

# The Bullet That Took a Detour :

## A Case of a Wandering Gunshot Wound

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### Introduction:

Ballistic injuries are associated with significant morbidity and mortality. The severity of injury is affected by the speed and velocity of the bullet, magnitude and direction of energy transmitted, distance of the missile, contexture of bullet, and structures involved. This is a case of a rare and perplexing bullet path from the right chest to the rectovesical pouch.

### Case Description:

A 31-year-old gentleman presented to the emergency department with a gunshot wound over his right anterior chest wall. He was stable, alert, and only complained of localized chest pain. He denied experiencing any breathlessness and showed no signs of shock nor respiratory distress. Examination revealed an entry wound on the anteromedial aspect of the right chest, with no visible exit wound. A chest X-ray showed no significant findings, however, a pelvic X-ray revealed a bullet located within the pelvic cavity. CT scan confirmed the trajectory of the bullet directed inferiorly and obliquely entering the abdomen, resting posteriorly to the bladder at the level of mid rectum. Intraoperatively, a liver hematoma was identified, and the bullet was successfully retrieved. He recovered well and was discharged 5 days of post-laparotomy.

### Discussion:

This case highlights the unpredictable nature of gunshot wound trajectories, especially when no exit wound is identified. Bullets may deviate from a straight path due to deflection by internal structures or transdiaphragmatic travel across anatomical planes. Such deviations can result in significant but initially occult vascular or organ injuries, particularly within the thoracoabdominal region. These may not be immediately apparent through clinical examination or routine monitoring especially when the bullet takes an unusual course. Initial plain radiographs were insufficient to determine the bullet's path, injury extent and the absence of an exit wound raised suspicion for a retained projectile, which was confirmed by CT imaging. The atypical trajectory is likely due to the bullet's translational kinetic and rotational energy, interacting with tissues of different densities such as bone, muscle, or organ surfaces causing directional changes or tumbling within the body. The bullet trajectory avoiding major organs and vascular structures was astounding.

### Conclusion:

A comprehensive understanding of bullet trajectory, along with a dispassionate and multidisciplinary approach, is key for effective management of gunshot wound.

### References:

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