

polypoid, or exophytic, and protrude into and obstruct the lumen. Other tumors are either ulcerated or diffusely infiltrative lesions that spread within the esophageal wall and cause thickening, rigidity, and luminal narrowing. They may invade surrounding structures including the respiratory tree, causing pneumonia; the aorta, causing catastrophic exsanguination; or the mediastinum and pericardium.

Most squamous cell carcinomas are moderately to well-differentiated (Fig. 17-10B). Less common histologic variants include verrucous squamous cell carcinoma, spindle cell carcinoma, and basaloid squamous cell carcinoma. Regardless of histology, symptomatic tumors are generally very large at diagnosis and have already invaded the esophageal wall. The rich lymphatic network promotes circumferential and longitudinal spread, and intramural tumor nodules may be present several centimeters away from the principal mass. The sites of lymph node metastases vary with tumor location: cancers in the upper third of the esophagus favor cervical lymph nodes; those in the middle third favor mediastinal, paratracheal, and tracheobronchial nodes; and those in the lower third spread to gastric and celiac nodes.

Clinical Features. The onset of esophageal squamous cell carcinoma is insidious and it most commonly presents with dysphagia, odynophagia (pain on swallowing), or obstruction. Patients subconsciously adjust to the progressively increasing obstruction by altering their diet from solid to liquid foods. Prominent weight loss and debilitation result from both impaired nutrition and effects of the tumor itself. Hemorrhage and sepsis may accompany tumor ulceration, and symptoms of iron deficiency are often present. Occasionally, the first symptoms are caused by aspiration of food via a tracheoesophageal fistula.

Increased prevalence of endoscopic screening has led to earlier detection of esophageal squamous cell carcinoma. This is critical, because 5-year survival rates are 75% in individuals with superficial esophageal squamous cell carcinoma but much lower in patients with more advanced tumors. Lymph node metastases, which are common, are

associated with poor prognosis. The overall 5-year survival rate in the United States remains less than 20%, and varies by tumor stage and patient age, race, and gender.

KEY CONCEPTS

Esophageal Diseases

- Abnormalities of esophageal motility include **nutcracker esophagus** and **diffuse esophageal spasm**.
- **Achalasia**, characterized by incomplete lower esophageal sphincter (LES) relaxation, increased LES tone, and esophageal aperistalsis, is a common form of functional esophageal obstruction. It can be primary or secondary, with the latter form most commonly due to *Trypanosoma cruzi* infection.
- **Mallory-Weiss tears** of mucosa at the gastroesophageal junction develop as a result of severe retching or vomiting.
- **Esophagitis** can result from chemical or infectious mucosal injury. Infection is most common in immunocompromised individuals.
- The most prevalent cause of esophagitis is **gastroesophageal reflux disease (GERD)**.
- **Eosinophilic esophagitis** is strongly associated with food allergy, allergic rhinitis, asthma, or modest peripheral eosinophilia. It is a common cause of GERD-like symptoms in children living in developed countries.
- **Gastroesophageal varices** are a consequence of portal hypertension and are present in nearly half of cirrhosis patients.
- **Barrett esophagus** develops in patients with chronic GERD and represents columnar metaplasia of the esophageal squamous mucosa.
- Barrett esophagus is a risk factor for development of **esophageal adenocarcinoma**.
- **Esophageal squamous cell carcinoma** is associated with alcohol and tobacco use, poverty, caustic esophageal injury, achalasia, tylosis, and Plummer-Vinson syndrome.

STOMACH

Disorders of the stomach are a frequent cause of clinical disease, with inflammatory and neoplastic lesions being particularly common. In the United States, diseases related to the stomach account for nearly one third of all health care spending on GI disease. In addition, despite decreasing incidence in certain locales such as the United States, gastric cancer remains a leading cause of death worldwide.

The stomach is divided into four major anatomic regions: the cardia, fundus, body, and antrum. The cardia and antrum are lined mainly with mucin-secreting foveolar cells that form small glands. The antral glands are similar but also contain endocrine cells, such as G cells, that release gastrin to stimulate luminal acid secretion by parietal cells within the gastric fundus and body. The well-developed glands of the body and fundus also contain chief cells that produce and secrete digestive enzymes such as pepsin.

Gastropathy and Acute Gastritis

Gastritis is a mucosal inflammatory process. When neutrophils are present, the lesion is referred to as acute gastritis. When inflammatory cells are rare or absent, the term gastropathy is applied; it includes a diverse set of disorders marked by gastric injury or dysfunction. Agents that cause gastropathy include NSAIDs, alcohol, bile, and stress induced injury. Acute mucosal erosion or hemorrhage, such as Curling ulcers or lesions following disruption of gastric blood flow, for example, in portal hypertension, can also cause gastropathy that typically progress to gastritis. The term *hypertrophic gastropathy* is applied to a specific group of diseases exemplified by Ménétrier disease and Zollinger-Ellison Syndrome (discussed later).