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Urinary Tract Cistern as a Rare Cause of Huge Abdominal Cystic Mass in an Infant: A Case Report

İnfantta Dev Abdominal Kistik Kitleye Neden Olan Nadir Bir Üriner Sistem Sarnıcı: Olgu Sunumu

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ABSTRACT

Megaureter is defined as a lower-end ureter diameter greater than 7 mm in children. Although often diagnosed antenatally, postnatal presentation can occur with urinary tract infections, abdominal pain, hematuria, or incidentally. We present a rare case of a urinary cistern, which was an ectopic ureter of an aborted left duplicated system, forming a giant abdominal mass and causing contralateral hydroureteronephrosis with bilateral undescended testes.

Keywords: Urinary tract cistern, megaureter, abdominal cystic mass, undescended testes

ÖZ

Çocuklarda megaüreter, alt uç üreter çapının 7 mm'den büyük olması olarak tanımlanır. Genellikle antenatal dönemde teşhis edilse de, postnatal olarak idrar yolu enfeksiyonları, abdominal ağrı, hematüri veya tesadüfen tespit edilebilir. Bu olguda, sol duplike sistemin gelişememiş ektopik üreteri olduğu düşünülen ve dev bir abdominal kitle oluşturan nadir bir üriner kist örneğini sunuyoruz. Bu kitle, karşı tarafta hidroureteronefroza ve bilateral inmemiş testislere neden olmuştur.

Anahtar Sözcükler: Üriner sistem sarnıcı, megaüreter, abdominal kistik kitle, inmemiş testis

INTRODUCTION

In children, a lower-end ureter diameter greater than 7 mm is considered megaureter (1). Apart from antenatal ultrasound, postnatal diagnosis can be made after admission with urinary tract infection, abdominal pain, hematuria, uremia, or incidentally (2). We present a case of a urinary cistern, considered to be the left ectopic ureter of an aborted left duplicated system, which was so enlarged that it formed a giant palpable mass in the abdomen, causing hydroureteronephrosis of the contralateral right kidney and bilateral undescended testes.

CASE REPORT

A 1-year-old male patient was referred to our outpatient clinic due to a palpable mass in the abdomen. Antenatal ultrasonography done elsewhere, revealed atrophic left kidney and hydronephrosis of the right kidney. The pediatrician started antibiotic prophylaxis for the patient after having a urinary tract infection. On physical examination, a mobile and painless firm mass of approximately 10 cm was palpated inferior to the umbilicus (Figure 1). Both the patient's testicles were nonpalpable, and the scrotum was hypoplastic. The laboratory evaluation was normal, while the radiological imaging revealed left atrophic kidney, and moderate right hydronephrosis. The cystic mass was thought to be associated with the left urinary tract, producing a urinary cistern, which was later identified as the left ectopic ureter of an aborted left duplicated system entering the urethra posterolaterally during surgery (Figure 2). The bladder was pushed to the right by a 10 cm lower abdominal cystic mass extending to the midline and superiorly from the umbilicus; and the diameter of the lower end of the right ureter was reported as 14 mm. Bilateral testes were not observed in the scrotal sac in ultrasonography. During voiding cystourethrography, the patient could be catheterized with difficulty, as the bladder was pushed to the right by the mass, whose capacity was small. There was

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no vesicoureteral reflux. Dimercaptosuccinic acid static kidney scintigraphy showed differential function of 98% for the right kidney and 2% for the left.

After cystoscopy and urethral catheterization, it was decided that the patient would undergo abdominal exploration. In cystoscopy, the anterior urethra was normal, but the bladder could not be entered from the posterior urethra because the bladder neck was lifted and angulated by the mass. Using a midline vertical incision in the supine position, the mass that filled the abdomen was exposed; the superior part was deperitonealized. It was removed en bloc by separating it from the bladder, the left ureter with drainage of the atrophic kidney, the posterior urethra, and the rectum, which was attached inferiorly and posteriorly by sharp-blunt dissection. Due to the thinning of the posterior bladder wall, an 8 Fr cystostomy catheter was left in the bladder. Then, a left nephroureterectomy was performed for the atrophic kidney and ureter. Both testicles were located intraperitoneally, and bilateral vasa deferentia were absent. The right testicle was severely hypoplastic; thus, the left orchidopexy and right orchiectomy were performed. The patient's mass pathology was reported as a benign cystic lesion that may have arisen from unregressed embryogenic residue.

