



Delayed Presentation of Small Bowel Injury Following Extraperitoneal Ballistic Injury

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Introduction

- Management of penetrating trauma to the abdomen has traditionally required laparotomies.
- Over the past decades, conservative management has been advocated in patients with no peritoneal violations.
- Few reports have been discussed in the adult trauma literature documenting injuries to the abdominal viscera following extraperitoneal ballistic injury, but none in pediatric trauma
- Here, we discuss a case of delayed presentation of small bowel injury following extraperitoneal ballistic injury.

Case Presentation

- 4 year old male with gunshot wound to right lower quadrant, left medial and lateral thigh.
- Vitals: pulse 84, blood-pressure 106/56, respiratory-rate 20,
- Fast was negative. Abdominal KUB without any pneumoperitoneum or intraabdominal bullet

Case presentation

- Wound exploration in operating room: GSWs were in the same trajectory and no violation of the fascia was noted.
- Wounds were irrigated and then partially closed over a penrose drain. Admitted for observation.
- Post operative day 1: pulse 171, respiratory rate 17, blood-pressure 93/72, abdomen distended.
- CT imaging: Pneumoperitoneum
- Exploratory laparotomy:
 - Three separate perforations in 15 cm mid- jejunal segment. Resected and primarily repaired.
 - No peritoneal violation was noted.

Postulate

- Zones of soft tissue injury upon bullet impact (Figure 1)
 1. entrance site at the epithelial level.
 2. the wound cavity.
 3. contusion zone (surrounding cavity).
 4. concussion zone.
- Cavity undulates 5-10 milliseconds, generating pressure upto 200 atmosphere. Can cause injury when pressure imparted onto surrounding structure.

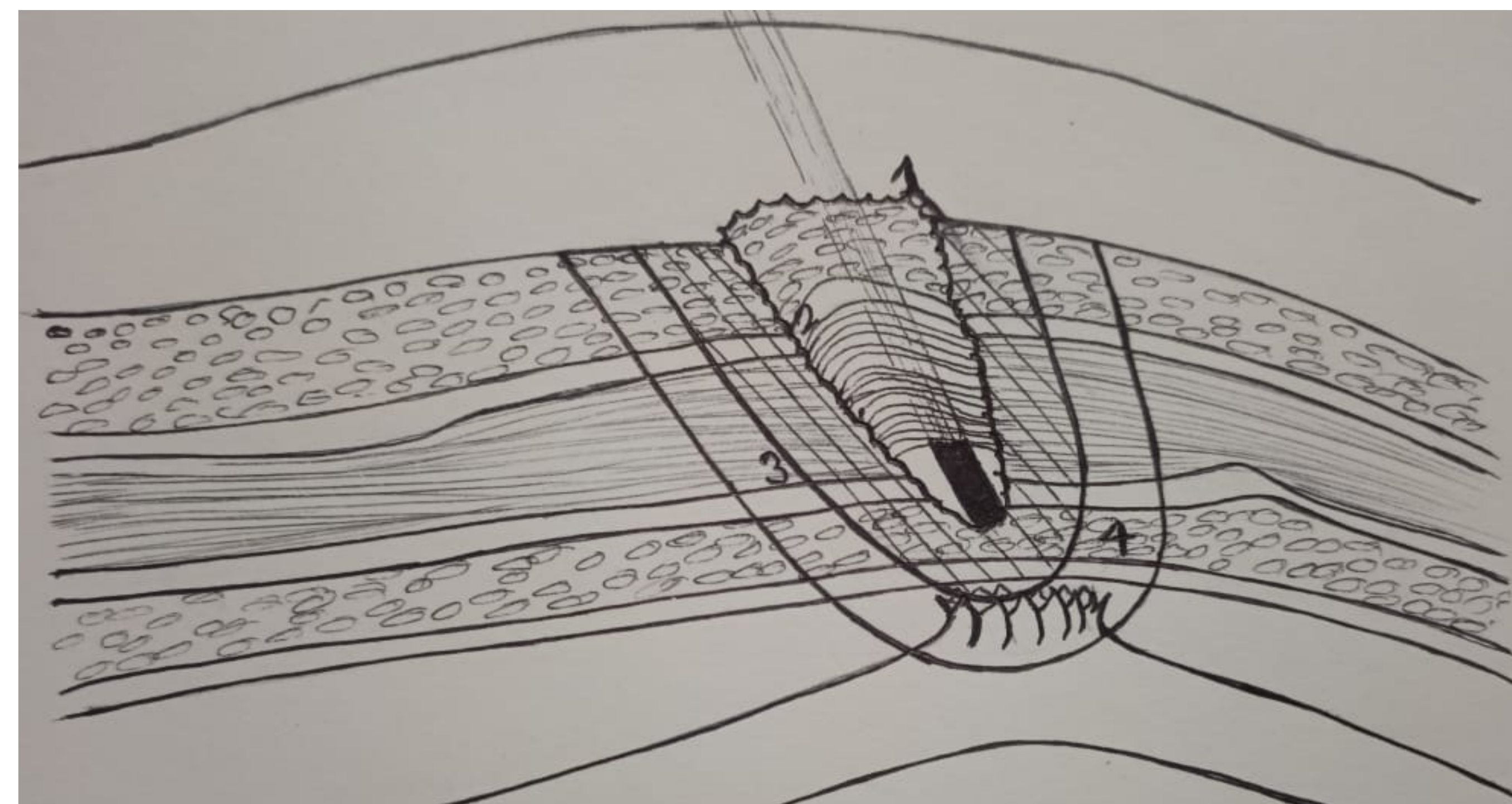


Figure 1: Zones of Soft Tissue Injury

Discussion

- Advocate consideration of intraperitoneal injuries and extended observation in penetrating ballistic trauma even without any peritoneal extension
- Lower threshold for the same in patients with low body mass index and decreased width of the subcutaneous tissue.
- Clinical judgement is of utmost importance to execute the conservative pathway for management of such injuries

References

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