

CLINICAL QUIZ (p144-145) ANSWER

1. Longitudinal scan showed an enlarged right kidney measuring 11.1 cm in length. There was gross hydronephrosis with thinned renal cortex. The renal pelvis was grossly dilated. Multiple fluid-levels were noted within the collecting system while the right ureter was not seen. The ultrasound findings suggested right pyonephrosis, which may be a complication of pelviureteric junction (PUJ) obstruction.
2. Sepsis work up, particularly proper urine samples for culture and blood culture would help to identify the micro-organism that cause the infection and guide the antibiotic treatment. Blood test for serum urea, creatinine and electrolytes helped to delineate severity of renal damage. A Tc99m-MAG₃ (Mercaptoacetyltriglycine) lasix scan would be helpful to delineate the presence and site of obstruction. Sometimes, it will be difficult to conclude the presence of obstruction by Tc99m-MAG₃ scan if renal function is markedly impaired. One may need to repeat the scan later after normalization of renal function or after resolution of active infection.
3. Tc99m-MAG₃ scan showed an impaired perfusion and function over right kidney (Figure 2a -posterior view of kidneys). Persistent hold-up of tracer activity at right kidney was seen in the diuretic renogram as well as post micturition images (Figures 2b & c). Figure 2d showed the time activity curves of different phases of the renal study, namely, the perfusion, renogram, and diuretic renogram. The curves of the left kidney were normal, while the renogram and diuretic renogram curves of the right kidney showed progressive upward pattern. Moreover, no ureteric activity was noted. The diagnosis was right PUJ obstruction.
4. The urinary tract infection should be treated vigorously with board-spectrum antibiotics. If the infection could not be controlled with antibiotics, an urgent release of the urinary obstruction would be mandatory. Indications of pyeloplasty in PUJ obstruction include: (i) presence of symptoms or complications like recurrent flank pain, haematuria, renal calculi or urinary tract infection; (ii) a drop in renographic differentiate renal function of >10%. Early pyeloplasty is preferred if (i) initial differentiate function of the hydronephrotic kidney is <35-40% and (ii) the maximum anterior-posterior pelvic diameter (APD) is >50 mm. Our patient responded well to intravenous cefuroxime and amikacin despite his urine culture did not show significant bacteria count. Follow-up ultrasound kidney after fever subsided showed a reduction in APD of right kidney to 15 mm and no fluid level was detected. Because of this episode of acute pyonephrosis, he subsequently underwent an elective right pyeloplasty.

Answers of January Issue 2007

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| (A) 1. d ; 2. e. ; 3. e; 4. e; 5. e | (F) 1. a ; 2. c. ; 3. e; 4. d; 5. c |
| (B) 1. d ; 2. a. ; 3. d; 4. b; 5. b | (G) 1. d ; 2. a ; 3. c; 4. a |
| (C) 1. c; 2. e. ; 3. a; 4. b; 5. a | (H) 1. a ; 2. a. ; 3. c; 4. b; 5. e; 6. c |
| (D) 1. b ; 2. d. ; 3. b; 4. b; 5. c | (I) 1. c ; 2. a. ; 3. d; 4. b; 5. e |
| (E) 1. b ; 2. c. ; 3. b; 4. a; 5. b; 6. c | (J) 1. d ; 2. c. ; 3. b; 4. c; 5. b |