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CASE REPORT

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Giant Hydronephrosis Mimicking an Intraabdominal Mass

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Abstract: Giant hydronephrosis (GH) is a rare entity that may mimic progressive and benign abdominal cystic tumors. Despite the increase in the use of prenatal ultrasound, GH may still be seen in the adult population.

We report a case of GH in a 19-year-old female who presented with a progressive abdominal distention and other gastrointestinal symptoms. Diagnostic and therapeutic features of this rare case are discussed in light of the current literature.

Key Words: Hydronephrosis, giant, abdominal cyst

Alışılmamış İntraabdominal Kitleye Neden Olan Dev Hidronefroz

Özet: Dev hidronefroz nadir görülen bir durum olup, ilerleyici ve bening abdominal kistik tümörlerle karışabilmektedir. Prenatal ultrasonografinin yaygın olarak kullanılmasına rağmen, dev hidronefroz hala erişkin populasyonda görülebilmektedir.

Bu vaka takdiminde ilerleyici abdominal distansiyon ve diğer gastrointestinal semptomları olan dev hidronefrozlu, 19 yaşında bir kadın hasta sunulmuştur. Bu nadir olgunun tanısal ve terapötik özellikleri güncel literatür ışığında tartışılmıştır.

Anahtar Sözcükler: Hidronefroz, dev, abdominal kist

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Introduction

Giant hydronephrosis (GH) is the presence of >1L of fluid in the collecting system. This situation is a rare urological entity in adults (1). It is usually secondary to ureteropelvic junction obstruction. Other causes include stone disease, trauma, renal ectopia and ureterovesical junction obstruction (2,3). Giant hydronephrotic kidney may cause intestinal obstruction, hypertension, obstructive jaundice, and contra-lateral ureteropelvic junction obstruction (4). Additionally, GH can mimic cystic renal tumors. It is seen more often in males than in females (2.4:1). More than 500 cases of GH have been reported in the literature (5). We report a case of GH in a 19-year-old woman.

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Case Report

A 19-year-old woman was admitted to our clinic with a progressive abdominal distention with recurrent attacks of nausea and mild abdominal pains during the previous two months. Medical history was unremarkable. The physical examination revealed extreme abdominal distention and tenderness in the right flank area. Additionally, there was a huge mass upon palpation which was dull to percussion. Blood laboratory tests and urinalysis were normal. Ultrasonography (US) revealed a huge right cystic mass occupying nearly the entire abdominal cavity and compensatory hypertrophy of the left kidney with normal parenchymal thickness. Plain abdominal X-rays showed no abnormality. Retrograde pyelography revealed right ureter displaced toward the left with tortuous appearance. Computerized tomography (CT) was obtained with a 16-row multidetector scanner (MDCT Toshiba Medical Systems). Sagittal and coronal

multiplanar CT images demonstrated a giant right cystic mass occupying almost the entire abdominal cavity. The mass was hypodense, with multiple conjoined cysts, thinly septated and localized at the right retroperitoneum, extending to the pelvis. Renal tissue considered as the upper pole was also present on the immediate superomedial adjacent side of the cystic mass. The upper pole of the ureter was also displaced toward the left. Renal parenchyma was absent on middle and lower poles (Figure 1 a,b). It was concluded that the mass had been the middle and lower poles of the right kidney and that there was incomplete collecting system duplication (Figure 2).

