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Research Article

Presentation and Management of soft tissue Foreign Bodies The most challenging surgeries

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Abstract:

Introduction: Accidental penetrating injuries with foreign bodies are a common presentation in hospital's emergency rooms. If missed, these bodies can remain dormant or result in a wide range of complications. This study evaluated the characteristics of patients, presentation and management who suffered foreign body embedded in soft tissue at a ABV Government Medical College Vidisha MP India. Methods: The study was conducted at Department of surgery, Atal Bihari Vajpeyi Government Medical College Teaching Hospital from January 2021 to November2024. All cases confirmed to have a foreign body in soft tissue were enrolled. Surgical exploration with removal of foreign body was carried in operating room under tourniquet control. The patient demographics, cause of injury, nature of foreign body, occupation of the patient, diagnostic yield of radio imaging, procedures undertaken for retrieval of foreign body, and complications were recorded. All patients were followed-up up to five months.

Results:

- Total 223 patients
- 188male 35 female
- most common Occupation farmer
- Time of presentation
- Early (within hours to same day) 140
- Late (days to months) 72
- Very late (in years) 11 follow up.

Most common foreign bodies Organic (thorn,wood)

- Most common location
- Hand +Arm 111
- Foot + Leg 60
- Others 52
- Mode of injury Accidental Conclusion: Managing foreign body embedded in the soft tissue are challenging. Surgical exploration under tourniquet control suffices a definitive management. At times, image intensifier is required to locate the foreign body.

Keywords: foreign-body • management • presentation • removal • soft tissue

Introduction

Foreign bodies (FBs) are any objects originating outside the body and constitute the flora of our surroundings which enter the human body during accidental injuries such as motor vehicle accidents, explosions and ballistic injuries or can be self-inflicted. The nature and location of the foreign bodies can vary considerably.1 Penetrating and impalement injuries are common presentations at the hospital's emergency rooms both in the developed as well as developing countries. Foreign body injuries should be suspected in all such cases.2,3 These foreign bodies may be detected incidentally in X-rays or when missed, may present later with an abscess, granulomas, non healing sinuses, lump, or stinging sensation.4 Sometimes FB may present away from the site of primary wound because of delayed migration into soft tissues planes.5 Radiographs and ultrasound are two commonly available adjuncts for detecting foreign bodies.6 In order to preclude these complications, the foreign bodies are best removed surgically. We frequently encounter patients with soft tissue foreign body in fresh wounds as well as embedded deep in healed wound.

The present study was undertaken to evaluate the clinical presentation, diagnosis, and management of soft-tissue foreign bodies in a teaching hospital of Vidisha Madhya Pradesh central india.

Methods:

This descriptive case series study was carried out at the Department of Surgery, ABVG Medical College Teaching Hospital from from January 2021 to November2024. All cases confirmed to have a foreign body in soft tissue were enrolled in this study. Informed consent was taken on a proforma before entering the data.

The initial assessment was made by detailed history, thorough examination, plain radiographs, and ultrasonography. Tetanus prophylaxis was routinely employed if there was no booster dose of tetanus immunization within 10 years. Passive immunization with tetanus immunoglobulion was also ensured in patients with contaminated wounds with unknown history of tetanus immunization. Antibiotics prophylaxis was given to all patients.

All the cases were admitted in the hospital. Cases with history suggestive of embedded foreign bodies with fresh wounds were surgically explored in operating room and careful retrieval, under regional or local anesthesia and tourniquet control was undertaken under aseptic precautions. Digital X-rays with markers at puncture site and ultrasonography were performed .

The demographic profile of the patients, cause of injury, occupation of the patient, type of foreign body, diagnostic yield of plain X-rays, type of procedure undertaken for retrieval of foreign body, any complications were all recorded. A follow-up of five months was done.

Results:

- Total 223 patients
- 188 male 35 female
- most common Occupation farmer
- Time of presentation
- Early (within hours to same day) 140
- Late (days to months) 72
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- Most common foreign bodies Organic (thorn,wood)
- Most common location
- Hand +Arm 111
- Foot + Leg 60
- Others 52
- most common Mode of injury Accidental

Most of patients had successful surgical exploration and retrieval of the foreign bodies antibiotics and secondary closure. None of our patients had hospital readmission. All patients were uneventful at five months follow up. All surgeries was successful to retrieve foreign bodies. We use x ray to detect metallic foreign bodies and ultrasonography for organic foreign bodies.

Discussion:

Soft-tissue foreign body are usually under reported as most of the patients are presented to local clinics, emergency departments of non-teaching hospitals and outpatient clinics.7 In our study, we had majority female patients. Our finding contrasts to the observation of Salati et al. and Mohammadi et al. who reported a gender difference in foreign body injury patterns with predominant involvement of males.8,9 The difference is probable due to more frequent involvement of our women in household, farming and cattle grazing activities.

Majority of our patients were relatively young with a median age 36 yr. Other published studies have also reported more frequent involvement of relatively younger patients sustaining injuries.8,9 The time of presentation since the initial injury to emergency department or outpatient clinics is variable in different reports. Our observation contrasts to that of Levine et al. who reported majority of their patients presenting within 48 hours.10 Salati et al. reported that only 10% of his cases attended within 2 weeks of injury, rest of 90% came after two weeks.8 Our findings are comparable to that of Salati as two third of our patients presented after two weeks of initial injury.

Wood splinters and foreign bodies with other vegetative nature were most commonly observed. It may be probably due to majority of our female population engagement in cattle grazing and cutting grass activities in difficult terrain of hilly region. Or findings contrasts to the observation of Saaq M., where needle and metallic fragments were the commonest.4 Stones/gravels and glass were observedin cases secondary to road traffic accidents. Sewing needles were observed in females probably due to exposure to routine stitching and sewing at home.

The hands and feet were the most vulnerable part for puncturing injuries resulting in foreign bodies embedded in soft tissue.14 Upper and lower limbs collectively contributed for majority of our cases and the same is reported in other contemporary articles.

Metallic foreign bodies, confirmed on surgical exploration, were detected on pre-operative plain X-rays. Ultrasonography was advised in all cases where there was history of organic FB . The published literature reveals a growing trend towards more frequent use of high frequency ultrasound for both diagnosis and management of hand foreign bodies.15. Peterson et al., who reported a series of 12 cases of retained foreign bodies, also observed failure of plain X-rays to reveal the diagnosis.16 Radiographs may reveal a wooden foreign body in only up to 15% of patients. The wooden foreign bodies are usually radiolucent and associated with gas . Sonography has proved the most useful modality, easily identifying the retained wood as a linear echogenic focus with marked acoustic shadowing.16-18 CT scan and MRI are more informative and precise but are costly and are not performed routinely.

Most of our patients did not come for a regular follow up which is a common scenario in our partof the country. The wound complication following removal of FB in our study was within acceptable limits. There was one case where small metallic fragments were missed and remained asymptomatic

- Discussion
- Patients History it tells about the nature of FB
- Acute presentation wound, bleeding
- Late pus
- Very late Fibrosis
- Investigations
- Organic USG
- Metallic, Glass Xray
- Foreign Bodies removal is a challenging surgery
- Its easier to do laparoscopic nephrectomy \TEPP rather than Foreign Body removal because it is defficult to localize foreign body as well as its removal
- Chancess of unremoval is high
- Its removal is not describe in any books

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