CASE REPORT

Recovery of Projectile Through Nose - An Unusual Presentation

Muhammad Sohail Umerani[1], Saad Ikram[2], Asad Abbas[3]

ABSTRACT

Presentation of civilian gunshot injuries, especially to the face, have increased tremendously in the past decade in Karachi. Cranio-facial region when affected has a high mortality rate because projectile may lodge anywhere in the skull. Management of these gunshot wounds demands experience and expertise. A case of 21 year old male is reported, who sustained such an injury by a stray bullet, with the projectile entering from the lateral margin of the left nasal cavity and getting lodged within. Position of the projectile was assessed via series of X-rays. The projectile was removed under direct visualization from the nasal cavity in the Emergency Room. Endoscopic approach has been discussed for removal of deeper projectiles.

KEY WORDS: *Gunshot, Projectile, Nasal Cavity, Stray Bullet.*

Cite as: Umerani MS, Ikram S, Abbas A. Recovery of projectile through nose - An unusual presentation. Pak J Med Dent 2014; 3(1):37-40.

[1] Muhammad Sohail Umerani

Registrar, Department of Neurosurgery, King Fahad Military Medical Complex, Dhahran, KSA

[2] Saad Ikram

House Officer, Department of Neurosurgery, Liaquat National Hospital and Medical College, Karachi

[3] Asad Abbas

Resident, Department of Surgery, Ziauddin University Hospital

INTRODUCTION

Gunshot injuries to the face have increased in the past decade and are a common nuisance in the city of Karachi.[1] Tissue damage in gunshot injuries is common, variable and is dependent upon the distance from which it is fired, the missile track, and the mechanics of the projectile.[2] These injuries require immediate surgical intervention for removal either through the open route, or more recently with endoscopic approach, depending upon the clinical scenario.[3,7] A case of 21 year old male is reported who sustained such an injury by a stray bullet, with the projectile getting lodged post entry from the lateral margin of the left nasal cavity. The case presents removal of a lodged projectile from the nasal cavity without resorting an invasive procedure.

CASE

A 21 year old male, presented in the Emergency Department of Liaquat National Hospital, with history of gunshot injury to the nose. The patient was resting when he was struck by a stray bullet. On examination the patient was fully alert and oriented, with no history of loss of consciousness, vomiting, headache or vertigo or visual symptoms. There was a 0.5 x 1.0 cm^2 entry wound at the lateral margin of the left nasal cavity, just above the level of the fibro-fatty tissue. No projectile protuberance could be palpated over the nose. On anterior rhinoscopy, nostril was filled with clotted blood with no evidence of active bleeding. Oral cavity was clean with only mild staining of posterior pharyngeal wall with clots. X-rays of the face, nose and paranasal sinuses confirmed a projectile lying near the floor of the left nasal cavity. After initial evaluation, the patient was shifted to minor OT for complete inspection of the nasal cavity for the retrieval of the object. Inj. Transamine 500 mg was given I/V to reduce bleeding on manipulation. Both nasal cavities were thoroughly irrigated with normal saline. After irrigation, the left cavity was examined with the help of a Thudicum Nasal Speculum and LED headlight source which revealed the projectile lying near the floor anterior to the left inferior turbinate. There was no active bleeding from the walls and the nasal septum was intact. Under direct vision, through the speculum, a Jobson Horne Probe was gently guided above the projectile bringing it down to the floor and dragged out with a swift motion. Following removal, the cavity was examined again for bleeding or evidence of damage to the cavity proper. The cavity contained a pool of clotted blood anterior to the projectile that was irrigated again. The entry wound was cleaned and dressed. The patient was kept under observation for an hour and later discharged on oral antibiotics, analgesics and a local steroid spray with instructions to follow in OPD. Four days later he was seen in OPD with good aesthetic healing of the entry wound and a normal nasal cavity.

DISCUSSION

The incidence of gunshot injuries has increased in the past decade. Much of the literature is published from military and warfare experience; nevertheless civilian gunshot wounds are common in certain populations. Civilians suffering from gunshot wounds are considered different from those in warfare due to the difference in wound contaminations and firearm ammunitions.[5]

