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Case Report

One year old misdiagnosed penetrating injury of sacrum with a retained knife: a case report and review of literature

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ABSTRACT

Penetrating injuries to the spine, although less common than blunt trauma from motor vehicle accidents, are important causes of injury to the spinal cord. They are essentially of two varieties-gunshot or stab wounds. Gunshot injuries to the spine are more commonly described and are associated with a higher incidence of neurological damage. On the contrary, the prognosis is better in stab wounds where surgery plays a greater role. Here we report a case of a 31 year old male with a history of penetrating injury with knife in lower back 1 year ago comes with complaints of pain and pus discharge since 2 weeks. On detailed history taking, clinical examination and investigations it was found that knife was left *in situ* which was causing symptoms. Surgical exploration was done. Foreign body (knife) was removed keeping all the neurovascular complications in check. Post operatively patient is doing good with no neurological deficits. A timely intervention in removing foreign body is necessary for preventing for complications.

Keywords: Knife, Gunshot, Stab wound

INTRODUCTION

Penetrating spinal injuries (PSI) have been on the rise recently. Non-missile penetrating spinal injury (NMPSI) is rare accounting for 0.3-2.1% of spinal injuries in western population studies.[1-3] The tendency of the assailants to attack the neck or chest of the victim explains the incidence of NMPSI in various spinal regions, most commonly involving the thoracic region (54-63%) followed by cervical region (27-30%) and lumbosacral region (7%).[4] Here we encountered a case of 31 year old male with a history of penetrating injury with knife in lower back 1 year ago comes with complaints of pain and pus discharge since 2 weeks. On detailed history taking, clinical examination and investigations it was found that knife was left *in situ* which was causing symptoms and hence, we reviewed the current literature in order to outline the current management protocol.

CASE REPORT

A 31-year-old male patient, resident of Kota came to an OPD at 10 am with complaints of pain and pus discharge from lower back for 15 days. On taking detailed clinical history he revealed that there was a history of assault 1 year back with a knife stabbed in his lower back following which he was rushed to nearby hospital and managed in emergency. X-ray of pelvis with bilateral hip joint anteroposterior view was advised as routine. Due to shadow of keys present in his pockets the penetrating knife in the sacrum was misdiagnosed as an artefact, and hence the knife remained *in situ*. wound wash and closure were done on emergency basis. Patient discharged on the next

day after completing all medicolegal procedure. Sutures were removed on 14th day. Skin and suture line was healthy. Patient has no residual complaints. Patient resumed his normal daily routine activities. Now patient is reporting with above complaints.

On examination there was a sinus tract with a purulent pus discharge from his lower back region. There was no associated abnormality in lower back. Patient was advised for an X-ray pelvis with bilateral hip both anteroposterior and lateral view. X-ray suggested of a metallic object of 9 cm in length, and 3 cm breadth approximately (Figure 1) piercing the sacrum. CT scan was done and similar findings were noted (Figure 2). After detailed history taking, clinical examination and radiological correlation it was diagnosed as an old penetrating sacral injury with retained knife *in situ* with infection with no associated neurological deficit. Patient was admitted and planned for surgery. Patient was taken to OT, under spinal anaesthesia patient was kept in prone position (Figure 3). After scrub, painting and draping was done. Wound debridement with surgical exploration and foreign body removal was done through posterior approach. Keeping all the neurovascular complications in check. On examination dura found intact. A knife 9 cm in length, and 3 cm in breadth removed. Pus sent for culture and sensitivity. Knife was handed over to forensic department. Post operative anti-biotics were started. Patient was mobilised on post op day 1. there were no sensory or neurological deficits postoperatively. Patient was discharged on post op day 3 after clean and sterile dressing. Post op X-ray (Figure 5) and MRI (Figure 6) was done. MRI suggestive inflammatory changes. On post-op follow up after 14 days, skin and suture line were healthy, sutures removed with clean and sterile techniques. Patient is doing good.

Figure 1: Pre-op X-ray.

Figure 2: CT scan showing radiopaque metallic object.

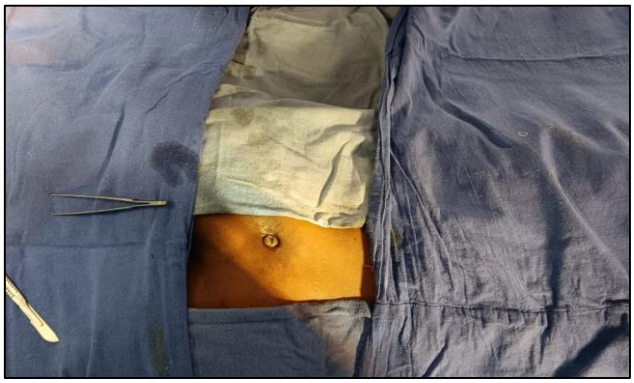

Figure 3: Prone positioning of patient.

