

## Penetrating Injury Over the Back Due to Wooden Stick - Don't Leave the Fragments Behind

Saurav Srivastava<sup>1</sup>, Ranjana Rashmi<sup>2</sup>, Digamber Chaubey<sup>3</sup>

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### Abstract

**Background:** Penetrating injury due to wooden stick is a rare accident in children. Very few such cases have been reported.

**Aim:** To report a case of 11 years old boy who presented with penetrating injury over back due to a wooden stick.

**Result:** He received initial treatment with removal of superficial fragments, but deeper pieces were missed causing development of large volume of abscess. This was evaluated and drained after which the child has uneventful recovery.

**Conclusion:** When promptly investigated and treated, wooden splinter injury have good prognosis.

**Keywords:** Penetrating injury; Spinal injury; Abscess.

## INTRODUCTION

Penetrating injury with sharp objects is a rare accident in which children may get injured. They can be superficial enough to just breach the skin and remain restricted to the muscular plane or can go into the peritoneal or pleural cavity thereby causing injury to the visceral organs. Proper history of the injury, mode of injury, careful inspection of the sharp object, and physical examination of the injured child help to decide about the relevant investigations and further management.

**Author's Affiliation:** <sup>1</sup>Assistant Professor, Department of Pediatric Surgery, All India Institute of Medical Sciences Patna 801507, Bihar, <sup>2</sup>Senior Resident, Department of Pediatric Surgery, Indira Gandhi Institute of Medical Sciences, Patna 800014, Bihar, <sup>3</sup>Associate Professor, Department of Pediatric Surgery, All India Institute of Medical Sciences Patna 801507, Bihar, India.

**Corresponding Author:** Saurav Srivastava, Assistant Professor, Department of Pediatric Surgery, All India Institute of Medical Sciences Patna 801507, Bihar, India.

**E-mail:** sauravsrii@gmail.com

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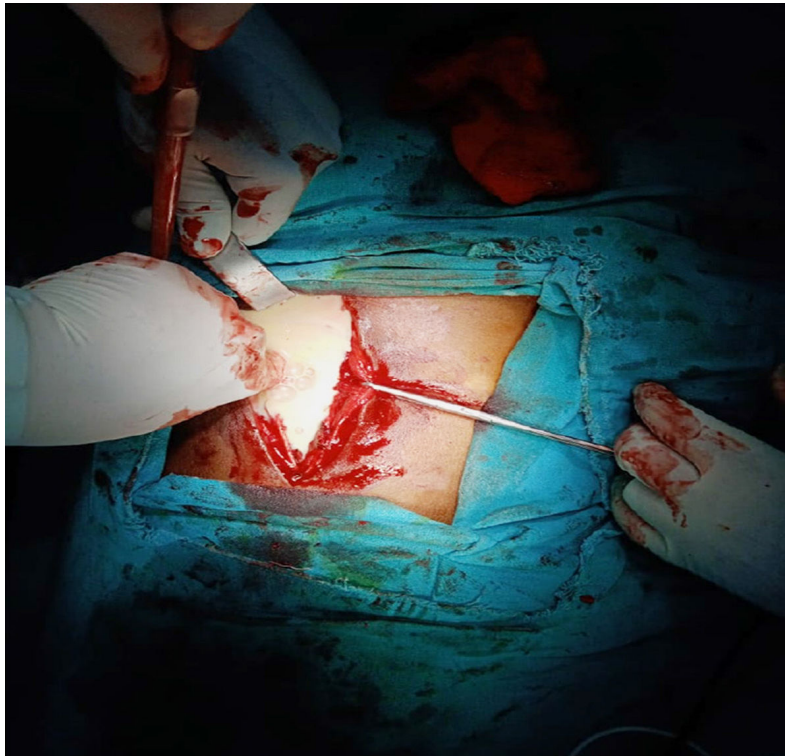
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## CASE REPORT

