**QUESTION 6**
The presence of which one of the following histological findings in a biopsy of the distal oesophagus is most important for a diagnosis of Barrett’s oesophagus?

A. Specialised intestinal metaplasia.
B. Chronic inflammation.
C. Dysplasia.
D. Helicobacter infection in the mucosa.
E. Eosinophils in the submucosa.

- The metaplasia of esophageal squamous epithelium to columnar epithelium (Barrett’s esophagus) is a complication of severe reflux esophagitis, and it is a risk factor for esophageal adenocarcinoma.
- Metaplastic columnar epithelium develops during healing of erosive esophagitis with continued acid reflux because columnar epithelium is more resistant to acid-pepsin damage than is squamous epithelium.
- The metaplastic epithelium is a mosaic of different epithelial types including goblet cells and columnar cells that have features of both secretory and absorptive cells (incomplete or type III metaplasia).
- **Barrett’s esophagus** is arbitrarily divided into long-segment (>2–3 cm) or short-segment (<2–3 cm) groups; long-segment disease is present in 0.5% of the population and short-segment disease may occur in up to 15%.
- Barrett's epithelium progresses through a dysplastic stage before developing into adenocarcinoma. The rate of cancer development is 0.5% per year; those with long-segment disease have a risk of developing esophageal cancer that is 30 to 125 times the risk of the general population.
- **Barrett’s esophagus** can also lead to chronic peptic ulcer of the esophagus with high (midesophageal) and long strictures.
- Given the natural history, erosive esophagitis should be aggressively treated. The prevalence of intestinal metaplasia is estimated at 4 to 10% of patients with significant heartburn. **Barrett’s esophagus** is more common in men, particularly white men, and prevalence increases with age. A one-time esophagoscopy is recommended in patients with persistent GERD symptoms at age 50 to identify patients with Barrett’s esophagus. Established metaplasia does not regress with treatment; thus, acid suppression and fundoplication are indicated only when active esophagitis is also present.
- The need and frequency of surveillance endoscopies in patients with established Barrett’s esophagus are debated. The risk of developing esophageal adenocarcinoma is related to the length of involved esophageal mucosa. People with short segments of Barrett’s esophagus (distal 2 to 3 cm) account for up to 25% of unselected patients undergoing endoscopy with or without GERD symptoms and appear to be at low risk. They are not routinely surveyed. However, those with long-segment Barrett’s esophagus are advised to have endoscopic surveillance at 1-year intervals for 2 years and then every 2 to 3 years. The frequency is increased if dysplasia is detected independent of the length of the metaplasia. Optical methods of recognizing dysplasia during the endoscopy (laser-induced fluorescence spectroscopy, optical coherence tomography) are being developed. Once high-grade dysplasia is detected, treatment of choice is esophagectomy of the Barrett's segment. Photodynamic laser or thermocoagulative mucosal ablation and endoscopic mucosal resection are being evaluated as alternatives.

**DIAGNOSTIC CRITERIA** — Endoscopic examination generally is required to diagnose Barrett’s esophagus. Two criteria must be fulfilled:

- The endoscopist must document that columnar epithelium lines the distal esophagus.
- Histologic examination of biopsy specimens from that columnar epithelium must reveal specialized intestinal metaplasia.

**PATHOLOGY** — Traditionally, three types of columnar epithelia have been described in Barrett’s esophagus:

- Cardiac epithelium, which has a foveolar (pitted) surface and glands that are lined almost exclusively by mucus-secreting cells; these cells resemble those in the gastric cardia.
- Gastric fundic-type epithelium which has a foveolar surface lined by mucus-secreting cells, and a deeper glandular layer that contains chief and parietal cells; these cells resemble those in the gastric fundus.
- Specialized intestinal metaplasia (also called specialized columnar epithelium), which has intestinal-type crypts lined by mucus-secreting columnar cells and goblet cells.
Biopsy specimen of a patient with Barrett's esophagus shows intestinalized columnar epithelium with goblet cells.