that eye, and visual acuity is poor. Limited visual outcome in these patients can be attributed to severe intracranial damage (Table 2), severe retinal hemorrhages (Table 2), and aphakia with amblyopia.

The presence of a macular hole in SBS is a poor prognostic finding. Affected patients usually have severe visual acuity deficits, even with successful anatomical repair. Additionally, macular hole may be a predictor of severe neurologic injury in SBS, as was the case in 3 of the 5 patients we described.

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Financial Disclosure: None.


Transorbital Penetrating Brainstem Injuries

Penetrating injury to the posterior fossa is uncommon, and when it occurs, it is typically due to projectiles that pierce the cranial bones. Morbidity and mortality from these injuries are high. We present 3 cases in which objects that were thrust through the orbit penetrated the upper brainstem. All patients survived their injuries.

Report of Cases. Case 1. A 21-year-old man was struck below the left eye by a wire 4 mm in diameter while laying concrete-reinforcing steel mesh. He had a puncture site evident on his left lower lid. He complained of vertical and horizontal diplopia, mild left ptosis, decreased coordination of the right side of his body, and slurred speech.

Examination showed visual acuities of 20/15 OU. There was mild ptosis with limited adduction, abduction, and elevation in the left eye. His pupils were symmetric and reactive without a relative afferent pupillary defect. There was no evidence of globe injury. Goldmann perimetry testing results were normal. He had poor coordination of the right side of his body. There was no weakness. Speech was dysarthric without aphasia.

A computed tomographic scan showed minimal hemorrhage in the region of the left inferior rectus muscle. No bony fracture was present. Magnetic resonance imaging revealed a linear lesion in the inferior midbrain that began in the cerebral peduncle and was directed back toward the aqueduct (Figure 1). There was no retrobulbar hemorrhage.

A follow-up examination 2 years later revealed residual diplopia and a mild right hemiparesis.

Case 2. A 38-year-old man was stabbed in the upper left orbit and immediately became paralyzed on his right side. He remained conscious. He also complained of an inability to see out of his left eye secondary to complete ptosis. He reported local orbital pain, but had no other sensory symptoms.

Examination revealed acuities of 20/20 OD and 20/100 OS. Color vision and confrontation visual fields were normal. A small entry wound was discovered in the left medial upper lid and measured less than 1 cm in length. The right eye moved normally but the left was immobile and had a fixed, dilated pupil without a relative afferent pupillary defect. Dilated funduscopic examination did not reveal any abnormalities. He had a right central seventh nerve palsy and a right hemiparesis with upgoing toe.

Magnetic resonance imaging of the brain revealed a linear lesion in the superior pons angling from the left ventrolateral side medially toward the fourth ventricle (Figure 2). The lesion was dark on gradient echo imaging and bright on diffusion-weighted imaging. A computed tomography angiogram showed no evidence of a vascular injury.

The hemiparesis gradually improved and the patient walked into the clinic for his follow-up visit 3 months later. At that time, he had visual acuities of 20/15 OD and 20/20 OS. Ocular motility revealed minimal adduction, elevation, and infraduction of the left eye. He had moderate abduction and the eye was intorted. The pupil was fixed and dilated and a subtle right hemiparesis persisted.

Case 3. A 13-year-old boy was struck below his right eye by a beach umbrella tine ⅓ of an inch in diameter. His mother reported that he did not lose consciousness but was...
dazed at the scene and required assistance with ambulation immediately after the injury. The patient complained of complete right upper lid ptosis. He did not complain of weakness or uncoordination.

Examination revealed corrected visual acuities of 20/20 OU. He had ecchymosis of the medial right lower lid without skin laceration. There was complete right upper lid ptosis. He had limitation of supraduction, adduction, and abduction of the right eye. His left eye moved normally. The right pupil was fixed and dilated and there was no relative afferent pupillary defect. A subconjunctival hemorrhage was found on the inferior right globe without obvious laceration. There was a slight left hemiparesis with mild dysmetricria of the left side.

While a computed tomographic scan revealed no fractures or abnormalities of the retrobulbar structures, a magnetic resonance image showed a hemorrhagic lesion of the right upper pons that extended to the cerebellar vermis (Figure 3). Cerebral angiography did not show any abnormalities.

A follow-up examination 2 months later revealed no residual hemiparesis and significantly less ptosis and diplopia.

Comment. Previous investigators have found that intracranial penetrating injuries commonly occur via orbital roof fractures, the superior orbital fissure, or the optic foramen. None of our patients had obvious orbital fractures on computed tomographic scanning. Also, none of our patients suffered a visual field defect or relative afferent pupillary defect, which made entry through the optic foramen unlikely. The trajectory through the orbital apex, via the superior orbital fissure, points straight to the upper brainstem. A thin object entering in this direction would pass over the top of the clivus as it reaches the posterior fossa. The exact location of the entry wound is important in pathogenesis because lesions through the upper eyelid or above the globe angled through the posterior orbit would strike a location more inferior in the brainstem, which occurred in our second case.

None of our patients suffered serious globe injury. Furthermore, it is remarkable that none of our patients suffered a vascular injury to the internal carotid, basilar, or posterior cerebral arteries and that none of them suffered from delayed meningitis.

Although not unheard of, penetrating injury to the brainstem through the orbit is a rare occurrence and is often fatal. We recommend obtaining magnetic resonance imaging of the brain and intracranial vasculature in patients who develop diplopia, even after a minor injury to the region around the orbit. The lack of a significant entrance wound in the eyelid or conjunctiva should not dissuade imaging because external injuries may be very subtle, as was the case with our third subject. Patients should be observed closely for the appearance of subsequent meningitis. If patients survive the initial injury, then their prognosis is good for a near-complete recovery.

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Financial Disclosure: None.

Funding/Support: This study has been supported by an unrestricted grant from Research to Prevent Blindness, New York, NY.

Additional Information: This study conformed to the protocol of our institutional review board and did not require approval.


Pharmacologic Treatment of Congenital Nystagmus

Pharmacologic treatment has been used in acquired nystagmus with mixed success. Treatments have included baclofen, sodium valproate, gabapentin, and memantine. However, in congenital nystagmus, little is known about the effect of drugs. We describe a patient with congenital nystagmus and corneal dystrophy who improved dramatically with gabapentin treatment.

Report of a Case. A 37-year-old man complained of difficulty crossing roads and reading since childhood due to his poor vision. The patient claimed that these symptoms were alleviated by the consumption of alcohol. He had no oscillopsia. He had congenital nystagmus from birth and was noted at the time to have bilateral corneal opacities. The left eye was amblyopic despite occlusion therapy, and a corneal graft had been performed 20 years previously. Histologic findings from the graft confirmed the diagnosis of congenital granular stromal corneal dystrophy.

The initial visual acuity was 20/80 OD, 20/600 OS, and 20/80 OU. He had a small esotropia in the left eye and a conjugate, horizontal, pendular, and jerk nystagmus. The null point was in pri-