

## CASE REPORT

# An Interesting Piercing Injury of the Hip with a Steel Bar

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## Abstract

Foreign body injuries are not uncommon. Foreign body penetration may occur in almost any part of the body. A piercing or penetrating injury of the hip or pelvis by a steel bar is a rare condition compared with the extremities. Our study aims to highlight this interesting injury and its treatment. We report the case of a 19-year-old man who was working in a construction when he fall that resulted in the piercing of the hip with a long steel bar and our treatment strategy. The patients achieved good results without neurovascular injury. Our study highlights that intervention should be done at operating room in case we confront any neurovascular injury and its complications.

**Key words:** Foreign body, piercing injuries,; hip, treatment strategy.

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## Introduction

Foreign body injury was most frequently in the foot and the hand and most commonly seen in young ages (Nagendran, 1999; Salati and Rather, 2010). Foreign bodies may be composed of different materials such as metal, glass, wood, plastic, etc. (Hunter and Taljanovic 2003; Rubin et al., 2010). A piercing or penetrating injury of the hip or pelvis by a steel bar is a rare condition compared with the extremities. We report the case of a 19-year-old man who was working in a construction when he fall that resulted in the piercing of the hip with a long steel bar. The steel bar entered the hip from the posteromedial aspect of the left hip through adductor muscles and gluteus maximus muscle near from the sciatic nerve and away from the femoral neurovascular bundle. It was away from the pelvic cavity, bladder and rectum. Nearly 20 cm. of the bar spanned in a posterolateral direction and didn't exit the body. Luckily it wasn't damaged femoral neurovascular bundle or the sciatic nerve.

**Case Report**

A 19-year-old man was admitted to the emergency department of our hospital with a piercing injury to his hip. The patient had fallen from the second floor of the construction he was working and he was impaled on a steel bar at ground level. The rod-like steel bar, approximately 150 cm long and 3cm thick, penetrated his left hip from the posteromedial aspect and entered the hip through adductor and gluteus maximus muscles near to the sciatic nerve and away from the femoral neurovascular bundle (Figure 1). We report our treatment strategy at this injury.



**Figure 1.** Patient's photographs when he came to the emergency department.

Radiological studies of the pelvis and lower limbs revealed that the steel bar spanned in a posterolateral direction nearly 20 cm and didn't exit the body (Figure 2). Luckily it wasn't damaged femoral neurovascular bundle or the sciatic nerve and there was no fracture of any side of the pelvis. In the emergency room tetanus vaccination was performed without immunization and a broad-spectrum antibiotic was prescribed.



**Figure 2.** Radiographs of the steel bar which spanned in the posterolateral direction nearly 20 cm and didn't exit the body.

For removing the deep-seated steel bar in the operating theater we made the operation under general anesthesia so as not to injure the surrounding organs during removal (Fig. 3). We removed the bar slightly when we ensure that no pelvic cavity, bladder and rectal injury had occurred. The muscles penetrated by the steel bar were irrigated and the skin was repaired. After the operation the patient's hip movements were full at any direction. After 10 days rest he was able to work.



**Figure 3.** Postoperative photographs of the patient and the steel bar.

**Discussion**

Foreign bodies may be composed of different materials. Piercing or penetrating injuries of the pelvis and hip joint are rare but can lead to catastrophic neurovascular or internal organ injuries (Franko et al., 1993). The iliac vessel, sacral plexus, sciatic nerve, female genital organs and femoral and popliteal neurovascular bundles are likely to be affected at the time of injury or during removal of the foreign body (Wang et al., 2009). We find only one case about a long steel bar penetrating the pelvis and bending toward the extremities in the literature (Lee et al., 2012). No other reports of patients without neurovascular deficit after sustaining this type of injury of extremities have been published. Our case was not complicated with neurovascular deficits or fracture of the pelvis. The treatment we advocated was in keeping with the guidelines used for any retained foreign body remove foreign body, irrigate its tract, provide systemic antibiotic (Grobbelaar and Knottenbelt, 1991). After the foreign body is removed, debridement and copious irrigation should be performed to remove any residual foreign matter. In this case to avoid unnecessary morbidity, deep dissection into the bar tract was not attempted. Timely removal of the steel bar with scopy and prompt introduction of intravenous antibiotics also

guided our decision not to perform a deeper dissection. If we confronted with more complicated type of this injury, a team comprising a general surgeon, a gynecologic surgeon, and an orthopedic surgeon should be assembled to remove the object and treat any potential complications (Bergeron et al., 2015). It also should be noted that hip joint arthrotomy or expanded exposure for removal of the bar from the hip joint can result in surgical morbidity (Lee et al., 2012). Therefore, we attempted to remove the bar slightly from the hip in case of any neurovascular complication.

### Conclusion

Our study highlights that intervention should be done at operating room in case we confront any neurovascular injury and its complications.

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**Informed Consent:** Necessary information using the patient information form and consent form was taken from the patient.

**Peer-review:** Externally peer-reviewed.

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