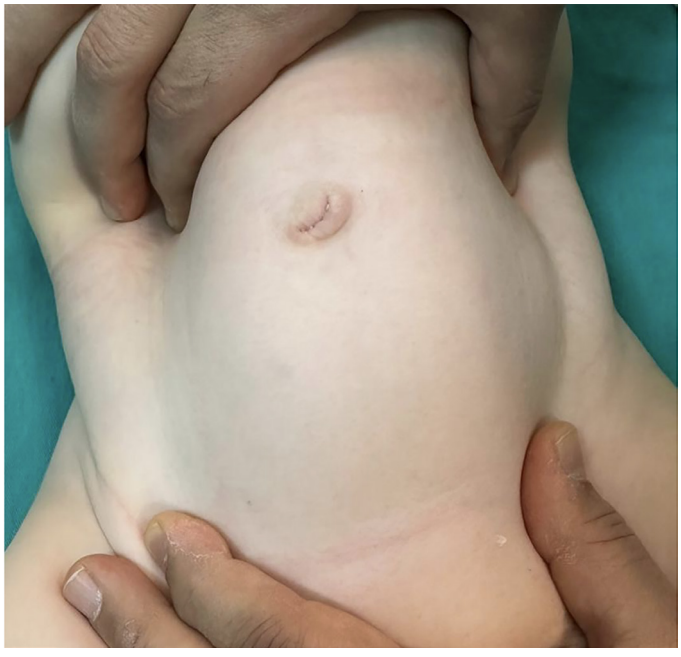

Figure 1. A mobile and painless giant abdominal mass

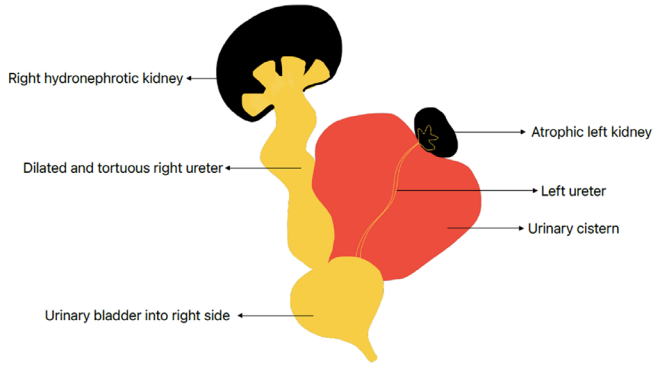

Figure 2. Schematic drawing of the intraoperative findings

DISCUSSION

Very few cases have been reported, as is the case with the giant ureter in a duplex system that presented as an abdominal mass in neonate (3). When all the cases were considered in the limited literature, fetal abdominal cysts may be associated with chromosomal abnormalities. In these cases, chromosome analysis must be performed (4). Our patient's karyotype analysis resulted as normal. Antenatal ultrasonography is critical in the diagnosis of abdominal cystic masses (5). Although detecting an apparent fetal abdominal cyst with ultrasonography is straightforward, identifying its true origin can be problematic. However, fetal abdominal cysts can be derived from different systems (such as hepatobiliary and genitourinary tracts); thus, the prognoses of masses with different origins vary greatly (6). Therefore, accurate prenatal diagnosis can provide valuable information for clinicians. The differential diagnosis of cystic lesions in the fetal abdomen includes hepatobiliary cysts such as choledochal cysts and cystic biliary atresia, renal and adrenal cysts, gastrointestinal cysts such as intestinal dilatations and duplications, ovarian cysts, ureteroceles, dilated ureter. It is very important in such cases to rule out other common pathologies, such as an ovarian cyst or other pelvic cystic masses, both of which can present similarly and show bilateral hydroureteronephrosis (7). Radiological imaging and anatomical dissection are important aids in the differential diagnosis. Hepatobiliary cysts are proximal to and associated with the liver, while intestinal cysts and duplications involve the mesentery. Ovarian cysts are a possibility in the female fetus. Male genital anomalies such as undescended testicles and absence of vas deferens may also be observed accompanying cystic masses, as in our case (8).

