Unusual Craniocerebral Penetrating Injury: Case Illustrations

Nadir Kronioserebral Penetran Yaralanma: Olgu Sunumları

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Abstract: Missile injuries to the head account for the majority of penetrating wound of the brain. Low-velocity penetrating cranial injuries excluding gunshot wound are seen infrequently in civilian practice. Most cases result from industrial accidents, criminal assaults and self-inflicted injury.
This report deals with an interesting type of craniocerebral trauma and the literature related to these unusual cases is reviewed.

Key Words: Foreign bodies, Head injury, Unusual

Özet: Ateşli silah yaralanmaları beynin penetran yaralanmalarının çoğunluğunu oluşturur. Ateşli silah dışında kalan düşük hızlı kesici ve delici alet travmalarına günlük yaşantımızda nadiren rastlanır. Ateşli silah yaralanmaları dışındaki penetran yaralanmaların çoğunluğunu iş kazaları ile intihar ve suç girişimleri oluşturur.
Bu çalışmamızda nadir rastlanılan ve ilgi çekici kranioserebral penetran travma olguları sunulmuş ve literatür gözden geçirilmiştir.

Anahtar Kelimeler: Yabancı cisim, Kafa travması, Nadir,

Case 1. A 8-year-old boy was admitted to the department of neurosurgery on December 24, 1997 with a history of penetrating trauma. He was accidentally stabbed in right parietal area with a sharp edge of a knife. When seen in the emergency room one hour later, he was drowsy and had mild left hemiparesis. Examination of the right parietal area revealed a 4 cm vertical laceration and the knife handle was visible. The skull x-ray revealed that knife blade tip had penetrated the right parietal area to a depth of 4 cm (Fig. 1). Emergency craniectomy was carried out via parietal flap. The knife was removed under direct vision. Postoperative CT showed a right parietal intracranial air and area of small cerebral contusion after 3 weeks later (Fig. 2). He had minimal hemiparesis on his left side at follow-up examination 8 months postoperatively.

Case 2. A 4-year-old boy was admitted to the department of neurosurgery on February 14, 1994 with a history of penetrating trauma. When he was playing in the garden of the flat the fire tongs fell

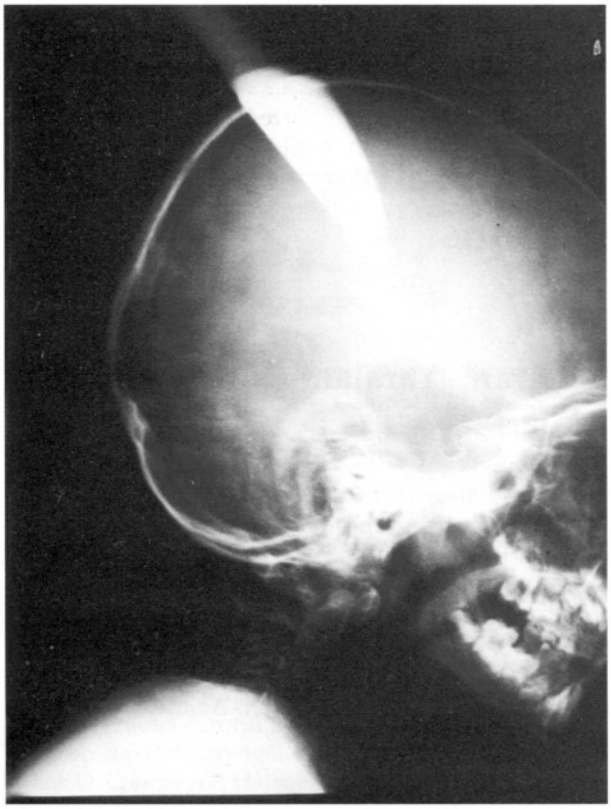

Fig. 1: (Case 1): Lateral skull x-ray showing the knife blade in the right parietal area before removal.

