

CLINICAL IMAGE

Through-and-through gunshot wound to the head in a rare case of survival

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Abstract

We describe the case of a 42-year old Caucasian male who presented for follow-up treatment of refractory epilepsy. He suffered a cranial trauma 13 years before when a bullet from a pistol, (presumably accidentally) entered the right frontal side of the cranial vault and exited contralateral, causing severe neurological damage.

KEYWORDS

gunshot, head trauma, through-and-through wound

Bullet gunshots have a notorious and high level of lethality even when promptly treated. Survival is still possible depending on several factors, and authors have discussed of predictor factors that might lead to a favorable outcome.¹

We describe the case of a 42-year-old European male who presented for follow-up treatment of refractory epilepsy. He suffered a cranial trauma 13 years before when a friend of him fired a bullet from a semi-automatic.357 Magnum pistol. The shot came from a close range (<1 m), presumably accidentally. The bullet entered the right frontal side of the cranial vault and exited contralateral, severing seriously the right frontal lobe and the left temporal structures (Figure 1).

The patient survived the trauma with severe neurological sequelae, aphasia, right hemiparesis, and seizures, which required polytherapy (two antiepileptic drugs). When interviewed through a written, translated questionnaire about the quality of life (measured through the

original QOL scale), the patient self-reports the situation as being “fair” (out of five options from “excellent” to “poor”).²

The sagittal MRI images of the brain depict quite well the trajectory of the through-and-through bullet gunshot, which transited just above the callosal structures (Figure 2, middle inset) thus sparing the ventricular system, which might have been decisive regarding the final outcome of the trauma.

A reconstruction of the MRI images (Figure 3) illustrates also the characteristic of the entry wound and of the exit wound, albeit the time lapse of more than a decade from the gunshot will render the details less visible.

Forensic casuistic and case reports of unlikely survival are available.³ Sources have as well identified a diversity of prognostic factors for such a highly lethal occurrence, whose chance of survival approximates 9% in all cases, even when treated aggressively.^{1,4,5}

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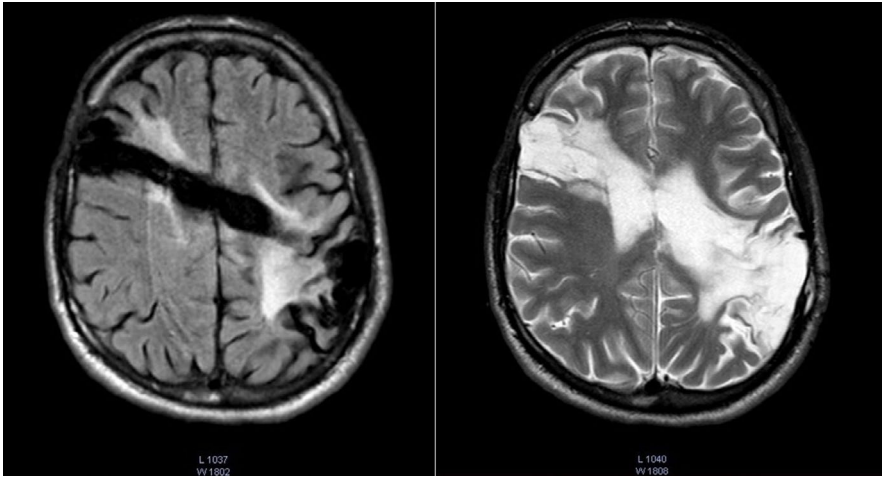


FIGURE 1 Axial T2 flair (left inset) and T2 TSE (right inset) weighted images. Note the differences from the entry wound (right frontal lobe) with the exit wound (left temporal lobe)

