Exceptional penetrating orbital injury that spared the eye globe

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DESCRIPTION

A 29-year-old man presented to the emergency room after suffering an intentional right orbital penetrating injury with a knife. Cranial and orbital volumetric CT scans (figures 1 and 2—three dimensional reformatting images) were obtained in an emergency setting and show the knife entry point through the right superior and external supraorbital region. The knife penetration follows an anteroposterior axis from right to left and from superior to inferior. Distally, on the left side, the knife penetrates the infratemporal fossa, missing the internal carotid artery by 5.6 mm and hitting the zygotic bone. Proximal to the entry point, the track passes between the right ocular bulb and the external rectus muscle, and goes through the intraconal fat, without coming into contact with the optic nerve. There is apparent disruption of the inferior rectus muscle and penetration of the inferior orbital plate, lamina papyracea, ethmoidal labyrinth, left vidian canal and left infratemporal fossa. There are no apparent traumatic brain lesions, despite the artefacts caused by the knife. A multidisciplinary team performed surgery to remove the knife in an uneventful procedure. Twenty-four hours after the procedure, ophthalmological examination revealed a normotonic ocular globe with no signs of perforation. Visual acuities and ocular motility were grossly preserved. Volumetric postoperative CT scans (figure 3—sagittal plane) show right orbital pavement fractures and right maxillary and ethmoidal hemosinus. However, the right ocular globe and the optic nerve are unremarkable. Although strikingly surprising, these exceptional images substantiate that the ocular globe may be spared after an important penetrating orbital injury.[1 2]

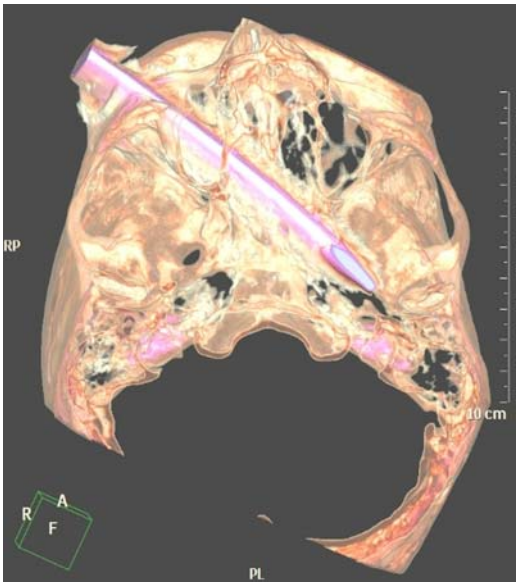

Figure 1 Cranial and orbital volumetric CT scans—a three-dimensional reformatting image.

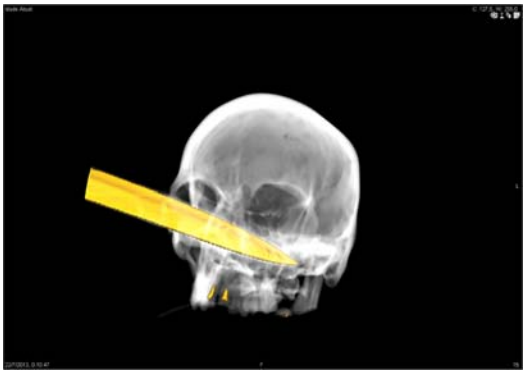

Figure 2 Cranial and orbital volumetric CT scans—a three-dimensional reformatting image.

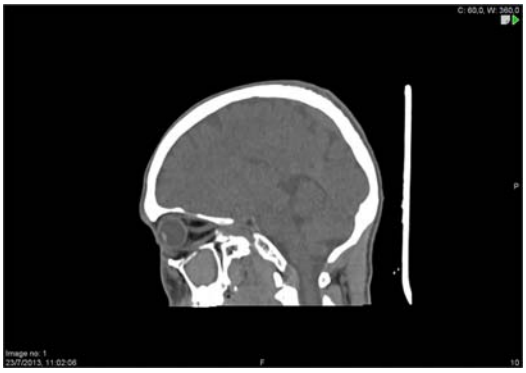

Figure 3 Volumetric postoperative CT scan—a sagittal plane.

Learning points

- Orbital perforating and penetrating trauma are sight-threatening injuries generally due to sharp or high-velocity objects.[3]
- Visual prognosis is usually poor due to severe damage to globe structures that generally follows these traumas; however, in rare cases, orbital injuries may spare the globe, culminating in a much better visual outcome.[1 2]
- Orbital CT scans may help predict visual prognosis in orbital perforating and penetrating injuries, which emphasises the need for a multidisciplinary team in care management of ophthalmological trauma.[3]

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Competing interests None.

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