An unusual case of penetrating intracranial injury due to scissors

Bülent Eren[1], Selçuk Çetin[2], Nursel Türkmen[2], Okan Akan[1], Murat Serdar Gürses[2], Ümit Naci Gündoğmuş[3]

[1] Council of Forensic Medicine of Turkey, Bursa Morgue Department, Bursa, Turkey
[2] Uludağ University Medical Faculty, Forensic Medicine Department, Council of Forensic Medicine of Turkey Bursa Morgue Department, Bursa, Turkey
[3] İstanbul University, Forensic Medicine Institute, Council of Forensic Medicine of Turkey, İstanbul, Turkey.

SUMMARY
Craniocerebral penetrating non-missile injuries caused by metallic foreign bodies are uncommon events. Healthy 10 year-old boy applied to the hospital emergency service with his parents. Family members stated that the scissors have been stalled his head accidentally by his sister when they had played together. During physical examination the scissors located on left parietal region of the head was examined. There was no loss of consciousness and oriented with normal vital signs. Radiological investigation demonstrated a hyper dense foreign body (scissors) penetrating cranial cavity and ended before reaching posterior region of the left parietal lobe. To our knowledge, the presented was rare case of intracranial penetrating scissor, which was not removed until, injured, reached the hospital. Our goal was to discuss the rare case of penetrating non-missile foreign body cranial injury from medico legal aspect.

Keywords: penetrating injury – scissors – head injury – forensic science

Neobvyklý případ penetrujícího intrakraniálního poranění způsobeného nůžkami

SOUHRN
Nestřelná kraniocerebrální penetrující poranění způsobená kovovými cizími tělesy nejsou obvyklá. Na pohotovost byl rodiči přiveden jinak zdravý 10 letý chlapec. Rodiče tvrdili, že k poranění nůžkami došlo náhodně při hře se sestrou chlapce. Nůžky byly lokalizovány v pravé parietální krajině. Chlapec byl normálně orientován, při vědomí. Radiologické vyšetření prokázalo hyperdenzní cizí těleso (nůžky) penetrující do dutiny lební dosahující k zadní části levého parietálního laloku mozku. Diskutujeme tento vzácný případ kraniálního poranění cizím tělesem ze soudně lékařského hlediska.

Klíčová slova: penetrující poranění – nůžky – poranění hlavy – forenzní medicína

Soud Lek 2013; 58(2): 29–30

Craniocerebral penetrating non-missile injuries caused by metallic foreign bodies are uncommon among the civilian population (1-3). These injuries have been mostly due to industrial accidents in industrial fields or criminal activities (2,4,5). Although intracranial cavity enclosed by the cranium which is consisting of rough bony structure and this type of injuries are very rare, penetrating non-missile injuries caused by metallic foreign bodies can be seen like the other body cavities. Nails, knives, screwdrivers, sewing needles, scissors, bullets, vice clamp and shrapnel have been described related to penetrating brain injury (1,6,8-10). We present a case of craniocerebral trauma due to scissors that penetrated intracranial cavity without dural injury.

✉ ***Correspondence address:***
Dr.Bülent Eren
Council of Forensic Medicine of Turkey
Bursa Morgue Department
Osmangazi, Heykel, 16010, Bursa, Turkey.
Tel: +90 224 442 84 00 / 1632; +90 224 222 03 47
Fax: +90 224 442 91 90; +090 224 225 51 70
e-mail: drbulenteren@gmail.com

CASE REPORT

A previously healthy 10 year-old male applied to hospital emergency service with his parents. Family members stated that the scissors have been stalled his head accidentally by his sister when they had played together. During physical examination the scissors which located on the posterior of left parietal region of the head was observed. There was no loss of consciousness and oriented with normal vital signs. No other apparent injuries and neurological deficit symptoms were defined. A cranial lateral X-ray and cranial computed tomography (CT) demonstrated a hyper dense foreign body (scissors) penetrating cranial cavity and ended before reaching posterior region of the left parietal lobe (Image 1,2 and 3). He was admitted to the neurosurgery department after the initial physical, neurological and radiological examination and surgical exploration of the wound was performed under general anesthesia. After the skin incision, the scissors removed with the craniectomy material which was 2x1 cm in size. Dural or cerebral laceration underneath of the injury was not inspected. At the end of the operation, a plastic drain was placed under the skin and the incision closed with sutures. He was discharged from hospital on 8th day post-surgery. Subsequent physical and neurological examinations, performed at the neurosurgery polyclinic and Bursa Branch of the

