

Case report: azotemia secondary to bilateral ureteral kinking from ureteral stents placed at the time of bladder exstrophy closure

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We report the case of a neonate who underwent bladder exstrophy repair on the second day of

life. Bilateral ureteral stents were placed intraoperatively. Postoperatively azotemia developed secondary to kinking of the proximal ureter bilaterally. Issues in diagnosis and management are discussed.

Key Words: ureteral stent, hydronephrosis, ureteral obstruction, bladder exstrophy

Introduction

Ureteral stents are routinely placed to maintain urinary drainage for the first few days following

primary repair of bladder exstrophy. We report a rare case in which the attempt to advance bilateral ureteral stents intraoperatively resulted in proximal ureteral kinking and complete ureteral obstruction at the level of the ureteropelvic junction bilaterally.

Case report

A 24 hour old full term male with classic bladder exstrophy was admitted to our institution for primary

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closure of bladder exstrophy. Preoperative abdominal ultrasonography revealed normal kidneys without evidence of hydronephrosis. Complete bladder exstrophy and epispadias repair was performed on the second day of life. Each ureter was intubated intraoperatively using a 5 French feeding tube and advanced, attempting to position the tip of the stent at level of the renal pelvis. Post-operatively the patient developed severe oliguria despite appropriate intravenous hydration. Serum creatinine increased to 234 mmol/l (normal ≤ 100 mmol/l) within the next 24 hours. Doppler ultrasonography revealed bilateral grade 3 hydronephrosis and an increased resistive index (right = 0.95, left = 0.88, normal less than 0.66). Urinary obstruction was suspected and bilateral stentograms revealed proximal ureteral fetal folds which kinked due to pressure by the tip of the feeding tubes. Minimal passage of contrast to the renal pelvis was seen bilaterally Figure1. Both stents were repositioned and urinary drainage was noted

immediately after the stents were displaced. Actually post-obstructive diuresis occurred for a short period which resolved in 3 days following repositioning. Serum creatinine returned to normal within 48 hours. Repeat ultrasonography showed complete resolution of the bilateral hydronephrosis and normalization of the resistive index.

Discussion

Ureteral stents are routinely placed in a variety of urological procedures in order to maintain adequate urinary drainage. Our experience suggests that it is very important to ensure that the tip of the ureteral catheters are well positioned inside the renal pelvis. During the procedure it is prudent to verify if constant drainage of urine occurs. In case of doubt we advice to proceed with a intra-operative retrograde ureterogram in order to be sure that the position of the catheter is adequate. \square



Figure 1. Ureteral stentogram showing bilateral proximal ureteral kinking caused by the tip of the feeding tubes. There is minimal passage of contrast to the renal pelvis bilaterally.