2 BARRETT'S ESOPHAGUS AND ESOPHAGEAL NEOPLASMS

Many biopsies from the esophagus are taken to address Barrett's esophagus or other columnar epithelium found in the esophagus. The risk factors for Barrett's esophagus are chronic gastroesophageal reflux (more than 5 years), age over 50 years, male gender, smoking, central obesity and Caucasian race. Alcohol use is not a significant factor and some data suggest a protective effect for wine drinking (1). Bottoms up!

Many of the issues surround the source of the biopsy (proximal stomach versus tubular esophagus). There are many articles concerning special stains to address these issues but a good hematoxylin and eosin (H&E) stain is all you need once you recognize the findings (2). Knowing the endoscopic appearance is important but recording precisely which epithelial types are encountered is the main issue. There are a number of types of mucosa that can be encountered: 1) oxyntic mucosa (fig. 2-1); 2) cardiac mucosa (fig. 2-2); 3) pancreatic heterotopia/metaplasia (fig. 2-3); 4) multilayered epithelium (figs. 2-4, 2-5) (3); 5) squamous epithelium; and 6) esophageal ducts (see chapter 1, fig. 1-3).

Finding either multilayered epithelium or ducts on a biopsy confirms that a sample is from the esophagus rather than the stomach.

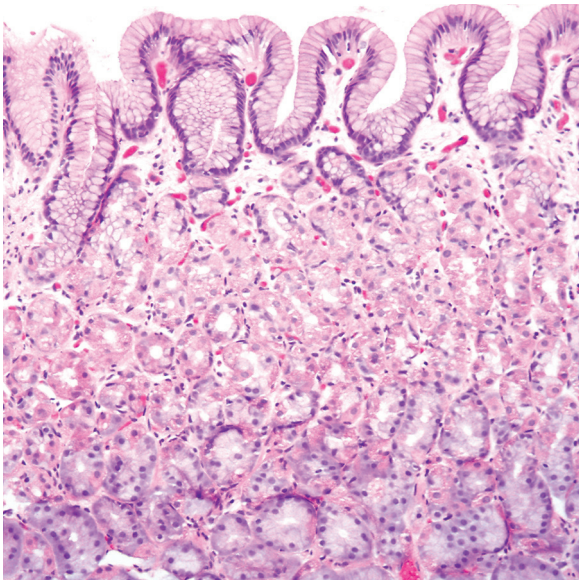

Figure 2-1

OXYNTIC MUCOSA

This is gastric type mucosa of the type found in the gastric body and fundus. The gastric pits are convoluted tubules that connect to the surface such that a two dimensional section shows crowded glands lined by parietal cells (the pink ones in the center of the field). The deep portion of the mucosa contains bluish chief cells. The surface foveolar cells each have an apical mucin cap.

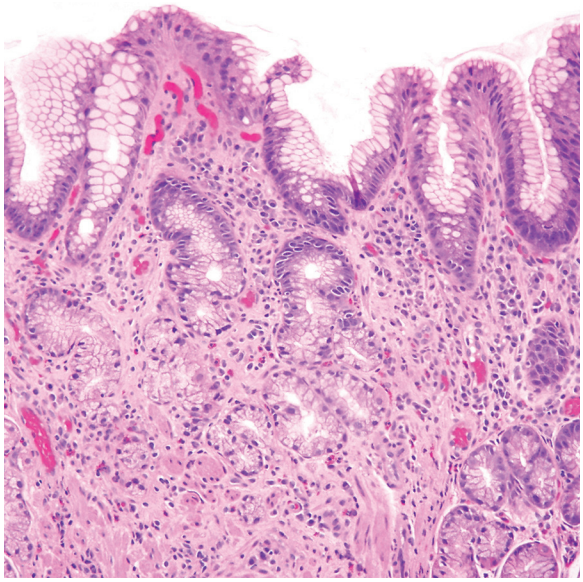

Figure 2-2

GASTRIC CARDIAC MUCOSA

There are no parietal cells and there is lamina propria chronic inflammation, a common finding in patients who undergo biopsies after presenting reflux symptoms. Since reflux results in cycles of damage and repair, there is disorganized smooth muscle in the lamina propria between cardiac type glands, which produce mucin. The surface has foveolar cells just as the oxyntic mucosa does. Some samples show a combination ("cardio-oxyntic mucosa").

