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Intracranial and chest bullets retained for 35 years - "luck's always to blame"

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Abstract

Head gunshot injures are usually fatal. Elderly patients may have survived penetrating head injuries, since old bullets with lower velocity produce much less damage to brain tissue. We report a case of elderly male patient with mild head injury due to accidentally fall. Patient died a few hours after admission to Emergency Department. Autopsy finding showed one strayed projectile in the posterior horn of left lateral ventricle and one in the soft tissue of right VIII intercostal space. Later we obtained information that patient suffered multiple gunshot wounds about 35 years earlier. However, the cause of death was deterioration of long-term and severe hypertensive and atherosclerotic heart disease.

Key words: gunshot injury; head injury; chest injury

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Projektili zaostali u glavi i grudnom košu 35 godina – "kriva je sreća"

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Apstrakt

Povrede glave u vidu ustreline najčešće su smrtonosne povrede. Pacijenti su ranije preživljavali ustrelne povrede glave, jer su tada korišćeni projektili sa manjom brzinom nanosili i manje oštećenje tkivu mozga. Prikazujemo slučaj starijeg muškarca koji je zadobio blagu povredu glave prilikom zadesnog pada. Pacijent je umro nekoliko sati nakon prijema u odeljenje za hitne slučajeve. Nalaz obdukcije pokazao je jedan zaostali projektil u zadnjem rogu leve bočne komore i jedan u predelu mekih tkiva desnog VIII međurebarnog prostora. Naknadno je dobijena informacija da je pacijent zadobio višestruke ustreline oko 35 godina ranije. Međutim, uzrok smrti bio je pogoršanje dugotrajnog i teškog srčanog oboljenja na bazi povišenog krvnog pritiska i ateroskleroze.

Ključne reči: ustreline; povrede glave; povrede grudnog koša

Introduction

Today, gunshot injury to the head is usually fatal, due to the destructive energy of high-velocity missiles¹. However, elderly citizens may have survived penetrating head injuries, since old bullets with lower velocity produce much less damage to brain². Transmediastinal and thoracic gunshot wounds are also highly lethal injuries requiring thoracotomy surgery in most cases. We present a case of elderly male patient suffering from dementia, presented to the Emergency Department (ED) following head injury due to accidentally fall, three days earlier. No signs of head or body gunshot wounds were noticed. Patient died a few hours after admission to ED. Autopsy finding revealed one strayed projectile in the posterior horn of left lateral ventricle and one in the soft tissue of right VIII intercostal space. Later we obtained information that patient suffered multiple gunshot wounds 35 years earlier. However, the cause of death was deterioration of long-term and severe hypertensive and atherosclerotic heart disease.



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Case Report

A 82-years-old patient with a history of severe dementia was admitted to ED following head injury due to accidentally fall in the nursing home, three days earlier. On initial evaluation he was conscious, obeying commands with signs of dementia and spastic hemiperesis on the left side. No signs of head and body trauma were found. Patient was immediately examined by a general surgeon, neurologist and a neurosurgeon. Breath sounds were present bilaterally, and there was no evidence of subcutaneous emphysema. A chest X-ray showed a bullet in the projection of right VIII intercostal space (Figure 1). On the way to emergency trauma-all-body CT scan the patient suffered a sudden deterioration of consciousness and cardio-respiratory arrest. He was unsuccessfully reanimated, and a few hours upon admission patient died. At autopsy one strayed projectile was found in the posterior horn of left lateral ventricle (Figure 2) and one was found in the soft tissue of right VIII intercostal space (Figure 3). Both missiles were rusty and markedly corroded. The intracranial projectile was deformed (Figure 4a), while the original shape of the intercostal space bullet was preserved (Figure 4b). The bullet trajectory through the scull and brain was reconstructed: in the front third of the right parietal bone, a circular 20 mm diameter scull defect covered with thickened meninges was observed. Further on, from the upper side of the right parietal lobe of the brain at about 2 cm to the right of the median longitudinal line the channel direction extended from the top down, from right to left and from front to back through the right brain hemisphere, ending in the posterior horn of left lateral ventricle (Figure 5). The projectile found in the chest wall did not hit vital organs of the victim's thorax. No entry wound was found. Autopsy report revealed natural cause of death due to rapid deterioration of long-term and severe hypertensive and atherosclerotic heart disease. Later on, the patient's family confirmed that he suffered multiple gunshot wounds 35 years earlier. No other details were known.

