ARCHIVES OF HELLENIC MEDICINE: ISSN 11-05-3992

CONTINUING MEDICAL EDUCATION
ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Surgery Quiz – Case 34

ARCHIVES OF HELLENIC MEDICINE 2021, 38(4):568–569
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2021, 38(4):568–569

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A 88-year-old male, with a history of stage I arterial hypertension under amlodipine, stage II chronic obstructive pulmonary disease under formoterol and severe benign prostatic hyperplasia with underactive bladder under permanent Foley catheter due to poor response to medical treatment and transurethral resection of the prostate (TURP), presented to the emergency department with symptoms and signs of catheter-related urinary tract infection (lower abdominal discomfort, malodorous and cloudy urine). Vital signs (body temperature, blood pressure, respiration and pulse rate) were normal and no symptoms and signs of dehydration were present. Physical examination revealed a right incarcerated inguinoscrotal hernia with the right testicle within the scrotum separable from the hernia and without findings of bowel obstruction. Urine microscopy revealed high-level pyuria and positive nitrate test. Complete blood count test was within normal range, electrolytes, bilirubin, creatine kinase and troponin levels were within normal range, whereas kidney function tests were suggestive of stage III acute kidney injury (serum creatinine 4.8 mg/dL with an 3.5 times increase from baseline). Abdominal radiographs revealed no findings of bowel obstruction. Renal ultrasonography revealed mild to moderate bilateral hydronephroureterosis without structural renal disease. Abdominal computed tomography (CT) performed to establish the underlying cause of obstructive uropathy as shown in figures 1 and 2.

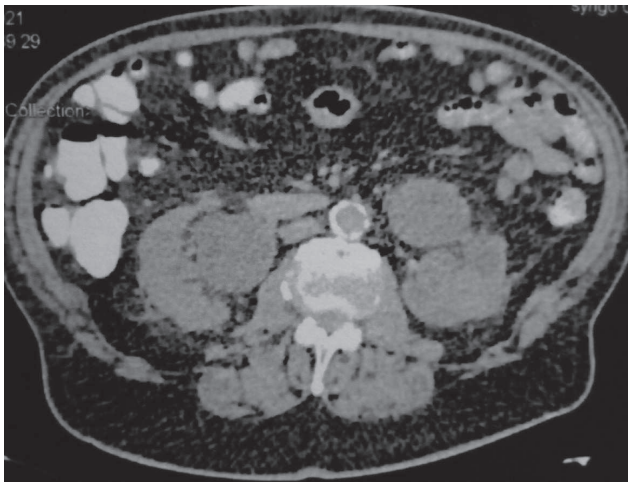

Figure 1

Which was the cause of obstructive uropathy?

Comments

Abdominal CT performed to establish the underlying cause of bilateral hydronephroureterosis (fig. 1) which eventually seemed to be the urinary bladder-containing direct inguinoscrotal hernia. As shown in figure 2, the bladder apex, body and fundus along

Figure 2

with the bladder trigone protruded anteromedial to the inferior epigastric vessels into the hernia sac down to the scrotal cavity; no herniation of bowel loops depicted. The bulging bladder hernia entrained the bladder trigone beyond the hernia neck into the inguinal canal leading to ureterovesical junction compression and subsequently bilateral ureteral obstruction. No other potential etiologies of hydronephrosis identified preoperatively. The patient submitted to open mesh plug hernioplasty for a primary, medial, size 3 (EHS PM3F0) inguinoscrotal hernia containing exclusively the greater part of the urinary bladder. The herniated bladder was rigorously mobilized from the scrotum and the spermatic cord and then reduced through the hernia neck at the posterior wall of the inguinal canal; the approximately 5.5 cm hernia orifice in size reinforced by suture fixation of two low-weight large porous polypropylene plugs along with placement and suture fixation of the same mesh on the transversalis fascia covering the plugs. Postoperative course was uneventful. Obstructive uropathy (kidney function tests and hydronephroureterosis on renal ultrasonography) depicted significant improvement in the immediate postoperative period; a cystoscopy also performed which revealed no other cause of ureteral obstruction.

Inguinal bladder hernia is a rare condition with a reported incidence of 1 to 3% of all inguinal hernias. Incidence is higher in obese and elderly male patients. Pathophysiology usually involves urinary bladder outlet obstruction leading to chronic distention and atony along with weakness of the abdominal wall musculature. Hernia sac can contain any portion of the bladder; there are only a couple of case reports in the literature describing ureter or ureterovesical junction herniation through the hernia orifice causing hydronephrosis and obstructive uropathy. Small inguinal bladder hernias are usually asymptomatic, whereas large hernias usually present with swelling in the groin and scrotum along with lower urinary tract symptoms due to bladder obstruction or infection. Most inguinal bladder hernias are diagnosed intraoperatively. However, thorough preoperative investigation is crucial as operative management can be modified in cases of coexistence bladder or prostate pathology and iatrogenic bladder injury can be avoided. Ultrasonography, voiding cystourethrography, abdominal CT and cystoscopy are indicated to confirm the diagnosis and to evaluate bladder and prostate coexistence pathology such as bladder malignancy. The standard treatment of inguinal bladder hernia is open reduction of the herniated urinary bladder followed by herniorrhaphy commonly performed through the inguinal incision. Bladder resection is rarely indicated in cases of bladder wall necrosis, a tight hernia neck preventing reduction and the presence of malignancy in the herniated bladder.

References

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Diagnosis: *Incarcerated inguinoscrotal urinary bladder hernia causing obstructive uropathy*