American College of Emergency Physicians  
Section of Pediatric Emergency Medicine

Ophthalmology Quiz Answers 12/03

1. d. While the first two tests should eventually be done, the most important question to be answered is whether or not a fragment of nail has penetrated Billy’s globe. Since nails are metallic, plain x-ray should answer this question. Less radiopaque foreign bodies may be better visualized using CT scan. Testing of intraocular pressure using a tonometer should be avoided until an injury to the globe has been ruled out.

2. c. Billy’s problem is purely mechanical. He has sustained an inferior orbital “blow-out” fracture and his inferior rectus muscle has become trapped. In most cases the problem resolves spontaneously once the edema has subsided and ophthalmologists often manage these injuries conservatively.

3. b. Billy has classic “pharyngoconjunctival fever” caused by Adenovirus. Adenoviral conjunctivitis is commonly hemorrhagic and associated with significant swelling. The other “dynamic duo” of eye infections is the conjunctivitis- otitis syndrome caused by Haemophilus influenzae.

4. a. Timmy’s problem began with sinusitis, specifically, ethmoiditis. The intense pressure in the ethmoid sinus caused the purulent material in Timmy’s sinus to rupture through the wall of the ethmoid sinus (lamina papyracea) and into the orbit itself. The resulting disease is orbital cellulitis. Periorbital cellulitis is a true cellulitis involving the skin around the eye.

5. c. A hordeolum, commonly known as a “stye” is an infection of the hair follicles and eyelashes (external hordeolum) and/or the meibomian glands (internal hordeolum). Staphylococcus aureus is the causative agent in well over 90% of cases. Most cases are unilateral. As an infectious process, a hordeolum is often painful. On the other hand, a chalazion is a granuloma involving the meibomian glands. Chalazions are usually painless.