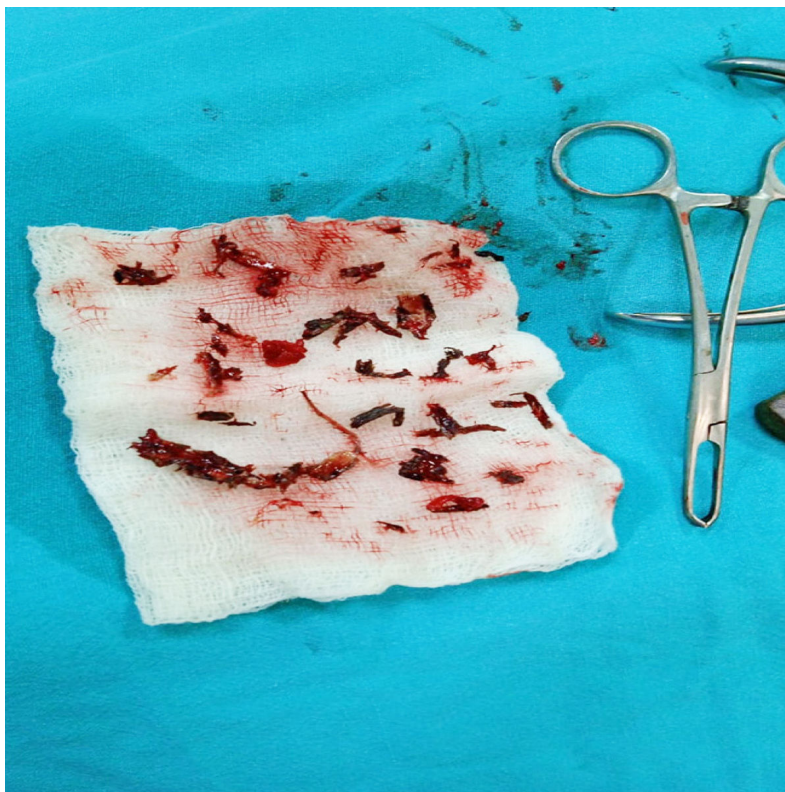
An 11-year-old boy sustained an injury to his left para-spinal area as he fell over a wooden bamboo stick while playing. There was abrasion and a clear breach of the skin. He was taken to the nearest Primary Health Centre (PHC) where the stick was taken out, the wound was cleaned and primary stitches were given. As the boy was hemodynamically stable, he was discharged on antibiotics and analgesics. The child developed severe pain at the injury site after two days and spikes of fever the same evening. An Ultrasonography (USG) done the day showed a hematoma at the site of injury and ruled out any visceral organ injury. The child was further treated by physicians for fever with IV antibiotics. On 4<sup>th</sup> day of injury, there was pus discharge from the stitched site after which a second USG was done suggestive of abscess at the injury site. As the child was not responding to antibiotics, he was referred to our institute where CECT revealed the presence of multiple fragments of foreign body and pus collection. He underwent exploration under GA. Approximately 200 ml of pus was drained

(Fig. 1) and multiple pieces of splinters were removed (Fig. 2). The abscess collection was in the para-spinal space and was in the muscular plane as

well as deep into it. The drain was removed on the 5<sup>th</sup> postoperative day and the child was discharged on the 8<sup>th</sup> postoperative day.



