

025. Brain Corpal Evacuation Caused by Air Gun: Management and Surgical Approach Evacuation with Neuronavigation Guiding

Etna Irianti Putri¹, Donny Wisnu Wardhana¹

¹Department of Neurosurgery, Faculty of Medicine, Brawijaya University, Malang, Indonesia

ABSTRACT

Background: In Indonesia, cases of injury from airgun are relatively common and do not immediately result in death because the projectile velocity of airgun is slower compared to the gunshot. Consequently, if the pellet hits the brain (brain injury), it may cause the patient to live with disabilities or infection problems due to the non-sterile of the airgun pellet. Surgical procedures often difficulties in determining the location of the pellet or foreign body, especially if the pellet of air gun penetrates to the contralateral side of the entry point. Neuronavigation is a modern system in neurosurgery that helps surgeons precisely locate targets with minimal disruption to critical brain and spinal structures. This allows for more precise and easier pellet evacuation. Report a patient who had a gunshot wound with the bullet entering from the left parietal region and penetrating through to the right parietal surface of the head, managed comprehensively with neuronavigation guidance. **Case:** A 5-year-old female patient presented to the emergency department with an open wound on the left parietal region of the head. Her Glasgow Coma Scale score was 8 (GCS: Eye: 2, Verbal: 2, Motor: 4), indicating a sedated state. Initial and specific treatments were administered to prevent deterioration and improve the patient's prognosis. Surgical management, using neuronavigation guidance, was employed to determine the exact location of the foreign body. The procedure included debridement of the entry point in the parietal region and evacuation of the foreign body using neuronavigation guidance. **Conclusion:** Early management of gunshot injuries is crucial for improving prognosis. Neuronavigation guidance proved effective, and minimally invasive neurosurgical techniques may be a safe option for treating traumatic brain injuries caused by gunshots. This approach facilitates easier, faster, and more precise incision and evacuation of foreign bodies.

Keywords: Gunshot, Neuronavigation, Penetrating Brain Injury, Trauma Brain Injury

DOI: <https://doi.org/10.24843/JBN.2024.v08.is02.p025>