An Unusual Case of Cerebral Penetrating Injury by a Driven Bone Fragment Secondary to Blunt Head Trauma

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Temple trauma that appears initially localized to the skin might possess intracranial complications. Early diagnosis and management of such complications are important, to avoid neurologic sequelae. Non-penetrating head injuries with intracranial hemorrhage caused by a driven bone fragment are extremely rare. A 53-year-old male was referred to our hospital because of intracerebral hemorrhage. He was a mechanic and one day before admission to a local clinic, tip of metallic rod hit his right temple while cutting the rod. Initial brain computed tomography (CT) and magnetic resonance imaging demonstrated scanty subdural hematoma at right temporal lobe and left falk and intracerebral hematoma at both frontal lobes. Facial CT with 3-D reconstruction images showed a small bony defect at the right sphenoid bone’s greater wing and a small bone fragment at the left frontal lobe, crossing the falk. We present the unusual case of a temple trauma patient in whom a sphenoid bone fragment migrated from its origin upward, to the contralateral frontal lobe producing hematoma along its trajectory.

Key Words: Head injury · Penetrating · Bone fragment.

INTRODUCTION

Penetrating cerebral injuries caused by foreign bodies other than bullets are relatively rare. In clinical practice, most such injuries are mostly due to industrial accidents or criminal activities. Some reports have documented penetrating injuries resulting from suicide attempts. However, most of these reports have described penetrating intracranial injuries caused by foreign bodies. We report the unique case of a non-penetrating head injury, with intracranial hemorrhage, caused by a driven bone fragment, secondary to a metallic rod tip hitting the patient’s temple.

CASE REPORT

A local clinic referred a 53-year-old male to our hospital because of intracerebral hemorrhage. He was a mechanic and a day before admission, he had been cutting a metallic rod, when the rod’s tip hit his right temple (Fig. 1A). On his arrival at our hospital, a physical examination revealed a laceration wound (Fig. 1B) on his right temporal skin, and, a baseline neurologic examination showed mild confusion and slurring of speech. The initial brain computed tomography (CT) reveals a scanty subdural hematoma at the right frontal skull base and left falk, with intracerebral hematomas at both frontal lobes (Fig. 2). Facial CT with 3-D reconstruction images showed a small bony defect at the right sphenoid bone’s greater wing and a small bone fragment at the left frontal lobe, crossing the falk (Fig. 3). To evaluate the vascular injury along the bone fragment’s trajectory, we performed a CT angiography and found no vascular injuries (Fig. 3). Patient was managed conservatively with anticonvulsant prophylaxis. A follow-up brain CT showed the resolution of the intracerebral hemorrhages and perihemorrhagic edema. The patient was discharged without any neurologic deficit on day 15 of admission.

DISCUSSION

Penetrating cranial injuries are common in warfare; however, they are rare in civilian head injuries. In clinical practice, most such injuries are due to industrial accidents, criminal activities, and suicide attempts or other self-inflicted injuries. Several reports in the literature have addressed intracranial penetrating injuries, caused by foreign bodies such as sewing needles, knives, metal bars, valve flange, nails, power drills, chopsticks, or pencils. However, only one previ-
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CONCLUSION
We present an unusual case of a patient with temple trauma, where a sphenoid bone fragment migrated from its origin upward, to the contralateral frontal lobe, producing hematoma along its trajectory. Our case emphasizes the need for careful...
clinical and radiographic examinations even when external wounds appear trivial.

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References