**Fig. 1:** Large amount of pus on opening the wound



**Fig. 2:** Multiple fragment retrieved after careful exploration

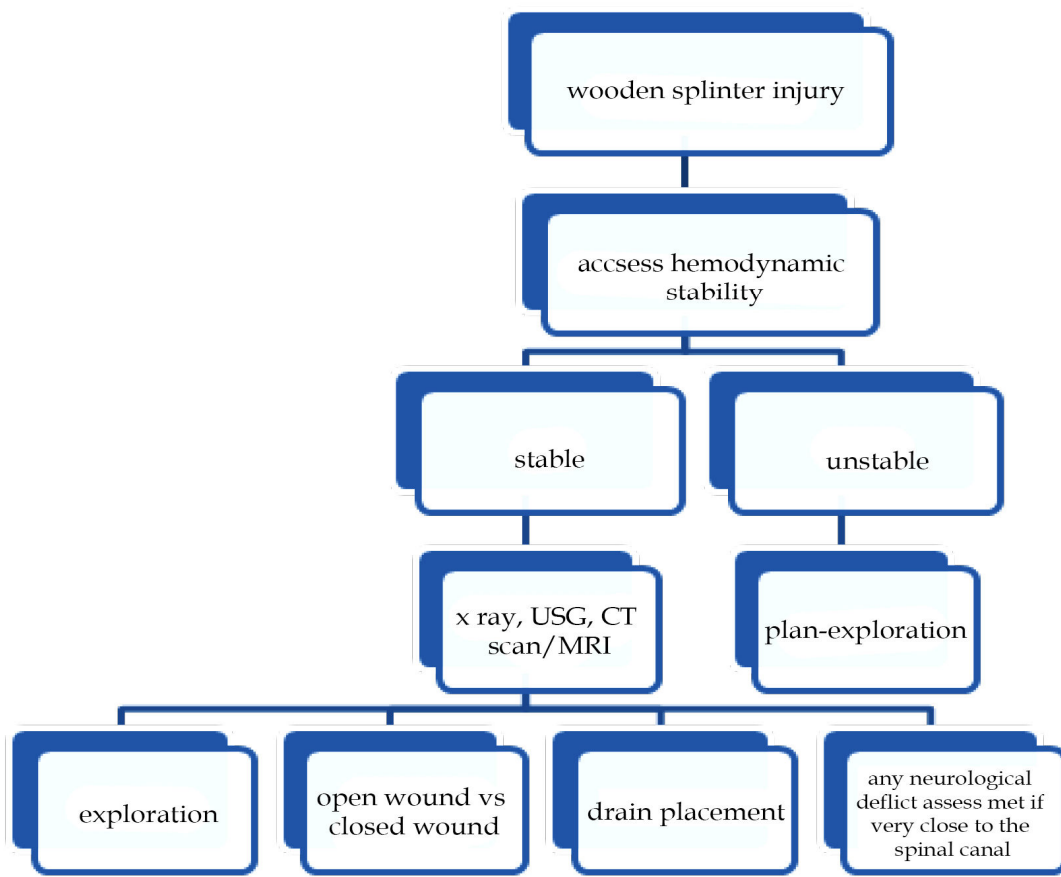


Fig. 3: Algorithm to treat a wooden splinter penetrating injury

## DISCUSSION

Wooden Splinter injury is a very uncommon mode of injury in children, more in the rural areas than the urban ones where the children tend to ply with wood sticks. As innocuous as it may seem, if all the pieces of the splinter are not taken out, it serves as a nidus of infection and causes repeated abscess formation and hospitalization. If the wooden pieces are not taken out or countered by the immune system of the body, a localized granuloma to a severe reaction may occur that includes a significant synovitis and osseous lesion.<sup>1</sup> Wooden fragments can even cause penetrating intradural injury which may present with features of central nervous system (CNS) infection.<sup>2</sup> If a child presents with a wooden stick injury, first the hemodynamic stability of the child should be assessed. Since the wooden splinters are radiolucent, X-ray in the preoperative period or the use of C ARM machine to locate the fragments intraoperatively is of limited use. In a hemodynamic stable child, USG and X-ray help to rule out any other adjacent visceral injuries. If there is any doubt about the remaining pieces not being visualized, the patient should undergo computed tomography (CT) of the region to localize the

fragments. MRI can be very useful in diagnosing the intradural penetration of the wooden splinters into the spinal cord.<sup>3</sup>

USG-guided marking over the skin, of the foreign body can serve as a useful adjunct during the surgery. Although USG guided removal of the foreign body has been reported but it's use is limited in the presence of multiple foreign bodies and the inability to do any lavage or debridement if required.<sup>4, 5</sup> The wound should be explored under general anesthesia (GA) so that no part is left behind. The decisions regarding the depth of exploration, exploring the spinal canal, any breach of the dura, and its subsequent repair should be taken judiciously as they may have implications on the neurological outcomes. Also, the exploratory wound, in the presence of severely infected, neglected/long standing cases can be left open as the chances of reinfection and abscess formation are high. Perioperative coverage of IV antibiotics and analgesics should be given. With proper management, the recovery in these cases is good with minimal morbidity and post-operative complications. Based on the above observations, following algorithm can be followed (Fig. 3).

## CONCLUSION

The wooden splinter injury is often overlooked and underreported as it's not considered a sharp penetrating injury. But when hit with sufficient force/velocity, it can cause an injury as severe as it's metallic counterparts. The patients when treated with prompt investigations and treatment have good outcome.

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