

Endoluminal functional lumen imaging planimetry

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Endoluminal functional lumen imaging planimetry (FLIP) is a volume-controlled distension balloon device. It utilises impedance planimetry to measure the cross-sectional areas along the length of the balloon, and one pressure sensor measures the intra-balloon pressure. When placed inside the oesophagus spanning across the LOS, it gives a real-time assessment of LOS distensibility (cross-sectional area divided by intra-bag pressure) and oesophageal contractility in response to balloon distension. The device is mostly still investigational but is expected to gain wider clinical use. It can be used to guide the intraoperative end point for completeness of myotomy for achalasia (change in diameter and distensibility of the LOS) or in screening oesophageal function to assess the need for formal HRM (Figure 66.10).

200.0 UOS 180 Proximal 160 oesophagus 140 CFV tangent 120 100 80 60 DL 50 40 30 20 LOS relaxation 10 0 -10.0 Figure 66.9 High-resolution manometry picture of a typical swallow. The break at the upper oesophageal sphincter (UOS) signifies the beginning of a swallow. The oesophageal body contractility is represented by the distal contractile integral (DCI), calculated by multiplying the pressure (mmHg) and time (seconds) along the whole length (cm) of the oesophageal body. There is a reflex relaxation of the lower oesophageal sphincter (LOS) upon each swallow. The time between the start of a swallow to the contractile deceleration point (CDP) is the distal latency (DL). CFV, contractile front velocity; OGJ, oesophagogastric junction; PIP, pressure inversion point.

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