

Urethral Scar Tissue and Compromised Integrity: A Case Report of Urinary Consequences Following Gunshot Wound to the Pelvic Area

Rostyslav Bubnov¹, Olena Grechanyk², Rizvan Abdullaiev³

¹Clinical hospital `Pheophania`, Ultrasound, Kyiv, Ukraine

²National Military Medical Clinical Centre "Main Military Clinical hospital", Kyiv, Ukraine

³Kharkiv national medical university, Kharkiv, Ukraine

Introduction

Pelvic gunshot wounds can lead to severe injuries, impacting various systems, including the urinary system. This case report aims to present the medical condition of a 48-year-old male with a pelvic gunshot wound, emphasizing the importance of monitoring and addressing urinary complications. We describe initial surgical interventions, imaging findings, and the disease's subsequent course.

Case report

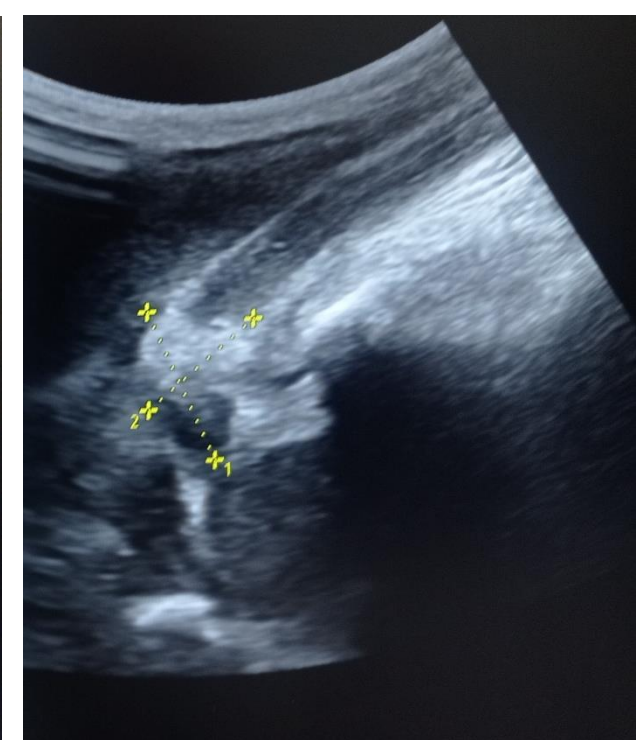
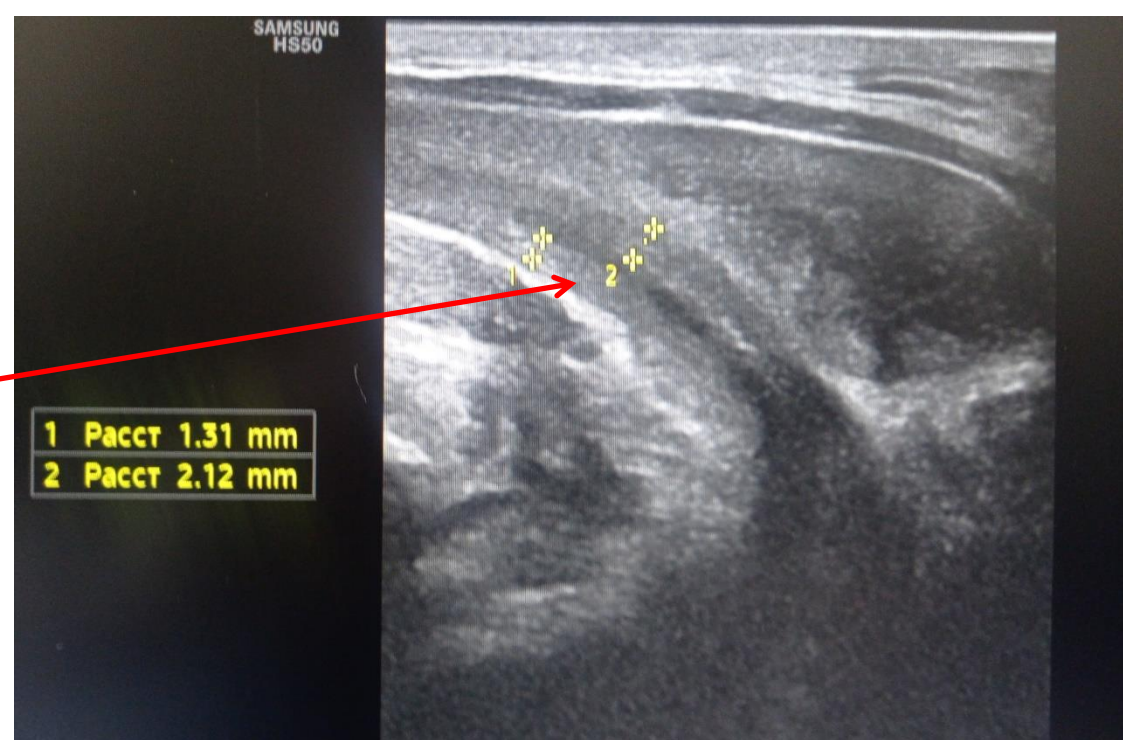
A retrospective analysis of a 48-year-old male with a pelvic gunshot wound was conducted. Medical records, imaging reports, and surgical notes were reviewed. Imaging modalities included spleen examination, CT scan, and transperineal examination, documenting radiological findings related to the urinary system, pelvic bones, and surrounding tissues.

Results:

The patient underwent initial surgery involving urethral repair, urinary bladder revision, and left retroperitoneal drainage. Subsequent surgery focused on left hip and pelvic bone osteosynthesis.