In this case, the cystic mass was considered to be associated with the left urinary tract, producing a urinary cistern. This cistern was later considered to be the left ectopic ureter of an aborted left duplicated system, entering the urethra posterolaterally during surgery. Left nephroureterectomy was performed for the atrophic kidney and ureter. In addition, preserving the compressed contralateral ureter of the solitary functioning kidney during dissection during nephroureterectomy is an important technical point that should always be kept in mind (9).

CONCLUSION

The pathogenesis of primary megaureter remains unclear and may involve embryological remnants. Cystic masses and urologic cysts can may be associated with megaureter and duplicated systems. In infants with abdominal masses, consider rare causes such as urologic cisterns related to ectopic ureters, aborted duplications, or embryological remnants. Radiological imaging is crucial for differential diagnosis.

Ethics

Informed Consent: It was obtained.

Footnotes

Authorship Contributions

Surgical and Medical Practices: M.Ö.T., S.G., Concept: E.C.B., N.K., M.Ö.T., S.G., Design: N.K., Supervision: M.Ö.T., S.G., Resources: N.K., M.Ö.T., Material: S.G., Data Collection or Processing: E.C.B., N.K., Analysis or Interpretation: E.C.B., M.Ö.T., Literature Search: N.K., Writing: E.C.B., N.K., M.Ö.T., Critical Review: M.Ö.T., S.G.

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REFERENCES

1. Farrugia MK, Hitchcock R, Radford A, Burki T, Robb A, Murphy F, et al. British Association of Paediatric ürologists consensus statement on the management of the primary obstructive megaureter. J Pediatr Urol. 2014; 10: 26-33.
2. Shokeir AA, Nijman RJ. Primary megaureter: current trends in diagnosis and treatment. BJU Int. 2000; 86: 861-8.
3. Annigeri VM, Hegde HV, Patil PB, Halgeri AB, Rao PR. Congenital giant megaureter with duplex kidney presenting as abdominal lump in a neonate. J Indian Assoc Pediatr Surg. 2012; 17: 168-70.
4. Ozyuncu O, Canpolat FE, Ciftci AO, Yurdakok M, Onderoglu LS, Deren O. Perinatal outcomes of fetal abdominal cysts and comparison of prenatal and postnatal diagnoses. Fetal Diagn Ther. 2010; 28: 153-9.
5. Catania VD, Briganti V, Di Giacomo V, Miele V, Signore F, de Waure C, et al. Fetal intra-abdominal cysts: accuracy and predictive value of prenatal ultrasound. J Matern Fetal Neonatal Med. 2016; 29: 1691-9.
6. Lv M, Zhao B, Luo Q. Prenatal diagnosis and prognosis assessment of fetal intra-abdominal cystic lesions: a retrospective study in 264 cases. J Obstet Gynaecol. 2019; 39: 922-7.
7. Wang Y, Wang X, Zeng K, Wang B, Zhao D, Yang Z, et al. Fetal abdominal cystic masses: clinical spectrum and prenatal ultrasound diagnosis. J Ultrasound Med. 2022; 41: 2775-87.
8. Goto H, Kanematsu A, Yoshimura K, Miyazaki Y, Koyama T, Yorifuji T, et al. Preoperative diagnosis of congenital segmental giant megaureter presenting as a fetal abdominal mass. J Pediatr Surg. 2010; 45: 269-71.
9. Khattar N, Dorairajan LN, Kumar S, Pal BC, Elangovan S, Nayak P. Giant obstructive megaureter causing contralateral ureteral obstruction and hydronephrosis: a first-time report. Urology. 2009; 74: 1306-8.