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Incidental Finding of Unusually Large Renal Cyst During Point of Care Ultrasound

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ABSTRACT

Renal cysts are common, and their frequency and size increase as patients age². Renal cysts are derived primarily from tubules and can occur anywhere between Bowman's capsule to the renal papilla¹. The cysts are composed of abnormally differentiated epithelial cells encapsulating a cavity of fluid. These abnormally differentiated cells are due to defects in the structure and function of cilia, the structures responsible for detecting urine flow as well as the epithelial composition of the epithelial architecture and repair³. According to Campbell Urology, there are three processes in which renal cysts increase in their size – proliferation of epithelial cells in the tubules, accumulation of fluid in the in the expanding tubule segment, and disturbed organization and or metabolism of the extracellular matrix¹. The latter includes imbalances of the secretory and absorption resulting in unusual accumulation of fluid in renal tubules. In this case report, we describe an unusually large renal cyst with mass effect found in patient during routine POCUS scan shift.

CASE PRESENTATION

We present a case of an unusually large renal cysts causing mass effect while incidentally performing an aortic ultrasound. The patient is a 78-year-old male with history of bladder and newly diagnosed prostate cancer presenting for suprapubic abdominal pain, nausea and vomiting. The patient recently had a foley placed and removed due to biopsy of prostate which was found to be cancerous. After removal of foley, patient came to the ER for evaluation of suprapubic pain. On physical exam, the patient was noted to have a distended abdomen without rebound, guarding, nor rigidity. Tenderness was elicited on palpation of suprapubic region.

Patient had vitals of 185/100, temp of 99.2F, pulse of 83, and SpO2 of 97% on room air. His bloodwork did show that he had a significant leukocytosis of 21.5. His creatinine was 1.09 which was at baseline. Urinalysis showed proteinuria, blood, and trace leukocyte esterase. Microscopic urinalysis revealed WBC of 11-10. A point-of-care ultrasound of his abdominal aorta was performed to evaluate for possible aortic aneurysm. During the scan, a large contained, fluid collection was visualized adjacent to the aorta on proximal and mid transverse views of the aorta.

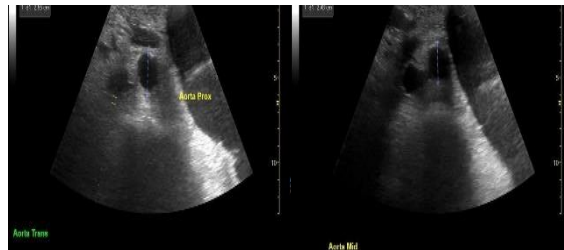


Image 1 & 2. Proximal (left) and Mid (right) transverse measurements of the aorta.

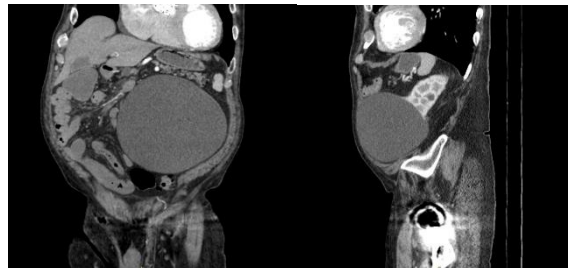


Image 3 & 4 . Coronal (left) and Sagitta (right) views of abdomen on CT.

DISCUSSION

Simple renal cysts are a common finding. However, the size and associated mass effect rendered makes the presented case unique. A pubmed search yielded two case report which describing similarly large renal cysts. Brown et al describes the finding of a 25 cm cyst in a woman presenting as obesity⁷. Another case report, Riyach et al, discuss finding a large cyst mimicking ascites measuring 35x32x22 cm on the right kidney⁶. In both case reports, the authors asserts that findings of renal cysts greater than 15 cm are rare. No case reports have been found on renal cysts causing mass effects. A general internet search has found large hepatic cysts that have caused mass effects such as that by Al-Harthi et al in which he describes 25 × 19 × 18 cm hepatic cyst displacing the pancreas and right kidney⁸.

Despite the large size of the cyst, no procedure was warranted for our patient in the past since the cyst has been stable and is being closely monitored by his urologist. Perhaps if our patient had adverse complications from the mass effect, a procedure would have been warranted to remove the fluid from the cyst. Our patient was eventually admitted and was continued to be closely followed by nephrology and urology.

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