- *Ameloblastoma* arises from odontogenic epithelium and shows *no* ectomesenchymal differentiation. It is commonly cystic, slow growing, and locally invasive but has an indolent course in most cases. Treatment typically requires wide surgical resection to prevent recurrences.
- *Odontoma*, the most common type of odontogenic tumor, arises from epithelium but shows extensive depositions of enamel and dentin. Odontomas are probably hamartomas rather than true neoplasms and are cured by local excision.

KEY CONCEPTS

Oral Cavity

- **Caries** is the most common cause of tooth loss in persons younger than age 35 years. The primary cause is destruction of tooth structure by acid end-products of bacterial sugar fermentation.
- **Gingivitis** is a common and reversible inflammation of the mucosa surrounding the teeth.
- **Periodontitis** is a chronic inflammatory condition that results in the destruction of the supporting structures of the teeth with eventual loss of teeth. It is associated with poor oral hygiene and altered oral microbiota.
- **Aphthous ulcers** are painful superficial ulcers of unknown etiology.
- **Fibromas** and **pyogenic granulomas** are common reactive lesions of the oral mucosa.
- **Leukoplakias and erythroplakias** are oral mucosal lesions that may undergo malignant transformation.
- The majority of oral cavity and oropharyngeal cancers are **squamous cell carcinomas.** Oral cavity squamous cell carcinomas are classically linked to tobacco and alcohol use, but the incidence of HPV-associated lesions has risen dramatically in the oropharynx and base of the tongue.

UPPER AIRWAYS

The term *upper airways* is used here to include the nose, pharynx, and larynx and their related parts. Disorders of these structures are among the most common afflictions of humans, but fortunately the overwhelming majority of these disorders are more nuisance than threat.

Nose

Inflammatory diseases, mostly in the form of the common cold, are the most common disorders of the nose and accessory air sinuses. Most of these inflammatory conditions are viral in origin, but can be complicated by superimposed bacterial infections. Much less common are a few destructive inflammatory nasal diseases and primary tumors of the nasal cavity or maxillary sinus.

Inflammations

Infectious Rhinitis. Infectious rhinitis, commonly referred to as "common cold," is in most instances caused by one or more viruses. Major offenders are adenoviruses, echoviruses, and rhinoviruses. They evoke a profuse catarrhal discharge that is familiar to all and the bane of the kindergarten teacher. During the initial acute stages, the nasal mucosa is thickened, edematous, and red; the nasal cavities are narrowed; and the turbinates are enlarged. These changes may extend, to produce pharyngotonsillitis. Secondary bacterial infection enhances the inflammatory reaction and produces a mucopurulent or sometimes frankly suppurative exudate. But as all have learned from experience, these infections soon clear up—as the saying goes, in a week if treated but in 7 days if ignored.

Allergic Rhinitis. Allergic rhinitis (hay fever) is initiated by hypersensitivity reactions to one of a large group of allergens, most commonly the plant pollens, fungi, animal allergens, and dust mites. It affects 20% of the U.S. population. As is the case with asthma, allergic rhinitis is an IgE-mediated immune reaction with an early- and late-phase response (see "Immediate [Type I] Hypersensitivity" in Chapter 6). The allergic reaction is characterized by marked mucosal edema, redness, and mucus secretion, accompanied by a leukocytic infiltration in which eosinophils are prominent.

Nasal Polyps. Recurrent attacks of rhinitis may eventually lead to focal protrusions of the mucosa, producing so-called *nasal polyps*, which may reach 3 to 4 cm in length. On histologic examination these polyps consist of edematous mucosa having a loose stroma, often harboring hyperplastic or cystic mucous glands, infiltrated with a variety of inflammatory cells, including neutrophils, eosinophils, and plasma cells with occasional clusters of lymphocytes (Fig. 16-8). In the absence of bacterial infection, the mucosal covering of these polyps is intact, but with chronicity it may become ulcerated or infected. When multiple or large, the polyps may encroach on the airway and impair sinus drainage. Although the features of nasal polyps point to an allergic etiology, most people with nasal polyps are not atopic, and only 0.5% of atopic patients develop polyps.

Chronic Rhinitis. Chronic rhinitis is a sequel to repeated attacks of acute rhinitis, either microbial or allergic in origin, with the eventual development of superimposed bacterial infection. A deviated nasal septum or nasal polyps with impaired drainage of secretions contribute to the likelihood of microbial invasion. Frequently, there is superficial desquamation or ulceration of the mucosal epithelium and a variable inflammatory infiltrate of neutrophils, lymphocytes, and plasma cells subjacent to the epithelium. These suppurative infections sometimes extend into the air sinuses.

Sinusitis. Acute sinusitis is most commonly preceded by acute or chronic rhinitis, but maxillary sinusitis occasionally arises by extension of a periapical infection through the bony floor of the sinus. The offending agents are usually