

The Mysterious Disappearing Kidney: A POCUS Tale of Hidden Trauma

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Introduction

Point-of-care ultrasound (POCUS) is a quick, non-invasive imaging tool commonly used in the emergency department to assess trauma patients for intra-abdominal injury. However, its sensitivity in detecting certain types of renal injuries, particularly severe ones like shattered kidneys, remains uncertain. This case highlights the correlation between POCUS findings, including the inability to visualize the kidney, and a confirmed shattered kidney upon CT imaging.

Case description

A 28-year-old male motorbike rider presented to the emergency department following a traumatic motor vehicle accident (MVA). The patient was run over by a lorry, resulting in left-sided abdominal and hip pain. His initial physical examination was unremarkable except for pelvic tenderness on the left side. Given his abdominal pain and risk of injury, an eFAST was performed, which revealed free fluid in the splenorenal pouch and an inability to visualize the left kidney. The lack of kidney visualization on POCUS prompted a more detailed imaging approach, and a CT scan was performed. The CT findings revealed a shattered left kidney, multiple splenic lacerations, and a retroperitoneal hematoma, which confirmed severe intra-abdominal trauma.

Discussion

This case presents a rare but clinically significant instance where POCUS was unable to visualize the kidney due to the severity of the injury, and the subsequent CT scan revealed a shattered kidney. The absence of the kidney on ultrasound could be attributed to the degree of damage, which may cause renal tissue destruction or reverberation artifacts from surrounding structures, preventing accurate visualization. Several studies have highlighted the importance of a thorough clinical evaluation and the complementary role of CT when POCUS findings are inconclusive or when high suspicion for severe injury, such as shattered kidneys, exists. POCUS remains a valuable tool in trauma, but its limitations in detecting certain renal injuries necessitate further imaging for accurate diagnosis and management.

Conclusion

In cases of severe renal injury, including shattered kidneys, POCUS findings may be inconclusive, as demonstrated by the inability to visualize the kidney in this case. CT imaging remains essential for confirming the diagnosis, especially when POCUS cannot clearly identify such complex injuries. This case underscores the importance of multimodal imaging in trauma care to ensure accurate diagnosis and appropriate management.

Keywords

POCUS in trauma, renal ultrasound, shattered kidney

References

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