De um Lado ao Outro: Um Desafio Funcional

Side to Side: a Functional Challenge

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A 38-year-old man without relevant medical history was admitted to the emergency room after a penetrating traumatic brain injury due to self-inflicted gunshot wound during a suicide attempt.

On arrival, his Glasgow Coma Scale score was 4 (E1M2V1). After hemodynamic stabilization and intubation, cerebral imaging revealed diffuse bilateral fronto-opercular and subarachnoid sulcal parenchymal hemorrhage (Fig.1-A), between the points of entry and exit of the bullet (Fig.1-B).

At day 28 in ICU, the patient was evaluated by Physical Medicine and Rehabilitation (PMR). He was in a state of minimal consciousness (Coma Recovery Scale-Revised (CRS-R)=7, Minimally conscious state (MCS) minus), with flaccid tetraplegia and respiratory dysfunction requiring

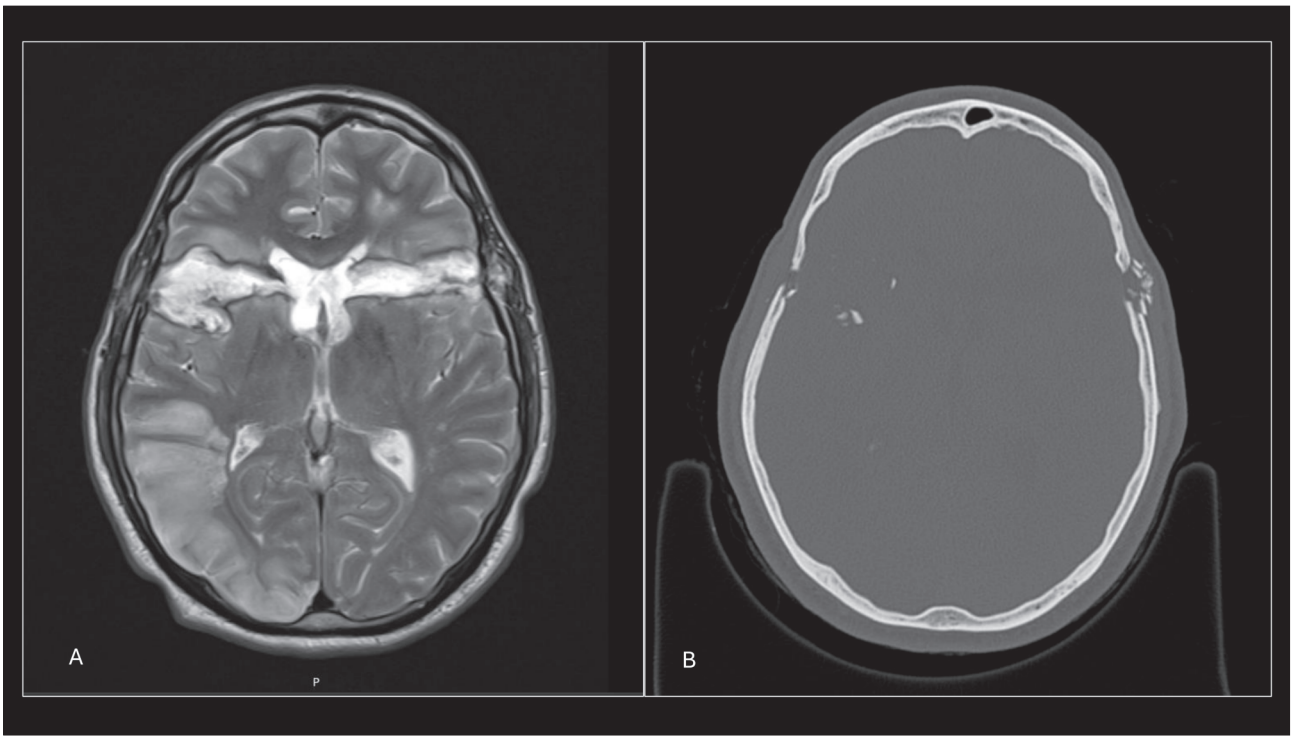

Figure 1 - A) Cerebral magnetic resonance imaging (T2WI) revealing the bullet trajectory with fronto-opercular parenchymal hemorrhage; B) Cerebral computed tomography scan showing the entry and exit points of the projectile.

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mechanical ventilation (Functional Independence Measure (FIM 18)). A daily multidisciplinary rehabilitation program was initiated, including physiotherapy and rehabilitation nursing, focusing on interaction stimulation, neuromuscular re-education, and respiratory kinesitherapy for ventilatory weaning. Due to prolonged ventilation dependence, a percutaneous tracheostomy was performed.

Once medically stable, on day 36, he was transferred to Neurosurgery Department and reevaluated by PMR. He followed simple commands (CRS-R=16, MCS+) but still presented respiratory dysfunction (abundant secretions, airway and oxygen dependence) and flaccid tetraparesis. He maintained daily treatment with physiotherapy, rehabilitation nursing, and initiated speech and language therapy.

During the next weeks, the patient progressed favorably, no longer requiring oxygen support. A decannulation protocol was initiated, and on day 63, the tracheostomy cannula was successfully removed without complications.

After decannulation, tactile and thermal stimulation was started, and swallowing reeducation progressed. Given the favorable evolution and videofluoroscopic study of swallowing without abnormalities, the nasogastric tube was removed on day 74 and oral feeding started (Functional Oral Intake Scale 5).

On 82nd day, consciousness and neuromotor status improved, still presenting post-traumatic amnesia (Galveston Orientation Amnesia Test 71) and normotonic tetraparesis with left brachial predominance (FIM 33).

Penetrating brain injuries are rare and associated with worse prognosis and higher pre-hospital mortality compared to closed head trauma[1]. In acquired brain injuries, particularly severe cases requiring ICU admission, early, intensive, and multimodal neurorehabilitation programs are crucial for improving survival and functional outcomes, offering patients better chance of recovery[2]. In these cases, the probability of successful decannulation is approximately 45%[3]. Despite the poor vital and functional prognosis, particularly due to involvement of critical brain structures, significant clinical and functional recovery was achieved. Given the complexity and critical nature of such injuries, treatment at specialized and differentiated centers is strongly recommended to optimize outcomes and ensure comprehensive care[3].

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