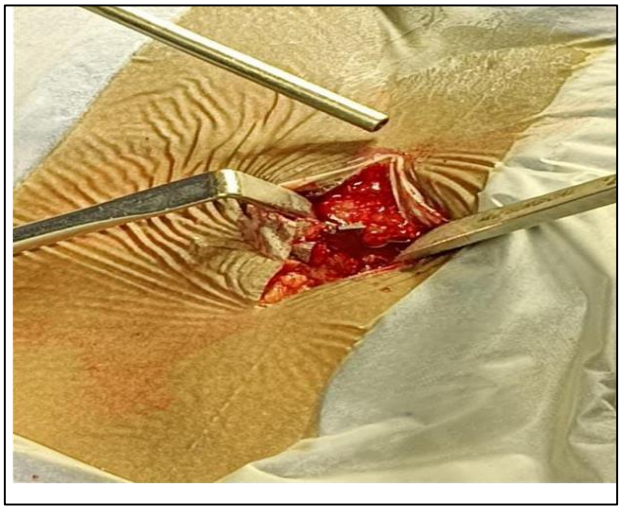

Figure 4: Surgical exploration with posterior approach.

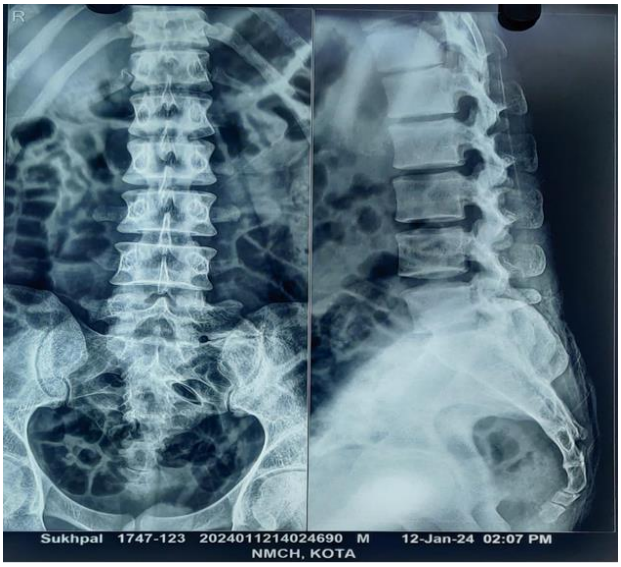

Figure 5: Post op x-ray.

Figure 6: T2 STIR show hyperintensity in left sacral ala as post operative changes.

Figure 7: Removed knife.

Figure 8: Patient walking comfortably on post op day 3.

This study presents an extremely rare case of old misdiagnosed sacral penetrating injury with a metallic object (knife) left *in situ*. The surgical removal of the foreign body is recommended as soon as possible. In these cases, meticulous repairing of torn dura matter, fascia and subsequent control of infection must be the key for surgery to prevent further complications like meningitis.

DISCUSSION

Foreign bodies in the soft tissues are extremely frequent especially in hand and foot. Needles, nails, thorns, glass and stone are commonly embedded. Acutely a laceration or a puncture may not reveal a foreign body, chronically a laceration or a puncture may heal but may be sensitive to touch on palpation. Occasionally, foreign body becomes walled off from the surrounding tissue and forms an inclusion cyst. Unless, the foreign body is easily palpable or visible, conditions should be optimised to remove it. For foreign bodies that are visible through radiographs C-arm is helpful. For other radiolucent materials Ultrasound guidance is helpful. If the foreign body cannot be located it is also acceptable to leave the wound open treat the patient with antibiotics, and allow the body to localise the foreign body by forming a capsule around it. Then the foreign body can then be removed electively with the tissue reaction pointing the location.[5] Consequently, the decision regarding the optimal course of management has remained contentious.[6-8] Most authors advocate for surgical exploration with the aim to repair any obvious injury, relieve spinal cord compression and debride foreign material that could lead to an infection or other complications.[9-14] Our case is unique due to several reasons, it is a misdiagnosed case of 1 year old foreign body injury to spine left *in situ* without showing any symptoms.

CONCLUSION

With adequate imaging technique and clinical examination such retained foreign body can be detected earliest. In above text we have mentioned the treatment for removal of old retained foreign body in sacrum without any neurological deficit post operatively. With the above-mentioned surgical technique, we can manage retained foreign body with good postop results.

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