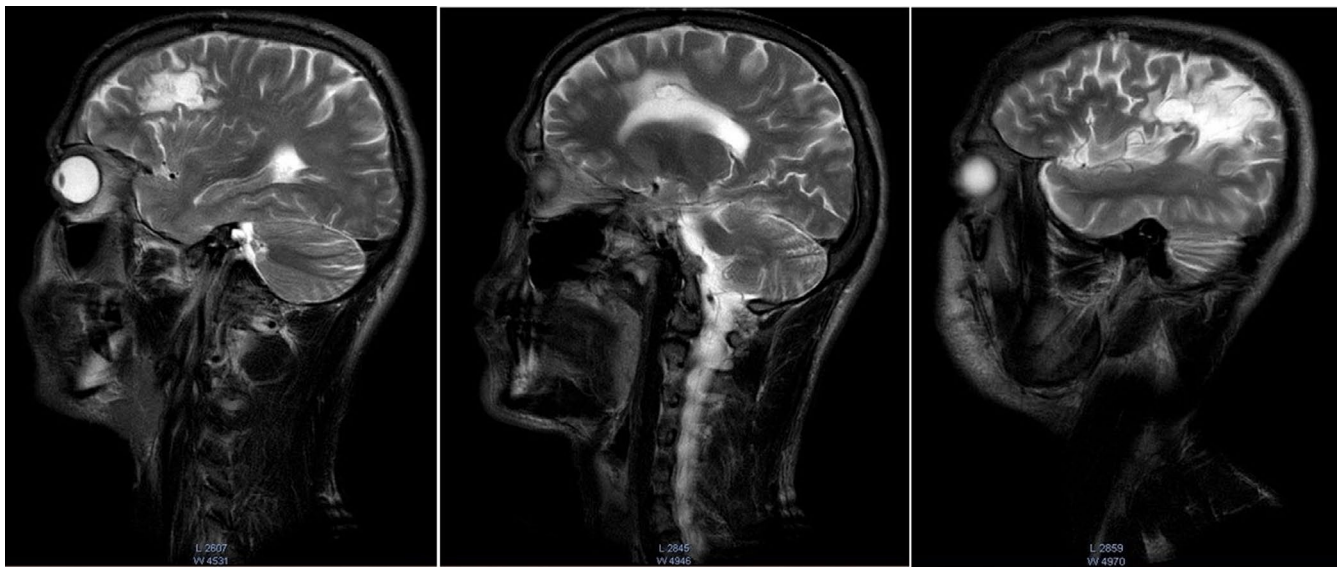


FIGURE 2 Sagittal T2-weighted TSE images depicting the intracranial trajectory of the bullet. Left inset: entry wound; middle inset: intracranial trajectory with the bullet transiting slightly above the callosal structures; right inset: exit wound

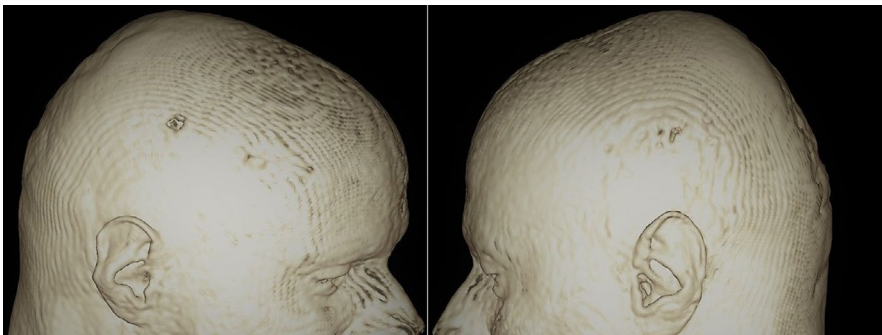


FIGURE 3 Reconstruction of images with the entry wound (left inset) and exit wound (right inset)

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None.

CONFLICTS OF INTEREST

The authors declare no conflict of interest related to this article.

AUTHOR CONTRIBUTIONS

BC, GV, PG, and DQ involved in manuscript writing, data collection, and literature reviewing.

CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

DATA AVAILABILITY STATEMENT

No dataset available for this case report.

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