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Accidental penetrating injury by wooden stick: A case report

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Abstract
Penetrating trauma is an injury caused by a foreign object piercing the skin and damaging the underlying tissues and results in an open wound. The most common cause of such trauma are gun shots, explosive devices and stab wounds. These penetrating injuries if neglected can result in various complications like neurovascular compromise, flexor or extensor tendon injuries, ischemic changes, infection and it can even go for compartment syndrome. Here we report a case of accidental penetrating injury to forearm by wooden stick and the proper timely intervention in removing it and make limb salvageable. We have removed it by supraclavicular block with the tourniquet and proper lazy S incision and so that preserving the neurovascular structures which was just close to it along with repairing the flexor muscles of the forearm. We report here a case with accidental penetrating injury to forearm by wooden stick. A 35 year-old male patient presented with history of pain and swelling in his right forearm occurs after an accident. There was an entry wound on radial side of forearm around 3×4 cm and an exit wound of 3×3 cm with wooden stick *in situ*. A detail history and careful examination is needed.

Keywords: Penetrating injury, wooden stick, foreign body removal, flexor tendon repair

Introduction
Accidental foreign body penetrations are the injuries and it may occur in any parts of the body [1, 2]. Most of the penetrating injuries are commonly seen in extremities during accident and it is associated with arterial and peripheral nerve injuries [3, 4]. They are most common injuries in our country which helps to gain experience for the trauma surgeons [5]. These penetrating injuries if neglected can result in various complications like neurovascular compromise, flexor or extensor tendon injuries, ischemic changes, infection and it can even go for compartment syndrome [6]. A 35year-old male patient presented with history of pain and swelling in his right forearm occurs after an accident. There was an entry wound on radial side of forearm around 3×4 cm and an exit wound of 3×3 cm with wooden stick *in situ*. A detail history and careful examination is needed.

Case history
A 35yr old male patient named as Rajveer from Dausa Rajasthan met with an accident while riding bike under the influence of alcohol on 26th April 2022 at 10 pm at Mahua, Dausa, Rajasthan. The patient had met with the accident and a wooden s tick penetrates his right forearm and suddenly patient starts bleeding and severe pain from the injured site. Patient immediately gone to the nearby hospital and taken basic treatment and from there referred to the higher centre (SMS Hospital Jaipur).

Examination
On examination there is a wound over the proximal forearm with wooden stick, there is no neurovascular deficit and we have gone through basic investigations like X-ray, CT Angiography and blood investigations after that patient immediately shifted to operation theatre.

Procedure
- Patient has taken to the operation theatre; supraclavicular block was given.
- Betadine scrubbing was done and tourniquet applied.
- Betadine painting and draping was done.

- An incision connecting both the wound and skin, subcutaneous tissue dissected and it is found to be the wooden stick was entrapped inside flexor carpi radialis muscle.
- Muscle was cut and dissected and it was found to be all neurovascular structures intact and the median nerve was just underneath the wooden stick and it was removed slowly.
- The muscle flexor carpi radialis was closed with Vicryl and skin closed with 3.0 Ethilon.
- The patient was stable and shifted to ward.

Fig 1: Showing the entry wound and Exit wound with wooden stick *in situ*.

Fig 2: Showing Intraoperative removal of wooden stick.

Fig 3: Showing Post procedure incision mark

Fig 4: Post operative assessment of function of hand

Discussion

Accidental foreign body penetrations are the injuries and it may occur in any parts of the body [7]. Most of the penetrating injuries are commonly seen in extremities during accident and it is associated with arterial and peripheral nerve injuries [3, 4]. To get the best outcome the surgeon must perform an accurate rapid and detailed examination for all injured extremities exploring in vascular, nerve and muscular injury [8]. The hands and feet were the most vulnerable part for puncturing injuries resulting in foreign bodies embedded in soft tissue. Metallic foreign bodies, confirmed on surgical exploration, were detected on pre-operative plain X-rays. Ultrasonography was advised in all cases where FB was not visible in plain X-rays. The wooden foreign bodies are usually radiolucent and associated with as in the matrix. However, the small size of the foreign body often is not sufficient to create an appreciable radiolucency. In our case wooden stick found to be in the belly of flexor carpi radialis muscle and appropriate incision given and wooden stick removed safely without causing any damaged to the underlined neurological structure [9]. Postoperatively we checked the neurological examination and no deficit was detected. At the follow-up period we didn't encounter any complications like late neurological deficit or wound infections. After 2 weeks the patient returned his previous day to day activities.

Conclusion

In penetrating injuries of extremities such as wooden stick injuries, in this not to miss neurovascular injuries the surgeon must perform an accurate rapid and detail examination. In this paper we wanted to emphasise by importance of rapid and control intervention for the accidental wooden stick injury of the upper extremities by immediate exploration and removal of contaminant and the foreign body with preserving the neurovascular structure.

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