

Giant Abdominoscrotal Hydrocele Obstructing the Right Kidney

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Abdominoscrotal hydrocele is a rare condition in which the hydrocele sac is extended beyond the scrotum to the abdomen via the internal ring. ASH is a rare condition with less than 100 cases described in the medical literature. We report the case of a giant ASH chronically obstructing the right kidney and compromising renal function. To the best of our knowledge such an association has not been described before.

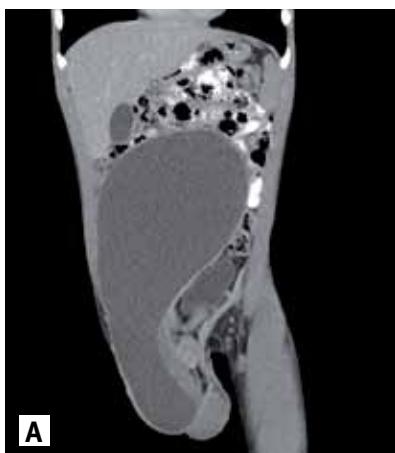
PATIENT DESCRIPTION

A healthy 15 year old male presented with an enlarged right scrotal and right abdomi-

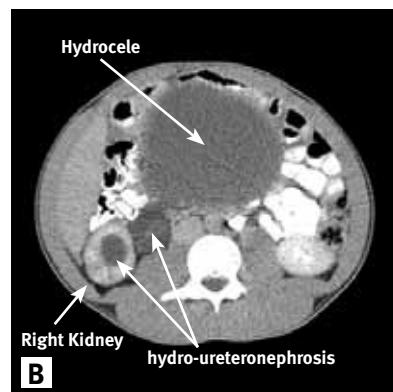
nal mass. Emergency room sonography revealed a fluid-filled mass in the scrotum and the abdomen; both testicles were identified in the scrotum. Laboratory tests (complete blood workup and urinalysis) were normal. A non-contrast computerized tomography scan demonstrated a cystic fluid-filled mass occupying the right abdomen and extending to the right scrotum. The mass compressed the right ureter, causing right upper uretero-hydronephrosis with thinning of the right renal parenchyma. The urinary bladder was displaced by the mass to the left [Figure A]. To clarify the relationship between the mass and the obstructed right upper tract, a decision was taken to continue with intravenous contrast injection and early and late scanning (urography protocol). The study revealed late and dull perfusion to the right kidney with no excretion of contrast material to the collecting system [Figure B]. The patient was transferred to the interventional radiology

suite and under anesthesia underwent insertion of a right percutaneous nephrostomy tube. A baseline DMSA scan showed 14% relative function on the right and 86% compensatory function on the left. Via an inguinal approach the cystic component was removed from the abdomen, the processus vaginalis was ligated, and the inguinal canal was reconstructed. Several days post-surgery an antegrade pyelography [Figure C] was performed showing a slightly tortuous ureter; however, quick passage of contrast material to the bladder without any obstruction was noted. The nephrostomy tube was closed. After 48 hours with no symptoms following renal ultrasound, which showed no progression in hydronephrosis, the PCNT was removed and the patient was discharged. Follow-up ultrasound 3 months later showed resolution of the hydronephrosis.

PCNT = percutaneous nephrostomy tube



[A] Computed tomography coronal view, showing an hourglass-shaped fluid-filled mass, extending from the right scrotum to the abdominal cavity



[B] CT axial view at the level of the lower renal poles, showing the upper portion of the hydrocele sac, right kidney hydro-ureteronephrosis, reduced contrast material uptake in the right kidney, and no excretion from the right kidney



[C] Antegrade nephro-ureterography following ASH resection. The upper ureter is still tortuous; however, passage of contrast material to the bladder can be seen

COMMENT

Abdominoscrotal hydrocele is a rare entity especially in the pediatric population. The mechanism of ASH evolvement includes partial obliteration of the processus vaginalis, allowing fluid entrance from the peritoneal cavity to the sac but obstruction of the flow from the sac to the abdominal cavity. The hydrocele sac acts like a unilateral valve, allowing unidirectional flow only, from the abdominal cavity to the sac. With time the increased fluid volume stretches the sac in numerous directions, leading to its extension to the abdomen [1].

Hydronephrosis is a well-documented complication of ASH [2], but in our case obstruction was prolonged, resulting in severely reduced right renal function and compensatory hypertrophy of the contralateral kidney. Obstruction could be related to direct compression of the ureter and pressure on the urinary bladder distortion of the trigon and of the right ureterovesical junction.

Management of ASH is surgical since this lesion may cause severe complications, such as respiratory distress, lower limb edema due to pressure on major blood vessels in the pelvis [3], testicular dysmorphism [4] and, rarely, malignant transformation of the tunica of the abdominal hydrocele [5].

To the best of our knowledge this is the first report of a prolonged kidney obstruction with renal function deterioration. The most important “take-home message” from our case is the need for awareness among patients and practitioners (family doctors, pediatricians, school nurses). Pubertal and post-pubertal boys should be educated about self-examination and should be encouraged to seek medical help as soon as an abnormal or scrotal finding is suspected. Prompt renal drainage, excision of the obstructing mass, and long-term follow-up by a urologist and nephrologist were the key points in the management of our patient.

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