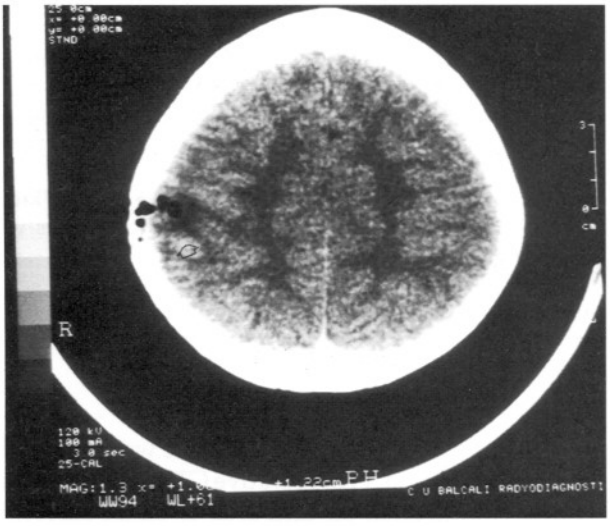

Fig. 2: (Case 1): A Postoperative CT scan showing a right parietal intracranial air and area of small cerebral contusion.

down to the right parieto-occipital area from the sixth floor. The patient was immediately transferred to our clinic. He was alert and cooperative. Neurological examination was normal. Examination of the right parieto-occipital area revealed a 3 cm vertical laceration and the fire tongs were visible (Fig. 3). Emergency craniectomy was carried out via parietal flap. The fire tongs removed under direct vision. Postoperative CT scan showed a parieto-occipital hypodens lesion (parieto-occipital encephalomalacia) after 8 months later (Fig. 4) and recovery was complete.

Fig. 3: (Case 2): The fire tongs tip in the right parieto-occipital area before removal.

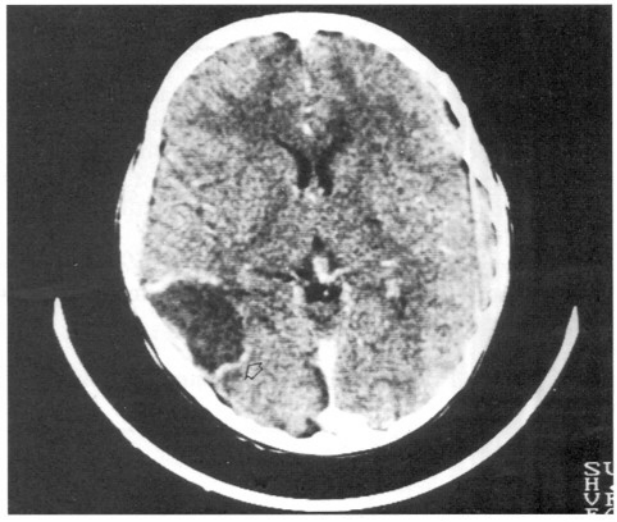

Fig. 4: (Case 2): A Postoperative CT scan showing area of right parieto-occipital encephalomalacia.

Missile injuries to the head account for the majority of penetrating wound of the brain. Low-velocity penetrating cranial injuries excluding gunshot wound are seen infrequently in civilian practice. Most cases result from industrial accidents, criminal assaults and self-inflicted injury (2-5). Scalp and skull injuries from firm, pointed objects

encountered in childhood, however, are relatively common. Due to the thinness of the incompletely ossified pediatric skull, seemingly minor injuries may be associated with violation of the dura and brain (1).

In the two cases reported here, emergency neurosurgical evaluation and exploration permitted complete recovery without delayed complications.

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REFERENCES

1. Dujovny M, Osgood CP, Maroon JC, Jannetta PJ: Penetrating intracranial foreign bodies in children. Journal of Trauma 15; 981-986, 1975
2. Greene KA, Dickman CA, Smith KA, Kinder EJ, Zabrammski JM: Self-inflicted orbital and intracranial injury with a retained foreign body, associated with psychotic depression: Case report and review. Surg Neurol 40; 499-503, 1993
3. Hansen JE, Gudeman SK, Holgate RC, Saunders RA: Penetrating intracranial wood wounds: clinical limitations of computerized tomography. J Neurosurgery 68; 752-756, 1988
4. Ildan F, Bağdatoğlu H, Boyar B, Doğanay M, Çetinalp E, Karadayı A: The nonsurgical management of a penetrating orbitocranial injury reaching the brain stem: Case report. Journal of Trauma 36; 116-118, 1994
5. Kelly AJ, Pople I, Cummins BH: Unusual craniocerebral penetrating injury by a power drill: Case report. Surg Neurol 38; 471-472, 1992

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Gunshot injury to the head and spine.

Rosenfeld JV.

The most important predictive factor is the post-resuscitation Glasgow Coma Score (GCS). Early aggressive resuscitation, surgery and vigorous control of intracranial pressure offers the best chance of achieving a satisfactory outcome. The indication for acute spinal cord decompression is deteriorating neurological status. Steroids are not indicated for these injuries.