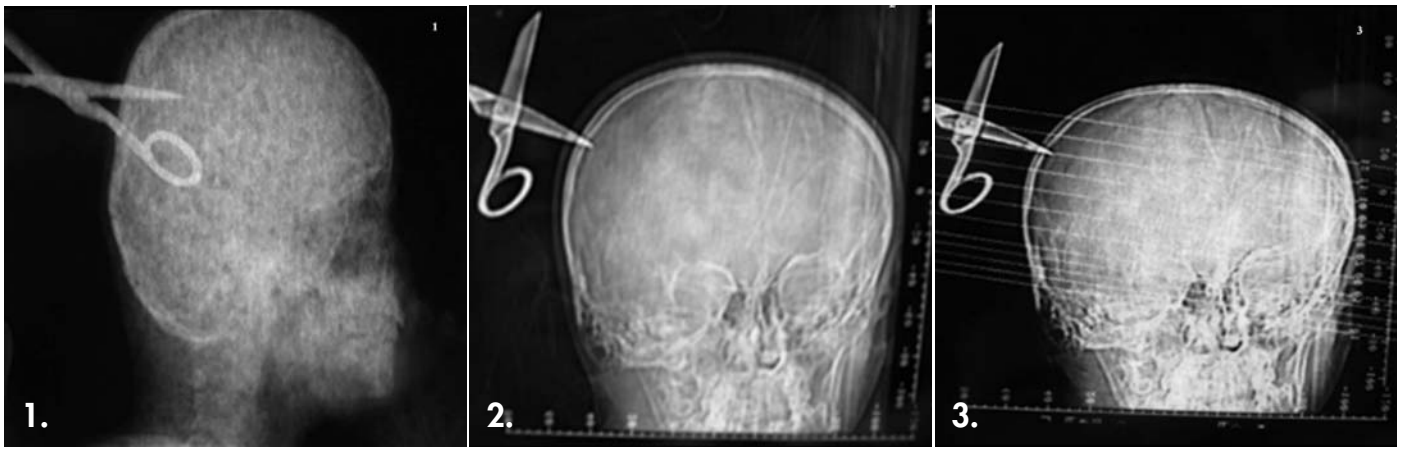

Figure 1,2,3 Cranial lateral X-ray(Figure 1) and cranial computed tomography (CT) (Figure 2,3) demonstrated a hyper dense foreign body (scissors) penetrating cranial cavity and ended before reaching posterior region of the left parietal lobe.

Council of Forensic Medicine of the Ministry of Justice, were unremarkable except for 6 cm in length surgical scar on the left postparietal region and craniotomy defect which was 2x2 in size. We presented a case of craniocerebral trauma due to scissors that penetrated intracranial cavity without dural injury and it is discussed with a review of the literature.

DISCUSSION

Penetrating brain injuries caused by non-missile low velocity objects are infrequent and include violence, industrial accidents and accidents during childhood, and suicide attempts (1-5). High mortality rates in early injury period among cases similar to our case with intracerebral hemorrhage, brain contusion, and major vascular injuries were reported. Various foreign bodies have been described related to penetrating the cranium such as nails, knives, screwdrivers, sewing needles, scissors, bullets, and shrapnel (1-10). A case which was caused by deliberate stabbing on the head and injury was aggravated by an attempt to remove the scissors, causing the breakage of the proximal blades, has been presented in the literature (1). To our knowledge, the presented was rare case of intracranial penetrating scissor, which was not removed until, injured, reached the hospital. Although penetrating brain injury due to scissors is rare and produce a limited local injury, it may lead to fatal consequences because of the damage to the critical intracranial structures. These types of foreign bodies usually associated with vascular damage because of their sharp property (9-10). However, penetrating brain injuries, were occurred by metallic foreign bodies, can result in from trivial clinical status to severe sequel. In the presented case the scissors damaged only full coats of the parietal bone without cerebral or dural injury. Caution should be exercised even if there is no significant injury on the critical intracranial structures because of the possibility of contamination by rust or other infectious agents. Additionally, the scissors were not attempted to remove by family members until they had reached the hospital and this imperturbable approach prevented to occur additional injuries.

Case was presented in 22nd IALM Congress, Istanbul, 5-8 July 2012.

LITERATURA

1. **Kumar A, Pandey R, Singh K, Sharma V.** Scissors in brain: an unusual presentation of tribal culture in India. *Turk Neurosurg* 2011; 21(3): 413-417.
2. **Gökćek Ç, Erdem Y, Köktekir E, Karatay M, Bayar MA, Edebali N, Kilić C.** Intracranial foreign body. *Turk Neurosurg* 2007;17(2):121-124.
3. **Greene KA, Dickman CA, Smith KA, Kinder EJ, Zabramski JM.** Self-inflicted orbital and intracranial injury with a retained foreign body, associated with psychotic depression: case report and review. *Surg Neurol* 1993; 40(6): 499-503.
4. **Bakay L, Glasauer FE, Grand W.** Unusual intracranial foreign bodies. Report of five cases. *Acta Neurochir (Wien)* 1977; 39(3-4): 219-231.
5. **Pascual JM, Navas M, Carrasco R.** Penetrating ballistic-like frontal brain injury caused by a metallic rod. *Acta Neurochir (Wien)* 2009; 151(6): 689-691.
6. **du Trevou MD, van Dellen JR.** Penetrating stab wounds to the brain: the timing of angiography in patients presenting with the weapon already removed. *Neurosurgery.* 1992; 31(5): 905-11; discussion 911-912.
7. **Kjelland C, Thirsk W.** Penetrating craniofacial trauma from a vice clamp: case report and discussion. *CJEM* 2011; 13(1): 57-61.
8. **Cemil B, Tun K, Yiğenoğlu O, Kaptanoğlu E.** Attempted suicide with screw penetration into the cranium. *Ulus Travma Acil Cerrahi Derg* 2009; 15(6): 624-627.
9. **Mihailovic Z, Savic S, Atanasijevic T.** Firearm suicide committed using an unusual combination of tandem missiles: a bullet, a nail, and a screw. *Am J Forensic Med Pathol* 2007; 28(3): 220-222.
10. **Fox JL, Branch JW.** Intracranial nail-sets: an unusual selfinflicted foreign body. *Acta Neurochir (Wien)* 1971; 24: 315-318.