



Case study

Pyonephrosis and pyocystis

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A 29-year-old male with end-stage renal disease on hemodialysis was admitted with abdominal pain and purulent urethral discharge. He underwent a living donor renal transplant eleven years ago but suffered graft rejection five years ago. Although anuric before this episode, patient reported having a thick, brownish, malodorous urethral discharge. He complained of pain in right lower quadrant, where the allograft was located. Contrast-enhanced computed tomography (CT) showed an enlarged transplant kidney in right lower quadrant with multiple air foci

(Fig. 1) and air-fluid level (Figs. 2 and 3). The CT also showed bladder wall thickening, intraluminal air foci and air-fluid level (Fig. 4). Cystoscopy and CT-guided percutaneous drainage of the transplant kidney both yielded copious amount of brown foul-smelling fluid, culture of which was polymicrobial and included *Proteus mirabilis* and multiple anaerobic gram-negative rods that were not identified further. Blood cultures were positive for *Proteus mirabilis* and *Bacteroides thetaiotaomicron*. Intravenous antimicrobials and transplant nephrectomy lead to resolution of symptoms. Pyonephrosis is the accumulation of pus in the hydronephrotic collecting system and is associated with suppurative destruction of the renal parenchyma [1]. Risk factors include urinary tract obstruction, immunosuppression and poorly controlled diabetes



Fig. 1. The transplanted kidney in the right lower quadrant with multiple air foci (arrows) within the dilated collecting system.



Fig. 2. The arrow shows the air-fluid level in the transplant kidney.

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Fig. 3. Coronal view of the air-fluid level (arrow) in the transplant kidney.



Fig. 4. The bladder has a thickened wall (yellow arrow), intraluminal air foci (arrowhead) and air-fluid level (white arrow).

mellitus. Pyocystitis is the accumulation of pus in the bladder, a complication of a non-functioning bladder in anuric patients [2].

References

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