

# Retained, asymptomatic bullet in D11-D12 intervertebral disc space : A Case Report

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## Abstract

We report a 34-year-old constable, who presented with low-velocity gunshot injury in his right flank. Neuroimaging localised the bullet in the Thoracic (D) 11-12 intervertebral disc space and neurological examination found no abnormalities. The patient was managed conservatively and is asymptomatic at thirty months of follow up till date.

## INTRODUCTION

Gun shot injuries to the spine are mainly caused by suicides, accidents and assaults. These vary in proportion depending on the geographical location. Incidence of gunshot injuries perforating and being trapped within the spinal canal and intervertebral disc space is rare. Here, we present a case of gun shot injury with a bullet in the intervertebral disc space with normal neurological status at presentation and at subsequent follow ups till date.

## CASE REPORT

A 34-year-old, moderately built and nourished male constable working in the narcotics regulation department presented to the emergency room with low-velocity gunshot injury in his right flank region. The patient was conscious and physical examination revealed no abnormalities except for entry wound of the bullet on his right flank, with no exit wound. Neurological examination was found to be normal.

## Figure 1

Fig.1.Clinical photograph showing Fig.2(a,b,c) Clinical photographs showing normal range of movements at Dorso-lumbar Spine bullet entry site in right flank



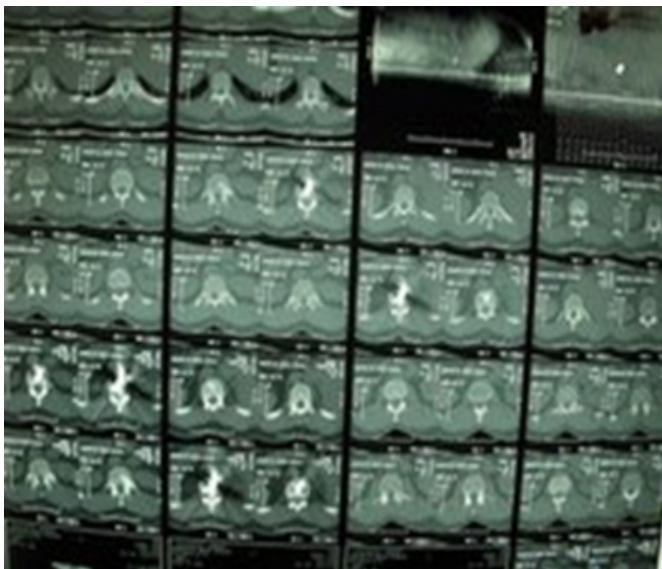
Neuroimaging with X-rays and CT scan showed the bullet, located in the D11-D12 intervertebral disc space. All routine investigations were found to be within normal limits for his age and sex. The patient was discharged after 2 days of uneventful stay in the hospital.

**Figure 2**

Fig.3. Radiograph (AP & Lat.view) showing bullet in  
Fig.4.CT Scan showing bullet in D11-D12 Intervertebral  
disc space D11- D12 intervertebral disc space



**Figure 3**



The patient on follow up till date showed no clinical symptoms or signs related to the bullet in the disc space. The repeat Radiographs and Computed Tomogram(CT) scan confirmed the bullet in its original position. Neurological examination is normal. Blood and urine lead levels are not

raised.

## DISCUSSION

The damage caused by gunshot injury can be due to direct impact of the bullet or due to its projectile fragments injuring the spinal cord or indirect injury related to tissue damage caused in proportion to the kinetic energy and the velocity of the bullet. Most of the civilian injuries are due to low velocity gunshot injury and the military injuries are high velocity injuries with relatively greater magnitude of damage. Many reports about migration of bullet from paraspinal muscles and intervertebral disc space into the spinal canal exists in the literature. Conway et al <sup>1</sup> reported a case of a bullet migrating from intervertebral disc space into the spinal canal.

The prognosis for subsequent improvement in neurological function and general condition is related with the level of spine affected. After a survey of 858 spinal cord injuries, Comarr et al <sup>2</sup> concluded that cauda equine lesions recovered more frequently than spinal cord lesions. However, Yashon et al <sup>3</sup> stated that the final outcome in spinal cord bullet injuries is correlated with initial neurological status rather than with surgery.

Our patient presented with a low velocity gun shot injury with bullet in the intervertebral disc space of eleventh and twelfth thoracic vertebrae and remained asymptomatic at follow ups. Embedded bullets in the intervertebral disc may remain clinically silent through-out life of the patients, however, it may migrate into the spinal canal or in the intervertebral disc space causing back pain and other pressure related symptoms <sup>14</sup>. Acute or chronic lead intoxication following bullet injury is uncommon; it can present with neurological, abdominal or haematological symptoms <sup>5</sup>. These incidence are rare and should probably not be used as a reason to remove all bullets. Bullet in disc space and joint is more likely to release heavy metals. Scuderi et al <sup>6</sup> found only 12 cases of bullets in disc space over a 24-year period among 238 gunshot injuries of the spine and only 1 of these 12 developed clinical signs of lead toxicity. They recommend observation for signs of lead toxicity, rather than imperative bullet removal.

Surgical management for bullet injuries is widely accepted but conservative treatment is controversial <sup>7</sup>. Surgical indications for removal of the bullet, if embedded in the surrounding bone or in the intervertebral disc space is unclear. Bono and Heary <sup>8</sup> reviewed the topic well and

commented that, one should 'do no harm'. Removal of the bullet did appear to alter the rate and incidence of neurological recovery, but there was an increased incidence of infection in the operative group. Cornwell et al , reported on 141 thoracic spine gunshot fractures and only 2 required surgical stabilisation. Removal of bullets remains controversial.

We recommend supervised neglect of patients with asymptomatic bullet/s in the intervertebral disc space and treatment of the patient in-toto rather than his/her radiographs/tomograms alone.

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