

# STRAY BULLET PENETRATING DEEP INTO BRAIN WITHOUT CAUSING NEUROLOGICAL DEFICIT

MIRAJ US SIRAJ

## ABSTRACT

*Bullet or missile injuries to skull and brain are not uncommon. Management of missile injury to brain and skull are described in detail in various texts available. Deep penetrating injury to the brain due to stray bullet causing no neurological deficit is exceptionally rare. This is a case of 12 years old boy who presented with stray bullet that penetrated deep into the brain without neurological deficit. He was managed conservatively and is doing well two years following injury.*

## Key words

*Stray bullet injury, Missile injury – brain, Firearms.*

## INTRODUCTION:

Physicians have been challenged by the penetrating wounds to the head since antiquity.<sup>1</sup> within a few hundred years of Mongol's bringing gun powder to Europe from China in the 1300s, a firearm was invented that could propel a projectile at 1000 ft/sec and could inflict previously unimaginable wounds.<sup>2</sup> Bullet injury to the head accounts for majority of the penetrating wounds of the brain and is responsible for a significant number of deaths. The exact data of missile injury to the brain is not known in Pakistan at present.

There are very few cases reported in medical literature regarding stray bullet penetrating into the skull and brain and even much less number of cases where bullet penetrated so deep into the brain causing virtually no neurological deficit in the patient. Herein we present one such case.

## CASE REPORT:

A 12years old boy presented in emergency department with history of loss of consciousness for five minutes. Detailed history revealed that 6 days back the boy suddenly fell unconscious on the ground after getting an injury on his skull by some hard object while playing outside his home. Blood trickled

down his face and he regained consciousness after few minutes. He was taken to a general practitioner who stitched a wound on parietal region of scalp.

On examination patient was generally well and haemodynamically stable with Glasgow Coma score (GCS) of 15/15 with no focal neurological deficit. X. rays skull (AP and Lateral) was performed which showed a bullet in his skull (Figure I, I a). He was admitted in the neurosurgery ward for observation and further investigations. CT scan of the brain showed a large bullet deep in brain, near to the midline in the medial part of left parietal lobe (Figure II). Patient was kept under neuro-observation for two weeks in the hospital. He did not develop any neurological deficit or fits or any other symptom. Patient was managed conservatively and discharged after two weeks. At two years follow up he remained well.

## DISCUSSION:

Stray bullets injuries are not uncommon in Pakistan. Most of these bullets are fired in the air at the time of wedding ceremonies. These bullets can cause serious damage to the brain with disastrous consequences. Stray bullet injuries to the brain with no neurological deficit are very rare. There is plenty of literature available on the bullet injuries in general but very few cases reported in the medical literature about stray bullets. Most of the cases are found in the newspapers.

The conservative management of penetrating bullet injuries to the brain without intracranial surgery in a selected patient population is a reasonable option.<sup>5</sup>

## Correspondence:

Dr. Miraj Us Siraj  
Department of Neurosurgery  
Foundation University Medical College & Hospital  
Rawalpindi, Pakistan.  
E. mail: musiraj@hotmail.com

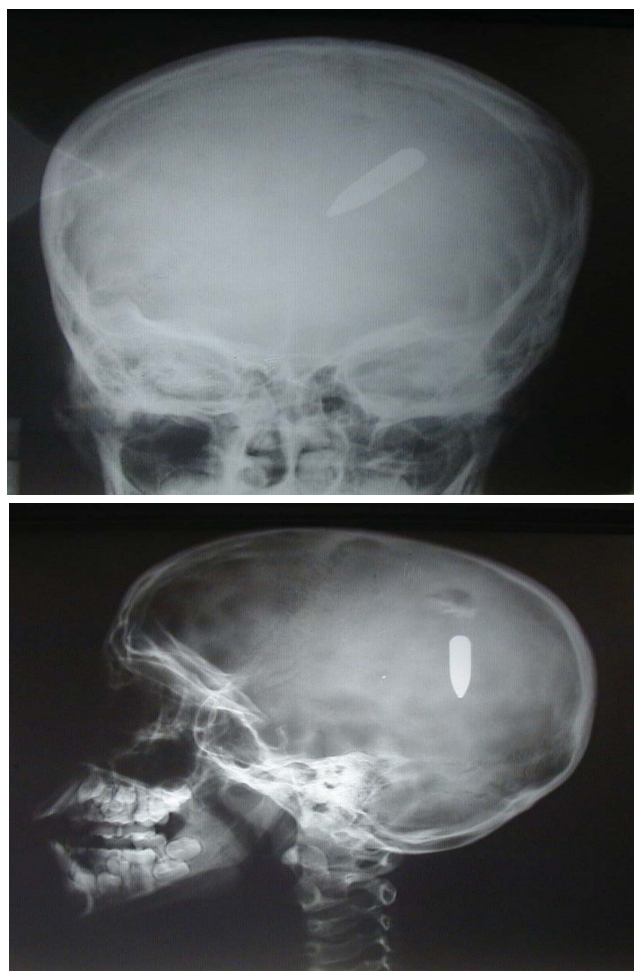


Fig-I, Ia: X-ray skull AP and Lateral views showing bullet.

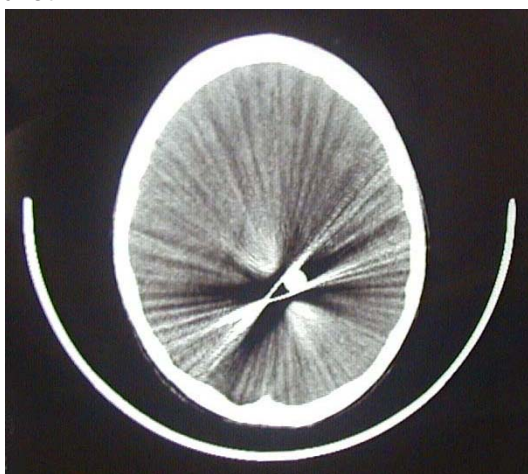


Fig-II: CT Scan showing bullet in brain tissue.

In literature there is an evidence of conservative management with a simple closure of scalp wound and the bullet left as it is in the brain.<sup>6</sup> Considering the fact that it is very difficult or sometimes impossible to remove the bullet which is deeply seated in the

brain without having catastrophic consequences pre and post operatively, our patient was managed conservatively.

This rare case highlights that modern day surgeons treating trauma patients should be aware of this condition happening and high index of suspicion should be maintained in patients presenting with bleeding scalp wound with no significant history available. Radiological investigations like plain x-ray skull should be obtained in all patients suspected of intracranial missile injuries.

#### REFERENCES:

1. Breasted JH. The Edwin Smith Surgical Papyrus. Chicago: University of Chicago Press, 1930.
2. West CGH. A short history of the management of penetrating missile injuries of the head. *Surg Neurol* 1981; 16:145-9.
3. Taha JM, Saba MI, Brown JA. Missile injuries to the brain treated by simple wound closure: results of a protocol during the Lebanese conflict. *Neurosurgery* 1991;3:380-3.
4. Singh P. Missile injuries of the brain: results of less aggressive surgery. *Neurol India* 2003;51:215-9.
5. Taha JM, Saba MI, Brown JA. Missile injuries to the brain treated by simple wound closure: results of a protocol during the Lebanese conflict. *Neurosurgery* 1991 Sep; (3):380-3; discussion 384.
6. Singh P. Missile injuries of the brain: results of less aggressive surgery. *Neurol India* 2003 51:215-9.