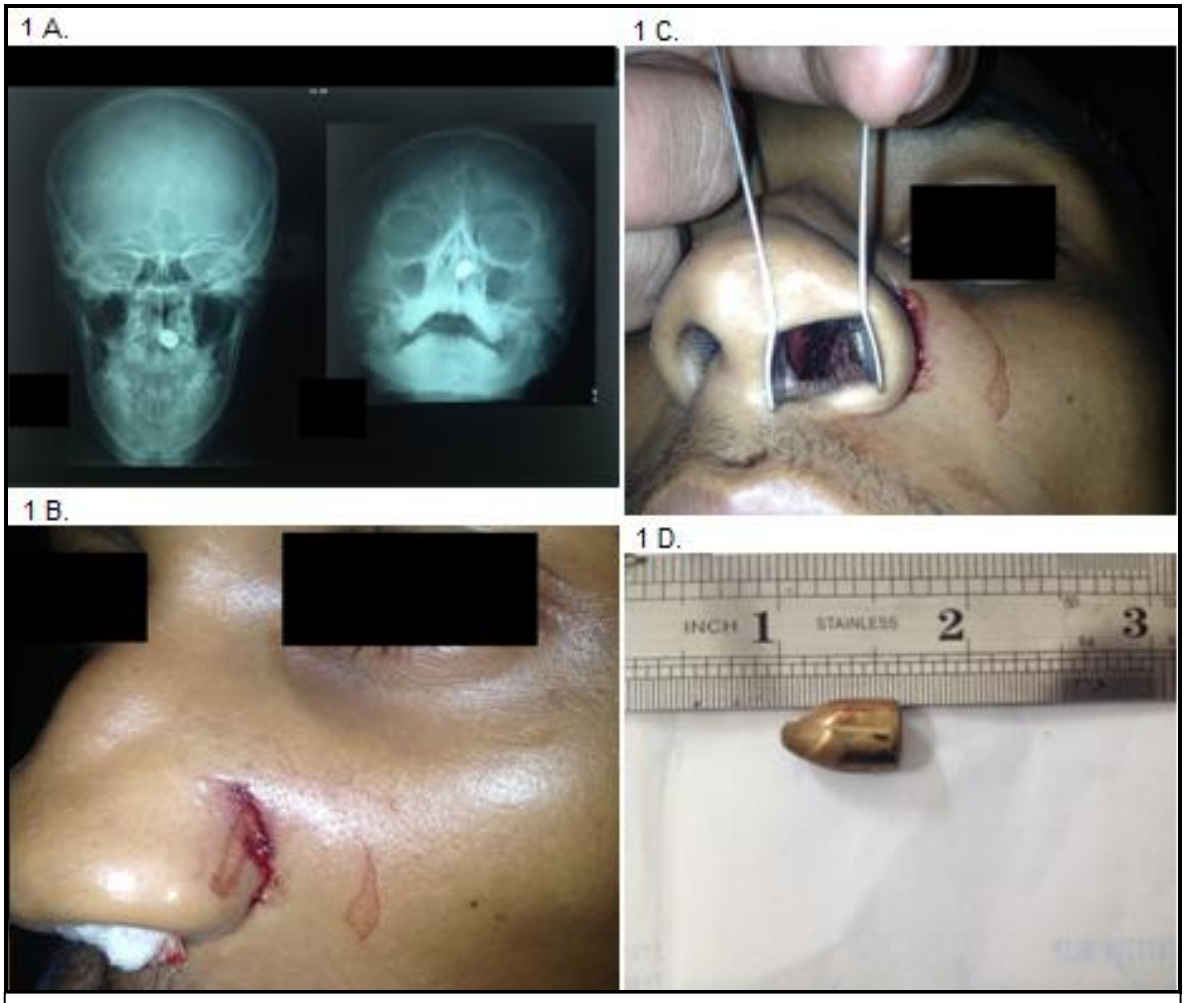
In the city of Karachi, firearms are reported to be a common source of injury.[1] This accounts to the increasing use of firearms by the inhabitants on social and cultural events.[6] Further, political strikes account for an increased number of injuries and fatalities due to gunshots in the metropolitan of Karachi.[1] The use of firearms for celebratory purposes is becoming common practice without realization of the harm stray bullets cause leading to serious injuries or death.

About 92 to 95% of the victims are males and 63 to 74% of the victims are in the age range of 20-40 years.[1,5] Retrospective studies conducted in local settings show lower limbs to be affected most commonly, closely followed by those pertaining to the abdominal region with head and neck being involved 3rd most commonly.[7] Bullet injuries to the face are reported to be more common than those to the neck.[2]

Gunshot injuries involving regions other than head and neck might present with pain, blunt or penetrating trauma, hematemesis and shortness of breath. Gunshots involving the craniofacial region however, are usually fatal.[5] Sometimes the bullet gets lodged in the cranial cavity with the paranasal sinuses being the most common

site.[8] Soft tissue injury, as in the case presented here, is reported to be the most common incident from bullets and shrapnel in the face and neck region in gunshot injuries.[2]

