

Sound Decisions.

A case study exploring the use of the Butterfly iQ+ in nursing care.

A Case Study by:
Harriet Howgill, RN

“Hand-held ultrasound impacts decisions I make regarding secondary care admission and patient discharge orders.”

Introduction

Time pressure is a widely recognized¹ and encountered phenomenon among nurses worldwide. Tools that support quick, accessible fact-finding at the bedside are one possible mechanism to better support nurses by providing relevant information at speed to support clinical decision-making. More information can help narrow differential diagnoses, can expedite patient triage, and may ultimately help avoid circumstances in which nurses are challenged to provide quality care in a time-intensive under-resourced environment.

Case history

A middle-aged male with metastatic cancer presented to the Acute Medical Unit (AMU). He had recently developed spinal cord compression that palliative therapy failed to improve. Blood work demonstrated severe acute renal impairment. The patient had a long-term urinary catheter in-situ and no recent history of urine output. A bladder scan was performed immediately. With the Butterfly iQ+, I was able to perform an investigation to diagnose obstructive renal failure from a blocked catheter right away. His bladder was scanned using the Auto Bladder Calculation feature of the Butterfly iQ+. His bladder was identified as a round anechoic area, was positioned centrally within the window, and the volume was auto-calculated.

The ultrasound revealed a distended bladder, with a volume of 422mls (Figs 1. and 2.) with echogenic mobile debris.

This directly and quickly informed my decision to flush the patient's catheter. Subsequent aspiration removed a large quantity of blood-stained debris from the bladder, which allowed straw-coloured urine to flow freely. 400+ mls was drained.

Imaging exam

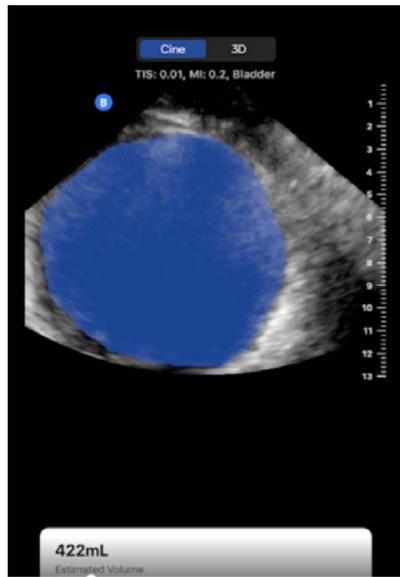


Fig 1. Cine acquisition of bladder volume.

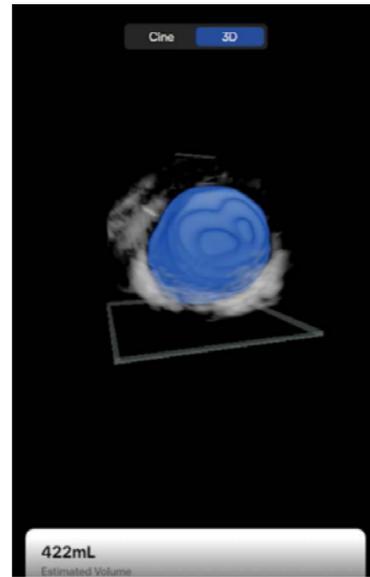


Fig 2. 3D render of distended bladder.

Conclusion

With handheld ultrasound, instead of sending the patient for departmental imaging to establish the diagnosis, I was able to detect urinary retention due to a blocked catheter immediately at the patient's bedside. This straightforward bedside intervention allowed the patient to avoid transport to the Radiology Department, accelerated treatment based on an informed result and subsequently to be discharged more quickly.

References

1. <https://pubmed.ncbi.nlm.nih.gov/30055374/>

Author



Harriet Howgill, RN

Trainee ANP in Acute Medicine, currently seconded to Critical Care Outreach Service. Special interests in resuscitation, vessel health and POCUS.