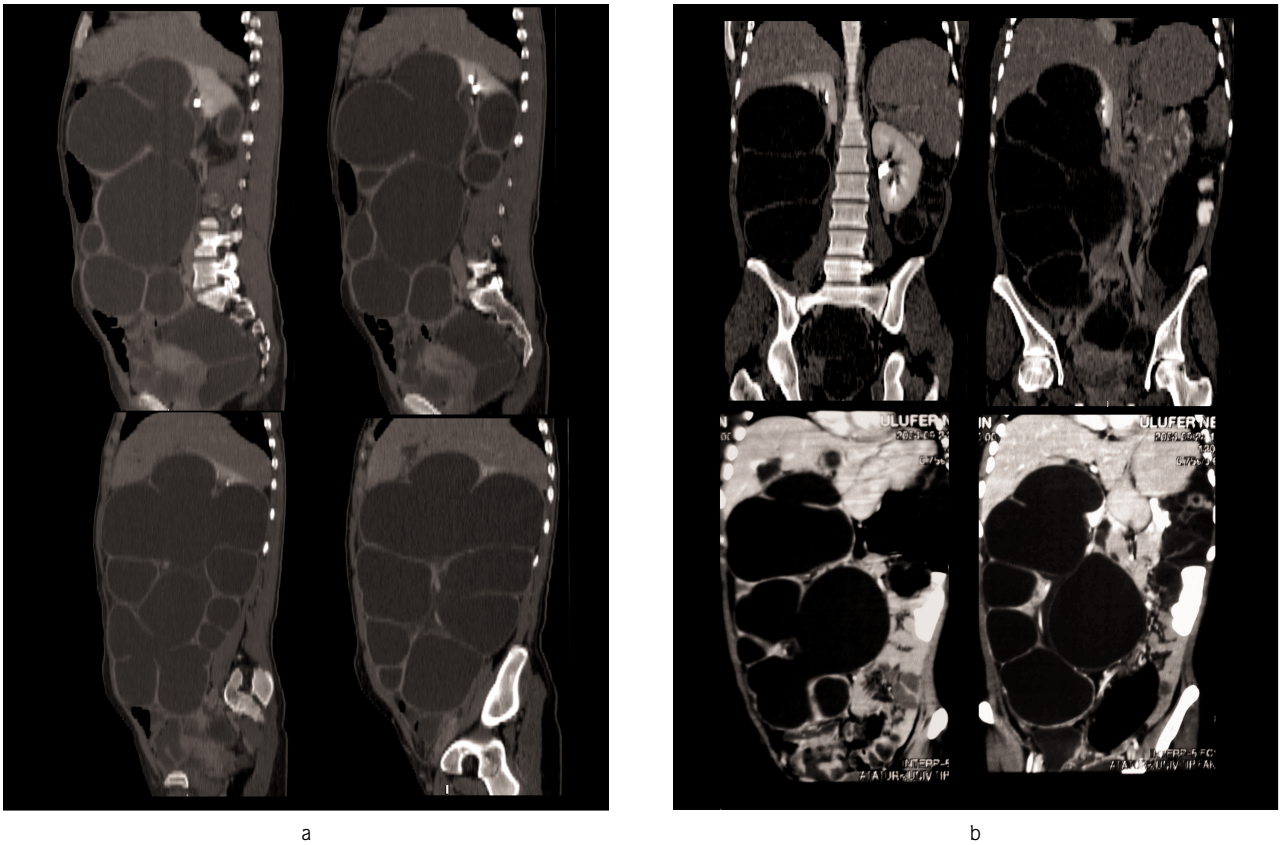
Renal tissue was detected as the upper pole of the right kidney with CT scan; nevertheless, a decision was made for nephrectomy because renal tissue was minimal, and compensatory hypertrophy was detected in the other kidney. After informed consent was obtained from the patient, total right nephrectomy was performed. Incomplete ureteral duplication was observed and the dimensions of the right kidney were measured as 220 x 200 x 180 mm (Figure 2). Approximately 5000 ml fluid was drained from the pelvicalyceal system. The patient made an uneventful recovery in the postoperative period.

Histopathological examination of the right kidney revealed severe dilatation of the pelvicalyceal system and chronic pyelonephritic changes.

Discussion

Giant hydronephrosis is a rare urological entity in patients of all ages (1,2). The most common cause of GH is ureteropelvic junction obstruction, but stone disease trauma, renal ectopy and ureteral tumor have also been reported (2,6). In our case, a narrowed segment of the ureter was observed at the ureteropelvic junction.

Giant hydronephrosis may present with urinary tract infection, renal insufficiency or gross hematuria after



a b

Figure 1 a and b. Sagittal and coronal multiplanar CT images demonstrating a giant cystic mass occupying the right side of the abdomen and middle line.

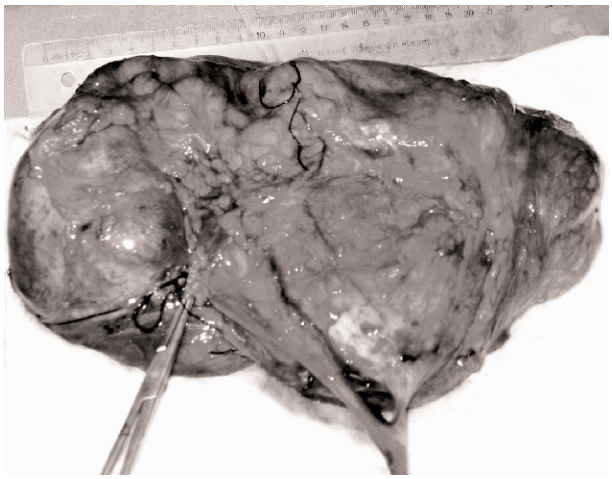


Figure 2. Pathologic specimen. Giant hydronephrotic right kidney, 220 x 200 x 180 mm, with a weight of >5 kg.

trauma in adults (3). However, patients usually remain asymptomatic until late stages, because this situation usually progresses slowly (2). Abdominal US is the first-line diagnostic approach to suspected hydronephrosis (1). Although diagnosis is readily revealed by US in most patients, it may sometimes be confused with other cystic masses. In such cases, CT and magnetic resonance (MR) images were helpful in the differential diagnosis (1,6). Schrader et al. (7) reported GH of more than 15 kg in the right kidney. In another report, in a 12-year-old boy with GH, the hydronephrotic kidneys contained 13.5 L of urine (1).

Giant hydronephrosis has been treated with various procedures such as pyeloplasty, nephrectomy, or percutaneous nephrostomy placement. Additionally, calycoureterostomy, calycocystostomy, and Boari flap calycovesicostomy were used for preservation of the renal parenchyma (8). Hemal et al. (9) reported that the relief of obstruction alone may not be adequate for renal salvage, and that nephroplication and nephropexy are suggested to improve drainage after the relief of obstruction in hydronephrotic kidneys. Jindal and associates (10) described a complete laparoscopic approach for pyeloplasty combined with nephroplication and nephropexy. The essential aim of treatment of GH should be preservation of the parenchymal loss. Despite the widespread use of prenatal ultrasound and development of new diagnostic techniques, GH may still be seen in all age groups. In conclusion, we suggest that GH should be considered in the differential diagnosis of intraabdominal cystic masses.

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