses such as lymph nodes can be performed with linear echoendoscopes for histological diagnosis and staging.

Figure 66.7 Endoscopic pictures of the oesophagus. (a) High-grade dysplasia of the oesophagus stained by Lugol's iodine solution. The unstained area is the abnormal area. (b) Early squamous cell cancer examined using narrow-band imaging. Abnormal intrapapillary capillary loops are seen. (c) Barrett's oesophagus stained by acetic acid (black arrows). Top of gastric fold (green arrows).

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