A 9-year-old girl was brought to the emergency department (ED) after she sustained trauma to the left eye from a plastic toy while playing with her sibling. The family noticed redness of the eye with clear watery drainage, and the child complained of pain and refused to open the eye. Three years earlier, she had sustained trauma to the same eye and was treated with antibiotics. She had no other significant past medical or surgical history and was up-to-date on her immunizations.

The child’s vital signs were normal. She was crying. There was mild conjunctival injection of the left eye. Pupils were equal, round, and reactive to light. Extraocular movements were full and painless. There was no subconjunctival hemorrhage or blood in the anterior chamber of the left eye. Visual acuity of the affected eye was 20/100. The right eye and the remainder of the physical findings were normal.

After application of proparacaine and fluorescein dye in the eye, examination of the cornea with a Wood lamp revealed a large (6 × 7-mm) abrasion with loose epithelium surrounding the area of the epithelial defect.

Corneal abrasion refers to any defect that affects the corneal epithelium. It is usually caused by direct trauma to the eye, a foreign body, or contact lens; however, it also can be a spontaneous recurrence of an old abrasion. Corneal abrasion is common in infants and children and accounts for 12% of ED visits for eye-related complaints.1,2

Infants with corneal abrasions often present with unexplained fussiness and refuse to open their eyes. Older patients have severe pain with foreign body sensation that is not relieved by washing the eye. They often refuse to open the eye because of pain caused by exposure of the trigeminal nerve ending. Visual acuity is typically normal when the abrasion is outside the visual axis but is decreased to varying degrees when the abrasion is within the visual axis. Concurrent corneal edema may occur and can result in a substantial loss of visual acuity.

Topical proparacaine relieves the associated pain and allows for a detailed eye examination. If pain persists after topical anesthetics, other conditions (eg, acute glaucoma, iritis, orbital or periorbital cellulitis) should be excluded. Fluorescein staining is essential in confirming the diagnosis. The stain usually fluoresces the alkaline subepithelium (Bowman membrane) with a green color, when the eye is examined under blue light. Ophthalmologic evaluation is usually recommended for abrasions larger than 3 mm.

Treatment consists of a topical antibiotic and oral analgesic to control pain. Topical corticosteroids can worsen a misdiagnosed herpetic ulcer or infectious keratitis, and outpatient topical anesthetics are associated with a risk of toxicity. Thus, both agents are contraindicated. Most abrasions heal spontaneously within 24 hours (or at a rate of 1 to 2 mm per day) and do not cause any permanent visual damage. Complications such as infectious keratitis, recurrent erosions, and persistent defects are rare and can lead to scarring secondary to infection. Patching is not indicated because of the lack of benefit and risk of infection. Close follow-up and monitoring for potential complications by a pediatric ophthalmologist is recommended.

This patient was evaluated by a pediatric ophthalmologist and was treated with topical erythromycin ointment and oral analgesics. At 24-hour follow-up, she was noted to have resolution of symptoms and complete restoration of vision.

REFERENCES: