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# Unusual Foreign Body (Bone) In An Open Fracture Of The Femur- A Rare Case Report

N.S. Gudi Professor & Head of Department, Dept. of Orthopaedics, Sri Devaraj Urs Medical College Kolar

Virender Chaudhary Dept. of Orthopaedics, Sri Devaraj Urs Medical College Kolar

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**Keywords:** RTA (road traffic accident), open injury, open reduction and internal fixation, intramedullary interlocking femoral nail, foreign body.

## Abstract

Loss of bone following open fractures is common. Most often bone is lost on the road side and become unusable. The gap so formed also becomes a problem during management. We present a case report of a patient who had an open femur fracture with bony fragments embedded in the soft tissue of thigh and another patient with type III C fracture of the distal 1/3 of the right femur with bone loss and vascular injury. Both patients had history of RTA between collision of two 2- wheelers resulting in these two victims with open injuries

## Case Report

Two patients were received in casualty department in the early hours. One of the patients had sustained open type III C injury of the right distal 3<sup>rd</sup> femur. He had decreased SPO2 in the injured limb (less than 70%). We suspected a vascular injury which was confirmed by an Arterial Doppler Study. This patient was referred immediately to a center with vascular surgery facilities.

The other patient, a thirty year old male, sustained an injury to right hand, wrist, and thigh. There were no signs and symptoms of head injury.

Publication



## Description Of Open Wounds

Cut lacerated wound of about 6x2 cm over anterolateral aspect of the distal 3<sup>rd</sup> right thigh exposing the muscle and fracture site. Cut lacerated wound 3x1.5 cm over the lateral aspect of the right thigh 2cm above the previously described wound. No distal neurovascular deficit was found (SPO2 more than 90%).

The patient's radial pulse rate was 100/min; blood pressure was 120/80mm Hg. The GCS score was 15/15.

Clinically and radiographically the patient had sustained the following injuries:

Right hand: undisplaced fracture of the proximal phalanx of the right index and middle finger.

Right wrist - comminuted displaced fracture of the distal end of the radius with fracture of the ulnar styloid.

Right femur: transverse displaced fracture of the mid 3<sup>rd</sup> shaft with two bony fragments near the distal 3<sup>rd</sup> of femur.

Chest, abdomen and pelvis revealed no injuries clinically and radiologically.

The right lower limb was initially splinted in a Thomas splint.

The patient's condition was stabilised in the emergency room by IV fluids, blood transfusion and analgesics. Thorough wound wash was given with normal saline and sterile dressings were applied. The patient was taken up for wound debridement and stabilisation of the right femur with plan for open reduction and internal fixation with intramedullary inter locking femoral nail. Per operatively reduction was achieved with no evidence of earlier anticipated bone loss at the fracture site.

Then the bone fragments found in the wound of the patient's thigh were extracted. They did not fit at any site in the operated bone. The whole limb was scanned through imaging and no where any bone defect was found. There was no limb length discrepancy.

In retrospection this bone fragment could have been of his companion who also sustained open type III C fracture of the distal 3<sup>rd</sup> right femur with bone loss in the same RTA.

These bone fragments could have been impaled in to the patient's thigh through another wound during the collision. The bone fragments were removed and the procedure of IMIL nailing was performed.

Post operatively the operative wound healed uneventfully and the patient was ambulated in due course of time.



## Discussion

Impalement of sharp metallic objects entering and exiting through the skull<sup>1</sup>, chest<sup>2</sup>, spine<sup>3</sup> have often been reported in the literature and highlighted in the lay press also.

Foreign body contamination of open fractures is very common. The contamination is more often with dust, leaves, wooden and metallic pieces. These often dictate immediate wash and wound debridement. Microscopic foreign material may evidence the chances of infection in these open injuries.

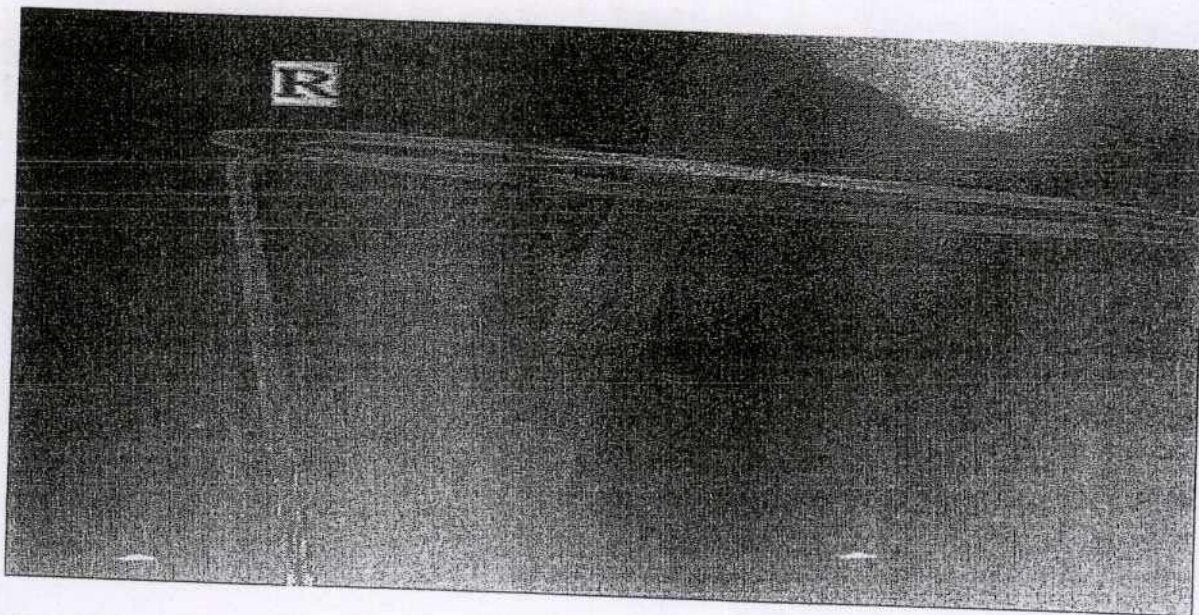
Proper identification of the penetrating object/ foreign body is key in preventing infection. The need to identify severity of penetration is important in initiating the proper treatment. The deeper the foreign body penetration, the more aggressive the treatment protocol. It is important to institute proper tetanus prophylaxis or a booster if required. Special attention is recommended to rule out foreign body material in the presence of penetrating pain or discomfort<sup>4</sup>.

Missing the foreign bodies is not uncommon and this entity is deemed as one of the major causes of medical litigations<sup>5</sup>.

Here we report a patient with impalement of bony fragment of a companion in the same RTA through a wound.

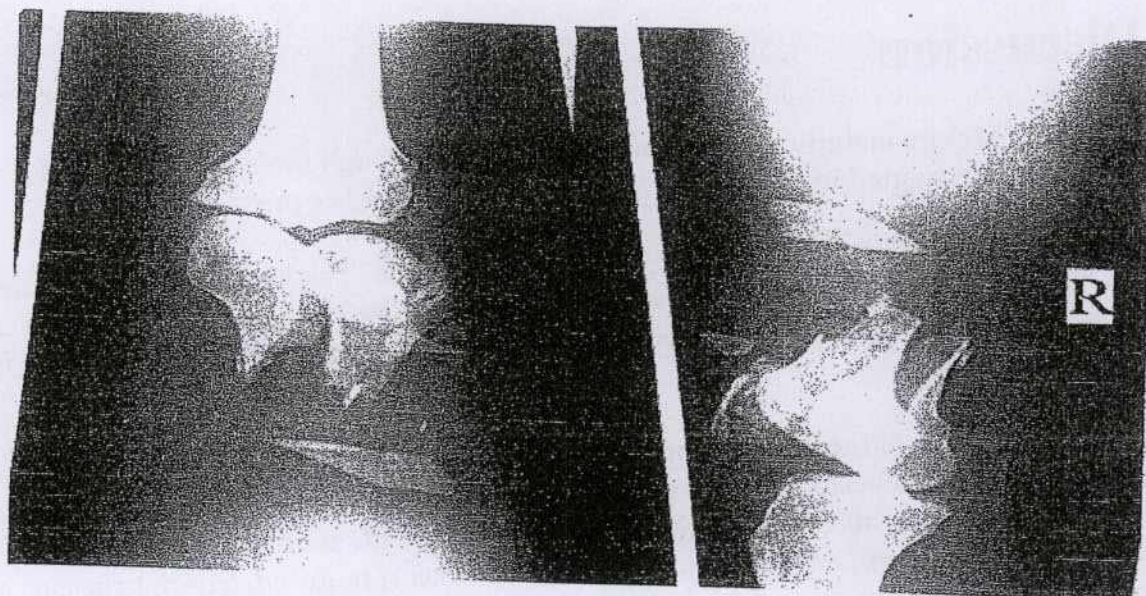
The presence of these fragments caused confusion in our mind initially for any loss of bone. However it was refuted because of perfect reduction and normal limb length. Due to extreme rarity of this occurrence, this case is being reported.

Loss of bone in an acute setting of open fractures dictates change in the modality of the treatment.

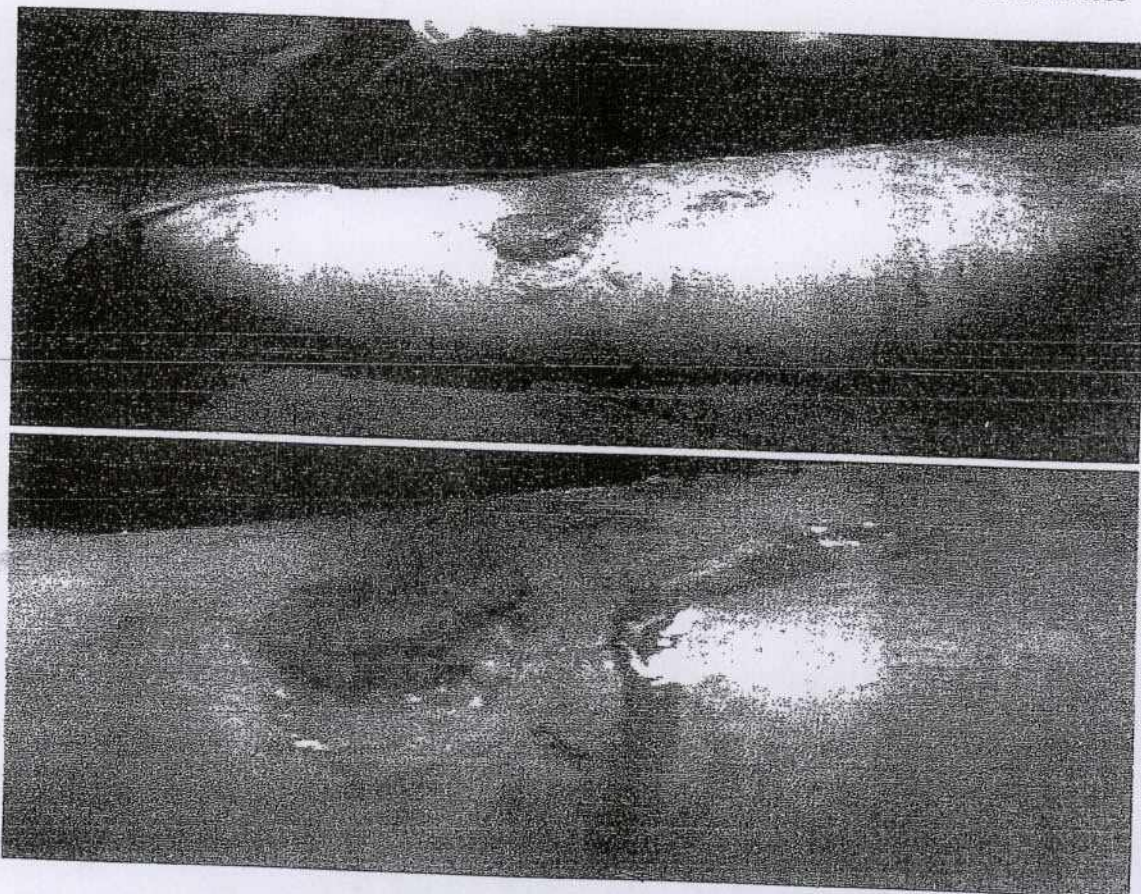


X ray of the patient with transverse fracture of the mid shaft femur with two bony fragments



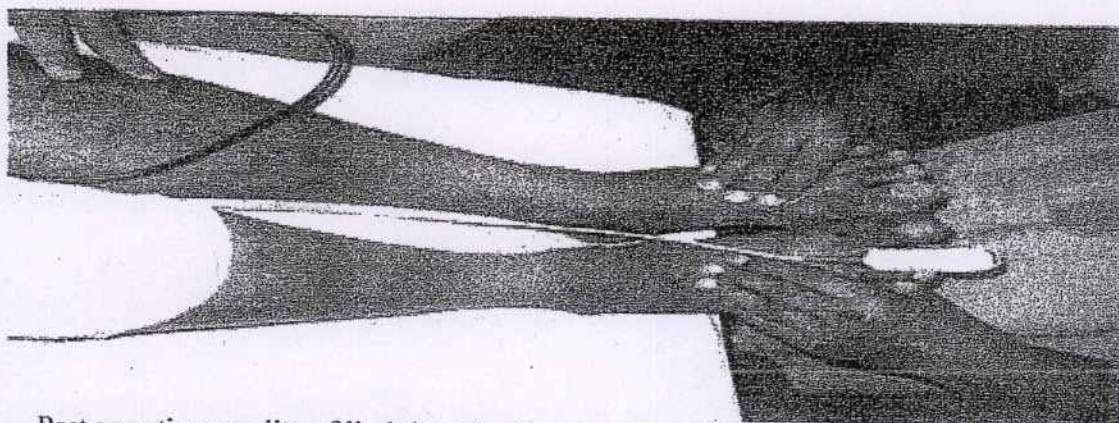
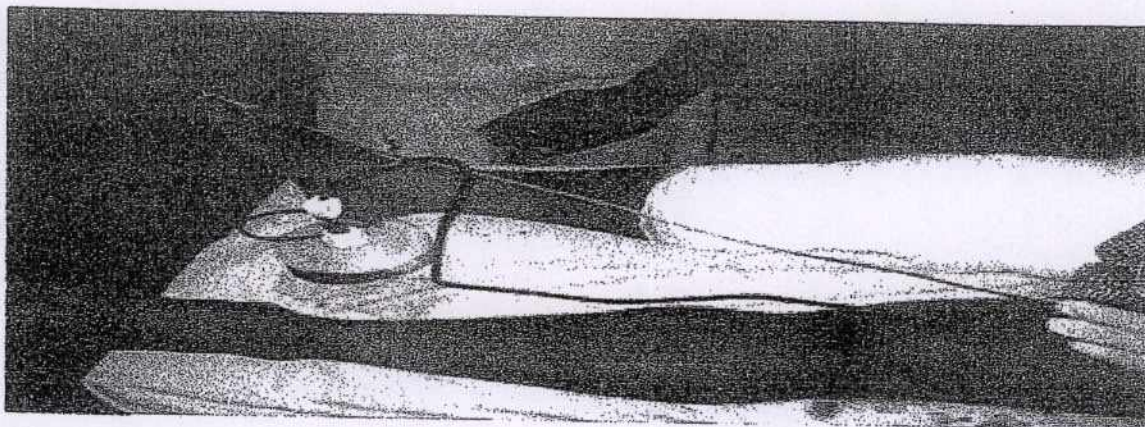


X ray of a patient with open type III C fracture of the distal 3<sup>rd</sup> right femur with bone loss



Open wound of the patient over the lateral aspect of the thigh through which the bone fragments were impaled





Post operative equality of limb length after removing of the impaled bone fragments and intramedullary nail fixation

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