Gastro-oesophageal reflux and hiatus hernia—endoscopy

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Summary

The endoscopic diagnosis of hiatal hernia (sliding type) relies on direct and indirect criteria during the oesophagoscopic or gastroscopic approach. A wide separation between the anatomic and mucosal oesophago-gastric junction, the presence of a so-called Schatzki-ring, a wandering junction with sliding gastric mucosal folds during inspiration and two ring-like structures are important. Whereas radiology seems to be superior to endoscopy in the diagnosis of asymptomatic hiatus hernia, oesophagoscopy may reveal sequelae of reflux like oesophagitis, erosions, ulcers and strictures. Peptic oesophagitis is found in about 10% to cause upper gastrointestinal haemorrhage.

THE incidence of hiatal hernia varies between 1 and 70% in various studies depending on the enthusiasm of the examiner and the technique of provocation. Although certain endoscopic criteria of hiatus hernia have been established, radiology seems the diagnostic procedure of choice to demonstrate the presence and size of a hiatus hernia. From the endoscopic point of view it is often difficult to differentiate between achalasia, cardiac sphincter insufficiency and a small hiatus hernia; the identification also varies with the technique applied where the oesophagoscopic inspection is usually more reliable (Roesch and Ottenjann, 1969).

The type of the instrument used may also be of importance (Trujillo, Slaughter and Boyce, 1968). The squamocolumnar junction varies its location frequently forming an indented line which often lies within the thorax, 2 or 3 cm proximal to the anatomical union. A reflux oesophagitis may mask this zig-zag line; Palmer's (1967) criteria for the oesophagoscopic diagnosis of sliding type hiatal hernia—the finding of the oesophagogastric mucosal junction above the diaphragm at 40 cm or less from the incisors, is therefore unreliable. The same is true for the presence of gastro-oesophageal reflux, a phenomenon which is only dependent upon the competence of the gastro-oesophagic sphincter (Dagradi, 1969). Seifert and Kawai (1973) suggest the following direct and indirect criteria for the oesophagoscopic examination with prograde optics:

(A) Direct signs

- (1) Two wide-open ring-like structures (diaphragmatic hiatus and functional sphincter) with a dilated bell-shaped segment in between;
- (2) oesophagogastric junction within the dilated segment;
- (3) location of the squamo-columnar union above the diaphragm;
- (4) wandering junction during inspiration with sliding gastric mucosal folds.

(B) Indirect signs

- (1) Shortening of the distance between incisors and the oesophagogastric junction (less than 38–40 cm);
- (2) free reflux of gastric contents into the oesophagus;
- (3) presence of oesophagitis.

Ortega (1972) added a new criterion: if the separation between the anatomic (cardial lunule) and mucosal union is more than 3 cm and if the cardiac lunule shows undulated borders, the diagnosis of hiatal hernia can be made with great precision. The oesophagogastric mucosal junction can easily be identified *in vivo* by staining with Lugol's solution (Nothmann, Wright and Schuster, 1972). Since the so-called Schatzki-ring is always associated with a hiatus hernia, endoscopic visualization of this structure may be of additional help in the diagnosis of hiatus hernia (Figs. 1 and 2).

The retrograde inspection of the cardiac region after inversion of the tip of the endoscope offers some additional criteria for the diagnosis of hiatus hernia. In small hernias the cardiac ring does not fit snugly around the instrument, in larger hernias two ring-like structures and the mucosal boundary may be seen from the stomach. The demonstration of sliding gastric mucosal folds during deep inspiration is a very valuable sign of hiatus hernia during gastroscopy. The diagnostic accuracy of the retrograde examination depends partially on the amount of air insufflated. Since patients with a hiatal hernia often find it difficult to avoid belching, a combined prograde and retrograde examination of the oesophago-cardiac region is advisable.

Reflux oesophagitis is found endoscopically in

FIG. 1. Schatzki's ring in a 46-year-old patient with asymptomatic hiatus hernia.

FIG. 2. Endoscopic aspect of Schatzki's ring.

FIG. 3. Moniliae in the biopsy specimen of membranous oesophagitis.

about 50% of patients with a large hiatal hernia (Seifert and Kawai, 1973). Comparative studies using suction biopsy of the terminal oesophagus in patients with and without heartburn showed a poor correlation between symptoms and histological inflammatory infiltration (Zeus, 1970). According to Gaillard (1956) mild oesophagitis without mucosal defect or stenosis is rarely recognized endoscopically. Friability, granularity and ulceration of the oesophageal mucosa are signs of macroscopically recognizable oesophagitis, which is usually more pronounced in the distal segment. Although forceps biopsy may be difficult, often rendering only superficial epithelial layers, an attempt should be made especially in membranous oesophagitis to rule out moniliae (Fig. 3). At the border zone between columnar and squamous epithelium polypoid changes may occasionally be seen in extensive oesophagitis, which could lead to the false diagnosis of carcinoma. Deep therapy-resistant ulcers are also located in this border zone (Barrett-ulcer).

Peptic strictures may be the sequelae of chronic oesophagitis; the oesophagoscopy differentiation from a malignant stenosis may be impossible when the instrument cannot be passed beyond the stenosis. When distal to a mid-oesophageal stricture columnar epithelium can be demonstrated by biopsy or (rarely) macroscopically (the columnar epithelium is more prominent, redder, slightly granular and occasionally almost villous), the diagnosis of a columnar epithelium-lined oesophagus is very likely and a carcinoma excluded (Trier, 1970).

Oesophagitis is a relatively common cause of

upper gastrointestinal haemorrhage accounting for about 10% of all bleeding sources in urgent endoscopy; asymptomatic hiatus hernia in our experience never bleeds, the inflammatory changes in reflux oesophagitis end abruptly at the squamocolumnar union.

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