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# Self-inflicted transorbital injury by chopstick in patient with schizophrenia

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Accepted 30 October 2020

## DESCRIPTION

A patient in her 40s with schizophrenia was brought to the emergency department after self-inflicted neck and wrists cuts. She was confined in a high care unit postoperatively. On the afternoon after the surgery, the nurses found that the light reflex in her left eye was absent and called us. Ophthalmological examinations revealed conjunctival haemorrhage and no direct and indirect light reflex in her left eye. We ordered a CT study, and the images showed an intracranial rod-shaped foreign body (figure 1, video 1). Later, the nurses reported that the tip of a 13 cm long chopstick had been missing after lunch, and they had been searching for it. As the patient said that she swallowed it, abdominal CT was studied, but it was not found. The 3D images and 3D CT angiography showed that the foreign body had penetrated into the brain through the optic canal and superior orbital fissure, and passed to the occipital bone. It was located on the left side of the pons (figure 2, video 1). The diameter and length of the object matched the tip of the chopstick. We assumed that she had tried to pierce her left eye with the chopstick, and it slid off the eye and passed through the orbital canal into the brain. Then, when she pulled it out violently, the tip broke off and was left in the brain.

After the incident, the patient had no remarkable changes physically and psychiatrically except for the loss of vision in her left eye due to the orbital apex syndrome. The neurosurgeons decided not to remove the tip because its location was in an area with a high risk for critical complications. The left eye lost all light perception, and the patient developed ptosis, total motility indicating a disruption of the oculomotor nerve, dilatation of the pupil and hypotropia. The optic



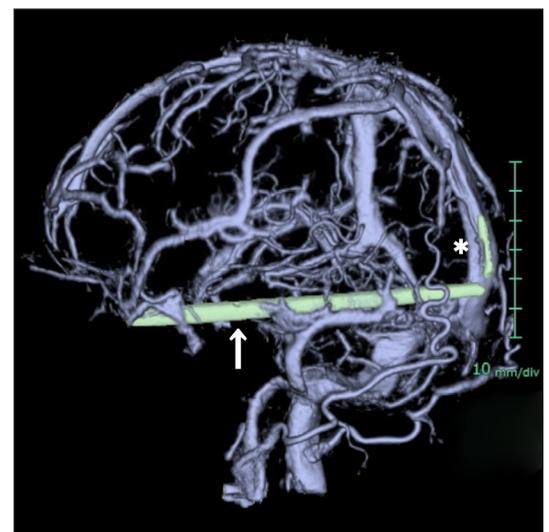
**Video 1** CT and 3D-CT shows the foreign body clearly

disc became atrophic and the inner retina became thinner in a few months.

Early treatment of mental illness by a psychiatrist and closer surveillance might have reduced the risk of this ocular self-injury. A history of suicide attempts and deliberate self-harm, schizophrenia and suicidal thoughts have all been identified as risk factors for suicides by inpatients.<sup>1</sup> Additionally, the suicide attempts were found to be highest immediately after admission and also soon after discharge from the hospital.<sup>1</sup> In fact, the case of self-inflicted transorbital brain injury by chopsticks in a patient with psychosis in hospital had been reported in Asia.<sup>2</sup> As this case occurred under sedation, it might have been difficult to completely prevent it. A consultation with the psychiatrist and starting the treatment were



**Figure 1** CT scan shows an intracranial rod-shaped foreign body. Intracerebral haemorrhage is not present (arrow).



**Figure 2** 3D CT shows that the chopstick passed the internal carotid artery, ran along the posterior cerebral artery (arrow), and the tip was located on the left side of the pons (asterisk).



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**To cite:** Shimizu N, Baba T, Watanabe Y, et al. *BMJ Case Rep* 2020;**13**:e239721. doi:10.1136/bcr-2020-239721

## Images in...

delayed because the accident occurred the day after the emergency surgery for her slashed neck and wrist.

The neurosurgeons decided not to remove the tip of the chopstick in this case. Although the incidence of central nervous system damage from transorbital penetrating objects is related to the orbital bone anatomy, and the size, shape and trajectory of the penetrating object, no fatal cases of injury by a chopstick have been reported.<sup>3 4</sup> In some cases, a cerebral infection developed years after the injury but the outcome was favourable with antibiotics.<sup>4</sup>

### Patient's perspective

When I was asked what I did at lunch, I told a lie that I have swallowed the chopstick.

### Learning points

- ▶ An intracranial lesion needs to be eliminated when the light reflex is negative by CT scan.
- ▶ Early treatment by a psychiatrist and closer surveillance are necessary for patients with mental illness.
- ▶ In some cases of transorbital penetrating injury by chopstick, outcome is favourable with antibiotics even without removal.

**Contributors** NS and YW were involved clinical diagnosis and patient's care. NS, TB and SY drafted the manuscript, and all authors contributed substantially to its revision. NS takes responsibility for the paper as a whole.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** TB: personal fees from Bayer, personal fees from Kowa, personal fees from Santen, personal fees from Senju, personal fees from Alcon, grants and personal fees from Novartis, outside the submitted work. SY: grants and personal fees from HOYA, grants and personal fees from Senju, grants and personal fees from Pfizer, grants and personal fees from Santen, grants and personal fees from Alcon Japan, grants and personal fees from Alcon Pharma, grants and personal fees from Bayer, grants and personal fees from Kowa, personal fees from Nikon, personal fees from Wakamoto, personal fees from Chuo Sangyo, personal fees from Daiichi Sankyo, personal fees from Jamex, personal fees from Sun Contact Lens, personal fees from Finedex, personal fees from Novartis, personal fees from Chugai, personal fees from AbbVie, outside the submitted work. The following authors have no financial disclosures: NS and YW.

**Patient consent for publication** Obtained.

**Provenance and peer review** Not commissioned; externally peer-reviewed.

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