Ultrasound revealed normal-sized kidneys with slightly increased cortex echogenicity, and preserved vascular architecture. The urinary bladder exhibited increased thickness with an irregular contour, and the prostate gland displayed moderate echogenicity with fibrotic changes. Transperineal examination revealed scar tissue around the membranous urethra without evidence of disruption.

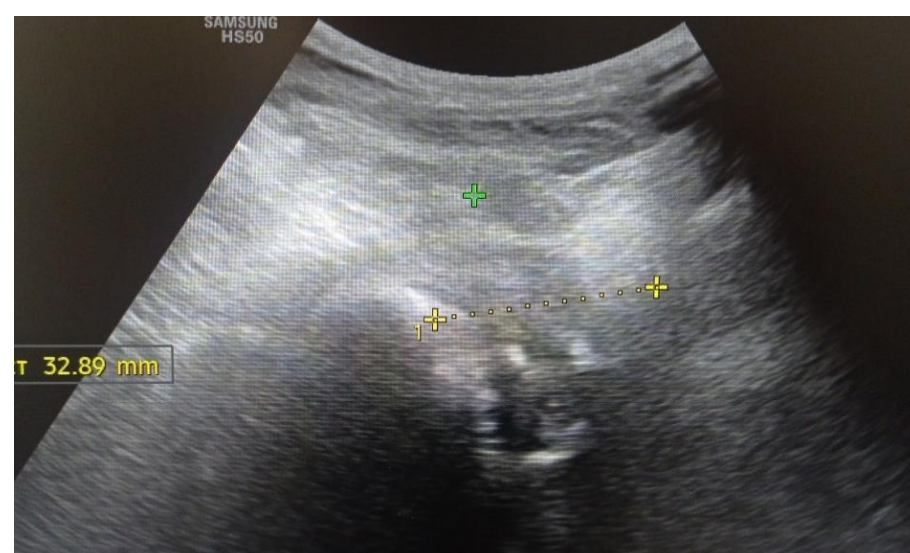
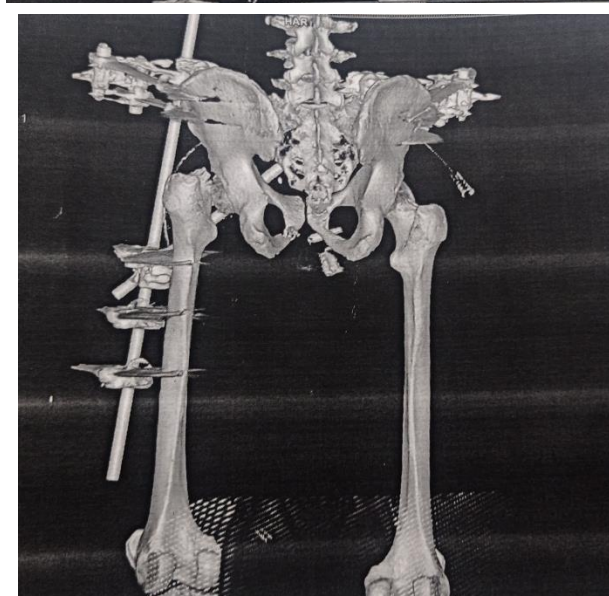
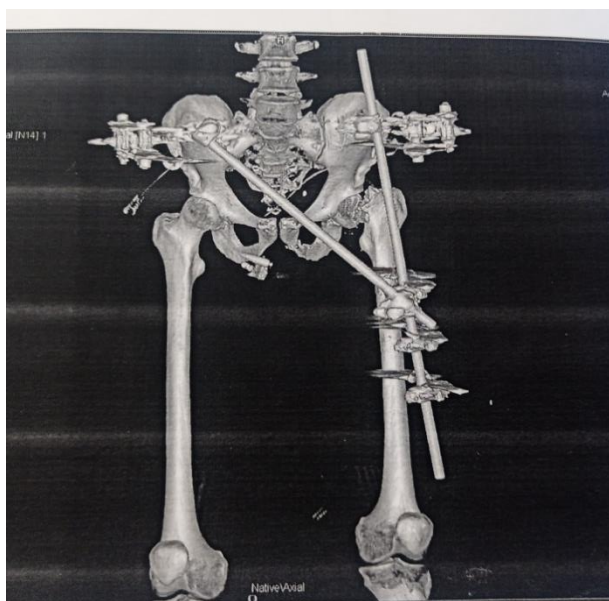
CT examination uncovered gas, metallic fragments, and bone fragments in presacral adipose tissue and muscles. Bullet fragments were present in the right paracolic gutter adipose tissue. Complex pelvic fractures, a gunshot fracture of the left femoral neck with femoral shaft displacement, and femoral head positioning within the acetabular cavity were identified.



Urethra compression on contrast urography and transperineal US

Urethra (membranous) transperineal US approach:

A transperineal examination revealed scar tissue around the membranous part of the urethra but no signs of urethral integrity disruption (left). The urethra appeared deformed within the membranous tissue due to adjacent scar changes (right).



Ultrasound examination of the pelvic tissues: In the hip bone, laterally and superiorly near the hip joint, there is a defect measuring 30 mm in depth, filled with bone fragments and hypoechoic tissue (callus).



Ultrasound examination of the pelvic tissues: Near the inferior pubic ramus, a hyperechoic inclusion measuring 7 x 6 mm is observed within the pectineus muscle.

Conclusions

This case report underscores the need for vigilance regarding urinary consequences in pelvic gunshot injuries. Observed scar tissue and changes in the bladder and prostate highlight potential compromised urinary integrity. Comprehensive monitoring and tailored treatment strategies are crucial for addressing complex injuries effectively. A multidisciplinary approach ensures optimal patient care and outcomes in challenging scenarios.