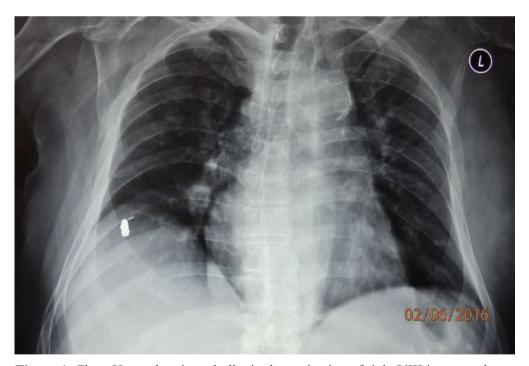


Figure 1. Chest X-ray showing a bullet in the projection of right VIII intercostal space





Figure 2. Projectile located in the posterior horn of left lateral ventricle (autopsy finding)



Figure 3. Projectile located in the soft tissue of right VIII intercostal space (autopsy finding)



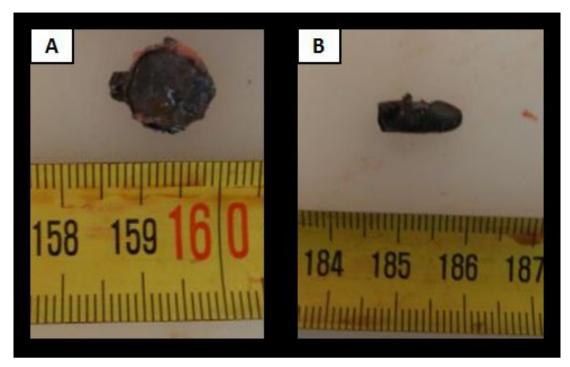


Figure 4. Deformed intracranial projectile (a). Preserved projectile from the intercostal space (b).



Figure 5. Reconstrucion of bullet trajectory through the scull and brain

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Discussion

Head gunshot injuries are one of the most deadly traumas³. About 90% of victims die before arriving at the hospital, and for those who endure and make it to the hospital, about one half die in the ED^{3, 4}. Civilian head gunshot injuries most frequently inflicted by low-velocity and small-caliber projectiles, which cause less damage than those with high-velocity projectiles used in war conditions⁵. Transmediastinal and thoracic gunshot wounds are associated with a high mortality and frequently require operative intervention via thoracotomy⁶. We present a case of a male patient who suffered two gunshot wounds, the one in the head, and one in the chest, 35 years prior to admission to ED. There was no sign of surgical intervention, and patient survived these injuries with only left sided spastic hemipersis. Penetrating wounds of the thorax caused by a gunshot or explosion are associated with multiple complications such as at electasis, obstructive pneumonitis, hemothorax or peumothorax, and local infection. The delayed complication is calcific fibrothorax. A foreign body in the pleural cavity may cause chronic empyema⁷. Our patient didn't have any signs of mentioned complications, but it should be taken into account that projectile was found in the chest wall, and not in the lung parenchyma.

There are many reports of different foreign objects retained in the brain for long time without any symptoms⁸. Complications of head injuries and retained foreign bodies can be classified as early (during the first 7 days after wounding) or late (after that period). Postoperative infections, hematomas, epileptic seizures, and cerebrospinal fluid fistulas are counted among the early complications. On the other hand, foreign body's migration, epileptic seizures, infections, hydrocephalus and rarely tumor development represent late complications⁹. Our patient only had mild spastic hemiperesis on the left side, without signs of other early and late complications.

Since both mentioned injuries are deadly in most of cases, the long term survival of our patient was an exceptional finding: "luck's always to blame" (Jean de La Fontaine).

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