Bullous myringitis is an acute disorder that presents with rapid onset of a severe earache. One or more blebs, resembling the bulge of an inner tube through a worn tire, are seen on the drum (Fig. 5.1). They may be clear, or red and hemorrhagic. There is great sensitivity when the pneumatic otoscope is used. The disease is a self-limited viral one and thus analgesics, both systemic and topical (antipyrene/benzocaine drops), are the recommended treatment.

These disorders can be diagnosed, treated, and followed by the primary practitioner who is able to use the pneumatic otoscope. Elective ENT referral can be made for refractory cases.

**Tympanic Membrane Perforations**

**Traumatic Perforations**

The TM can be injured in several different ways. The scenario involving a person cleaning the ear with an applicator or hairpin, which we described in the last chapter, is the first way—a direct, penetrating injury. Frequently, a second person inadvertently hits the elbow of our unfortunate ear hygienist to cause the injury. Another cause is an implosion of the drum by a striking force, such as a slap or fist to the ear. This type of perforation is usually anterior and inferior. An abusive family member may be involved, and sometimes, pathetically, the victim will try to hide any detail of the incident when presenting to the office. Diving and water skiing accidents may also implode the drum. Rarely, a forceful explosion near the ear can also implode the drum, usually causing acoustic damage to the inner ear as well. Finally, a hot slag particle, as with welding, may
penetrate the TM, cauterizing the edges as it goes through into the middle ear. In this case, spontaneous healing is less likely and recurrent infection and drainage may ensue.

Traumatic perforations vary in their size and location. Some may be difficult to see on examination. They may be small and hidden behind exudates or blood clots or may also be obscured by the bony hump of the anterior canal wall. If the examiner can see part of the drum, the pneumatic otoscope, with an adequate air seal in the canal, is the key to diagnosis. A totally immobile TM will be seen with any perforation. (An extremely scarred TM or glue ear may also show immobility). Conversely, if the drum is mobile, there is no perforation.

In all traumatic perforations, middle ear ossicle damage, even with oval or round window rupture, may occur. Look for inordinately large hearing loss (>35 dB HL) or the presence of vertigo as a clue. The Weber and Rinne tests are helpful here. Most traumatic perforations (probably 90%) heal spontaneously. Avoidance of water and observation are the only initial treatments needed. Topical antibiotic eardrops may be indicated if drainage and infection are present. Very large traumatic perforations and those from slag are less likely to heal. These will require surgery if they show no signs of closing after observation for a few months.

Perforations from Acute Infections
The most frequently occurring perforations are, thankfully, the most short-lived. These are the ones resulting from acute otitis media. Here, the TM is so red, wet, and distorted that the small opening is not always seen. Almost all of these heal within days, assuming that antibiotics are given. An exception occurs with the rare, aggressive, acute necrotizing otitis media. This is usually caused by beta streptococcus in conjunction with a severe viral infection like measles. In other countries, scarlet fever is still a cause. In these cases, a large permanent perforation is created. Necrosis of the central TM typically leaves a large horseshoe-shaped hole in the drum surrounding the manubrium. In the pre-antibiotic era this was one of the leading causes of chronic perforations.

Chronic Perforations
Long-standing perforations may be seen in patients who have experienced years of eustachian tube problems and intervening infections. Ventilating tubes may have been inserted repeatedly. The surrounding TM is often thick and scarred (Fig. 5.2). Affected individuals have conductive hearing loss and may be plagued with recurrent drainage through the perforation. These episodes of drainage (otorrhea) are often initiated by water in the ear or upper respiratory infections.