Title

The Role of Clinical Assessment and Point-of-Care Ultrasound (POCUS) in the Early Detection of Peritonitis in the Emergency Department

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Background

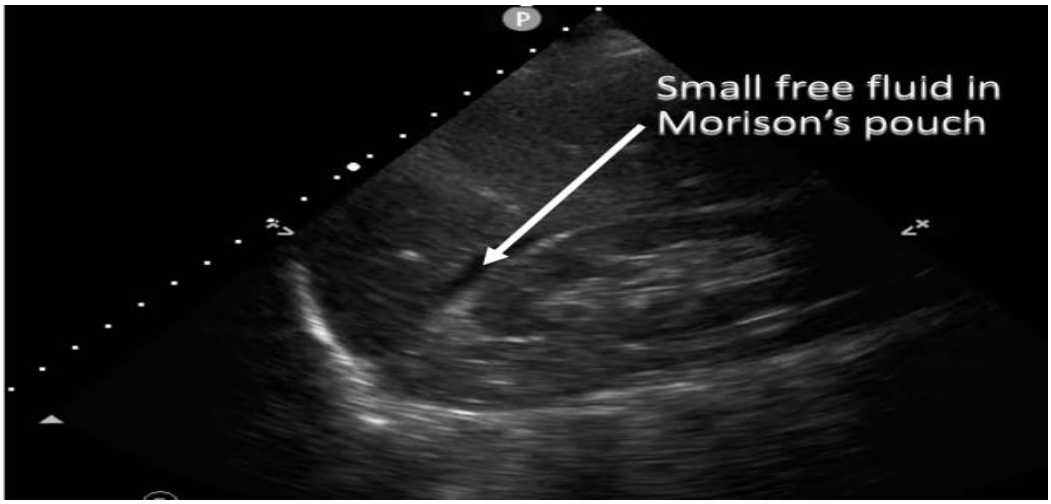
A large percentage of ED patients and high impact attendees have recurrent abdominal pain. (Daniels et al., 2020). According to the studies of Araujo-Filho and Rêgo (2025), A huge variety of diseases, from benign, self-limited diseases to serious, life-threatening conditions, can cause abdominal pain. The wide range highlights how crucial diagnostic awareness is in differentiating between multi-system illnesses that appear with similar symptoms and actual surgical emergencies. Diagnostic imaging is frequently a vital tool in identifying the cause of abdominal pain, which is a frequent presenting symptom in the hospital's emergency department. (Wolfe et al., 2022). In a wide range of healthcare settings, point-of-care ultrasound (POCUS) has quickly emerged as a vital diagnostic and therapeutic tool that allows physicians to conduct real-time, bedside imaging that directly influences patient treatment. (Puticiu et al., 2026)

Case Presentation

A middle-aged male with a background of CLD presented at MMUH ED complaining of lower abdomen pain, diarrhoea, on and off fever. He came in a week prior with similar signs and symptoms, received treatment for what was suspected to be gastroenteritis, and was discharged. He again came after 1 week and was initially scheduled for medical review after arriving via SPA referral to medical team.

Instead of localised right iliac fossa pain, a bedside review revealed persistent diarrhoea, increased frequency of bowel movements, and generalised abdominal pain, raising the possibility of a different diagnosis. Elevated WBC and CRP were found in the investigation. Point-of-care ultrasonography (POCUS) was used due to the diagnostic uncertainty, and it revealed free intraperitoneal fluid in the pelvis and Morison's pouch. These results raised the possibility of serious intra-abdominal peritonitis. The patient was started on intravenous fluids and broad-spectrum antibiotics, maintained nil by mouth, and quickly referred to the general surgery team rather than the medical team.

An immediate CT scan of the abdomen and pelvis revealed a perforated appendix, free intra-abdominal fluid, and peritonitis. The patient was transferred quickly to the general surgery OT theatre for definitive management.



Discussion

This particular case emphasises how crucial it is to carefully reevaluate patients who appear with recurring or persistent abdominal symptoms because initial diagnoses like gastroenteritis may conceal underlying surgical pathology. POCUS allowed for a quick bedside evaluation and the early detection of free intra-abdominal fluid, which led to a reevaluation of the working diagnosis. POCUS facilitates clinical decision-making, facilitates surgical referrals, and minimises delays in proper management in a busy emergency department. Patients with symptoms who have free fluid should be evaluated right away for an acute intra-abdominal disease.

Conclusion

This case illustrates how POCUS and general clinical examination can greatly increase diagnosis accuracy in patients experiencing abdominal pain. Early identification of serious intra-abdominal pathology was made possible by bedside POCUS, which prompted rapid surgical referral and effective treatment. Patient outcomes can be enhanced and diagnostic delays can be avoided by including POCUS in routine emergency abdomen assessments.

References:

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