Figure 1: Removal of the Lodged Projectile from Nasal Cavity



1A. X-ray Face and PNS views showing lodged bullet in the left nasal cavity.
1B. Entry wound of the projectile just lateral Left nasal ala.
1C. Inspection of left nasal cavity using Thudicum Nasal speculum showing hematoma within
1D. View of the retrieved projectile

Stray bullets, fired straight into the air, are reported to have caused craniofacial injuries resulting from the kinetic energy derived from the vertical descent.[5] These can result in serious defects as the projectile can get lodged anywhere in the skull.[6] Most common site of lodgment is maxillary sinus, followed by frontal, ethmoid and sphenoid sinuses.[8] Such injuries present a challenge for management and removal due to the complex anatomy of the craniofacial region and can result in functional and anatomical deficits.[6,9] These do not always cause severe injuries provided the lodged projectile does not migrate any further into the craniofacial cavity.[3]

X-rays and CT scans have been largely used in the immediate assessment of the extent of damage and the projectile trajectory. A cone beam CT provides a higher accuracy to position the lodged projectile within the craniofacial skeleton with lesser occurrence of artifacts.[10]

Gunshot injuries to the head and neck region are complex making management difficult due to the complex anatomy of the region.[6] Craniofacial gunshot injuries resulting in damage to the

craniofacial skeleton are treated surgically. Studies indicate that early intervention, whether surgical or otherwise, resulted in favorable outcome.[3,4] Such immediate requisite for intervention is mandated to reduce the risk of complications such as secondary infections in cases of retained projectiles, wound discharge and permanent physical deformities.[4,9] High post injury complication rates are reported with infection being the most commonly reported complication.[4]

Surgical management ranges from primary wound debridement, reduction of fractures, to the removal of projectile with or without primary wound closure.[4,10] Penetrating objects to the face and neck region do not always require removal. The decision for removal of the projectile should always be guided by safety of accessibility and risk for post injury complications.

The approach for removal of retained projectiles depends upon the site of its lodgment. Literature has shown the endoscopy to be the appropriate method for removal of lodged projectiles in the paranasal sinuses, while surgery remains the preferred approach for bullet injuries within the cranio facial region. To our knowledge, soft tissue injury with the bullet lodged freely inside the nasal cavity has never been reported.

The case we discussed is peculiar in its own aspect as the projectile which was successfully removed was lying free within the nasal cavity without any contact with its boundaries. This illuminates the possibility that such stray bullets can lodge within the nasal cavity without damaging much of the soft and bony tissue and without penetrating any further, and thus providing a chance for extraction without surgical intervention.

Mass awareness regarding the consequences of stray bullets as a potential source of injury needs to be educated through media at all levels. A ban should be imposed by the government on the recreational use of firearms for the safety of general public.

REFERENCES

[1] Chotani HA, Razzak JA, Luby SP. Patterns of violence in Karachi, Pakistan. Inj Prev. 2002 Mar;8(1):57-59.

[2] Hauer T, Huschitt N, Kulla M, Kneubuehl B, Willy C. [Bullet and shrapnel injuries in the face and neck regions. Current aspects of wound ballistics]. HNO. 2011 Aug;59(8):752-64.

[3] Hussain M, Bari E. Intracerebral migration of stray bullet leading to sudden and fatal worsening. J Coll Physicians Surg Pak. 2011 Mar;21(3):182-183.

[4] Motamedi MH. Management of firearm injuries to the facial skeleton: Outcomes from early primary intervention. J Emerg Trauma Shock. 2011 Apr;4(2):212-216.

[5] Lichte P, Oberbeck R, Binnebösel M, Wildenauer R, Pape HC, Kobbe P. A civilian perspective on ballistic trauma and gunshot injuries. Scand J Trauma Resusc Emerg Med. 2010 Jun 17;18:35.

[6] Muhammad Khyani IA, Hafeez A, Farooq MU, Alam J. Endoscopic removal of bullet from orbital apex.J Coll Physicians Surg Pak. 2008 Oct;18(10):646-648

[7] Nasrullah M, Razzak JA. Firearm injuries presenting to a tertiary care hospital of Karachi, Pakistan. J Inj Violence Res. 2009 Jul;1(1):27-31.

[8] Ramdas T, Prabhakaran M, Kumar VS. Air riffle projectile in the sphenoid sinus. Int J Otolaryngol, Head and Neck Surg 1996; 1:51-52

[9] Shuker ST, Sadda R. Craniomaxillofacial falling bullet injuries and management. J Oral Maxillofac Surg. 2010 Jul;68(7):1593-601.

[10] Peled M, Leiser Y, Emodi O, Krausz A. Treatment protocol for high velocity/high energy gunshot injuries to the face. Craniomaxillofac Trauma Reconstr. 2012 Mar;5(1):31-40.