A 16-month-old boy fell down on the floor with a metallic chopstick in his hand. On his admittance to our hospital, the chopstick was stuck into the medial aspect of the right upper eyelid. The patient was crying, but his consciousness was normal. However, he was unable to open his right eye because of swelling of the lid and the foreign body penetration (Fig. 1). We were unable to perform further physical examinations due to the possibility of aggravating the injury. After sedation, CT scanning of the head was carried out for the evaluation of intracranial injury. A non-contrast CT study revealed a 2-cm transorbital–intracranial chopstick tract from the skull base and band-like acute haematoma with surrounding oedema in the right frontal lobe. This haematoma measured about $8.7 \times 3.3 \times 15.7$ mm and was located above the chopstick. Three-dimensional CT showed that the metallic chopstick had penetrated the right frontal brain parenchyma through the orbital roof (Fig. 2). Antibiotics were administered from the time of admission to prevent potential intracranial infection. The patient underwent an operation by ophthalmologists and neurosurgeons under general anaesthesia. Before the foreign body was removed, the upper eyelid was gently opened to check the pupil reflex, which was found to be normal. A forcedduction test revealed no limitation. A bicoronal incision was made from the superior margin of the zygomatic arch. The chopstick, buried in the frontal lobe, was carefully removed externally. The patient was alert after the operation without any sign of intracranial infection, and visual evoked potentials examination showed a normal response.

Fig. 1. (A) Preoperative photograph showing the child with a tiny wound on the right upper lid. He was unable to open his right eye because of the mild lid swelling and the foreign body. (B) Two months after the operation he recovered without any neurological or ophthalmological complications except for a small scar on the right upper lid.

Diagnosis/Therapy in Ophthalmology

Transorbital–intracranial injury by a chopstick: three-dimensional computed tomography

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appears to be superficial and the patient does not usually display serious initial symptoms, with the result that these injuries may be considered as trivial by parents and the ophthalmologist. However, overlooked intracranial penetration injuries have a high mortality rate. These fatalities are related to intracranial complications including meningitis, cerebrospinal fluid leakage, granuloma, chronic draining fistula, brain abscess and intracranial haemorrhage (Bard & Jarrett 1964).

Although transorbital—intracranial penetration by a chopstick is somewhat unusual, it carries with it a potentially high mortality rate, especially for children due to their delayed awareness. Therefore, any periorbital puncture wound by a long, sharp object should alert the ophthalmologist to the possibility of concomitant intracranial penetration.

The three-dimensional CT presented in this report highlights the possibility that a tiny periorbital wound may be accompanied by a serious intracranial injury. This case serves to remind us that in the case of lid injury by a long, sharp object, even if it involves only a small periorbital wound, the ophthalmologist must consider the possibility of accompanying intracranial penetration.

References


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