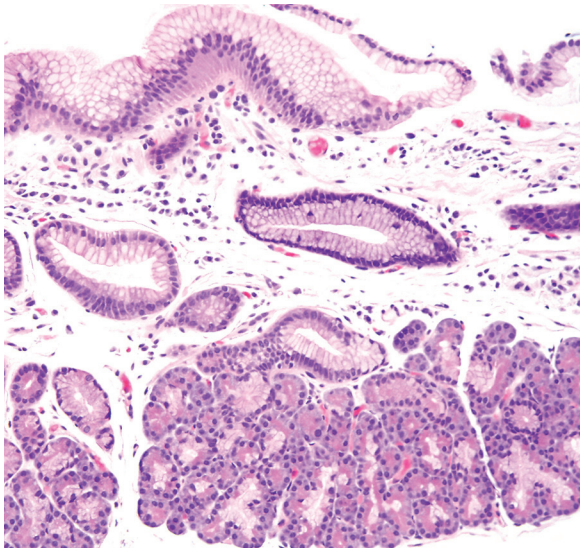

Figure 2-3

PANCREATIC ACINAR CELL HETEROTOPIA IN CARDIAC TYPE MUCOSA

The tubules are closely packed, arranged in lobules, and the cells forming them are more amphophilic (neither eosinophilic nor basophilic) than parietal cells. This is a common finding.

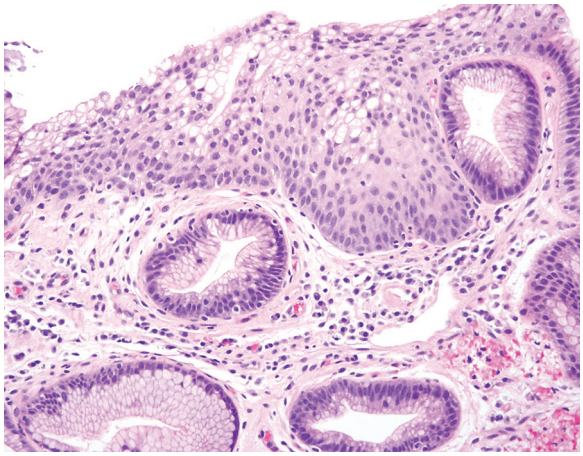

Figure 2-4

MULTILAYERED EPITHELIUM

This type of epithelium is common in persons with reflux and is found in the tubular esophagus. The appearance is reminiscent of that of immature squamous metaplasia of the uterine cervix. The surface appears columnar whereas the base is squamous. Note that this finding is in a background of cardiac type mucosa. There is no need to report this finding; it is simply important to know about it and not diagnose it as dysplasia. The presence of this type of epithelium proves that the sample was taken from the esophagus despite the presence of gastric mucosa.

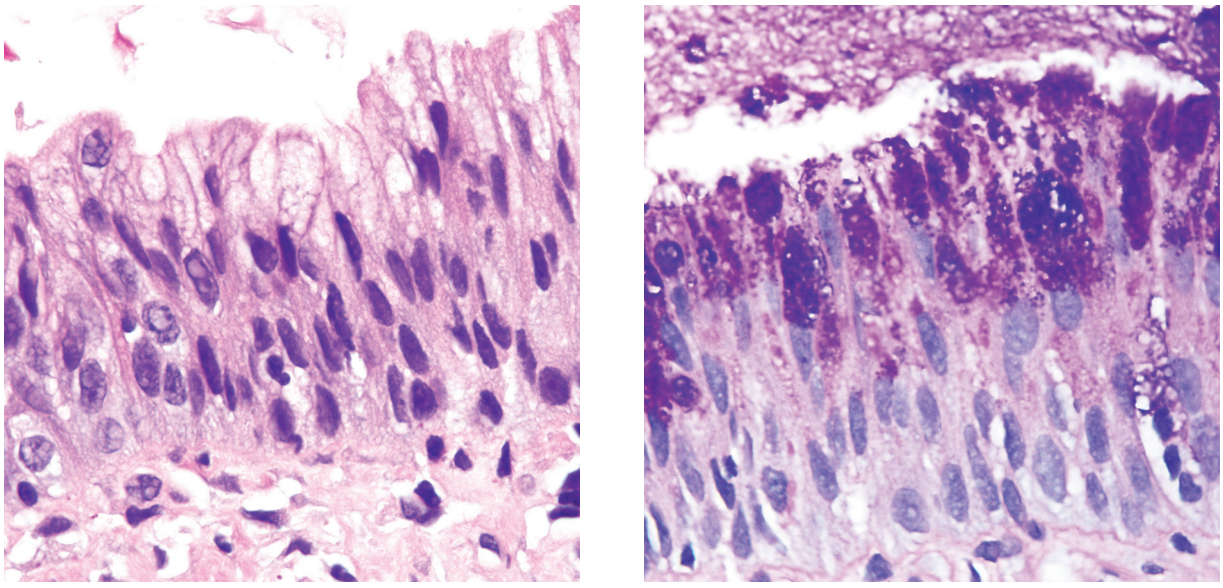

Figure 2-5

MULTILAYERED EPITHELIUM

Left: Note the mucin in the surface cells. These cells can be shown to demonstrate MUC2 and CDX2 in a subset of examples; there is no reason to perform these studies in daily practice.

Right: This is a PAS/Alcian blue stain. Some of the cells have a bluish tint but they lack the morphologic features of goblet cells. There is no reason to perform this staining in daily practice to identify these cells.