

## ECTOPIC PELVIC KIDNEY MIMICKING ADNEXAL MASS

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### SUMMARY

*Ectopic kidney, common developmental disorder in women with abnormalities of the genitourinary system and in clinic, mimicking adnexal pathologies. In this case report, hydronephrosis developed a pelvic ectopic kidney mimicking adnexal cystic pathology.*

**Key words:** anomaly, ectopic kidney, hydronephrosis

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### ADNEKSİYEL KİTLEYİ TAKLİT EDEN EKTOPIK PELVİK BÖBREK

### ÖZET

*Ektopik pelvik böbrek, genitoüriner sistem anomalisi olan kadınlarda yaygın gelişim anomalisidir ve klinikte adneksiyel patolojileri taklit etmektedir. Bu olgu sunumunda hidronefroz gelişen bir pelvik ektopik böbrek adneksiyel kistik patolojiyi taklit etmektedir.*

**Anahtar kelimeler:** anomali, ektopik böbrek, hidronefroz

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### INTRODUCTION

Adnexal masses consist of abnormalities which can be detected in almost all age groups of women. These abnormalities demonstrate different characteristics during reproductive age, require surgical treatment, and monitored with clinical and laboratory findings. During childhood, dysgerminomas induce formation of adnexal masses, while ovarian functional cysts in puberty, and ovarian tumors during postmenopausal period most frequently encountered adnexal masses<sup>(1)</sup>.

Although cystic formations are not infrequently

detected during pelvic examination, in the majority of these patients, ovarian pathology is detected as an adnexal mass. However many pelvic pathologies appear as adnexal masses leading to establishment of misdiagnosis.

Peritoneal inclusion cysts, paraovarian cysts, appendicular mucocele, uterine myoma, denomyosis, and hydrosalpinx and alike should be evaluated in this category<sup>(2)</sup>. Pelvic kidney is probably the most important abnormality appearing as an adnexal mass apart from pelvic organs.

Pelvic kidney is known to develop during 6th and 9th weeks of intrauterine life at a stage of metanephrosis

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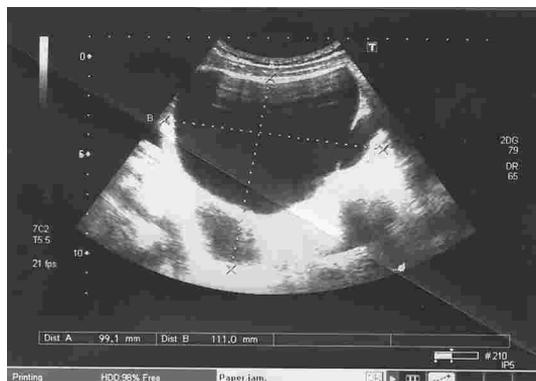
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because of absence of cellular migration. Its incidence is indicated as 1/2000<sup>(3)</sup>. Though ectopic kidney with a pelvic location is mostly asymptomatic, in some cases it results in frequently recurrent urinary tract infections secondary to hydronephrosis, and vesicoureteral reflux<sup>(4)</sup>. In this case report we aimed to discuss a patient intraoperatively diagnosed as pelvic kidney which mimicked an adnexal pathology.

### CASE REPORT

A 24-year-old unmarried patient referred to our clinics from an external medical center with an initial diagnosis of pelvic mass. Pelvic ultrasound of the patient with a medical history of left renal agenesis revealed an anechoic cystic, septated, multilocular mass in the left adnexal region measuring 100 x90 mm (Figure 1). The patient with CA-125 value of 9.69 U/mL was operated with the initial diagnosis of pelvic mass. Through an infraumbilical incision, abdominal cavity was entered, uterus, bilateral tubal, and ovarian structures were unremarkable during exploration. A retroperitoneal, cystic mass with a diameter of nearly 15 cm localized in the left pelvic cavity was observed. Continuity of this cystic formation along the left ureteral tract was detected. Because of a previous diagnosis of left renal agenesis, pelvic cystic formation was thought to be associated with nonfunctional kidney, and intraoperative participation of the urology operating team was requested.



**Figure 1:**

Urologists performed left nephrectomy, and the operation was terminated after hemostatic control. Then the patient was discharged from our clinics on the 2nd postoperative day with an improved health state.

Histopathology report of the patient disclosed chronic pyonephritis and hydronephrosis in the excised kidney.

### DISCUSSION

Ectopic kidney is known to develop as a result of inability of the fetal renal tissue to migrate into its normal anatomic location during 6<sup>th</sup>-9<sup>th</sup> weeks of the intrauterine life. This developmental anomaly is associated with uterine (unicornuate, bicornuate uterus and rudimentary horn) and vaginal (vaginal duplication, vaginal atresia) anomalies in 20-66% of the cases<sup>(5)</sup>. In this case report we did not encounter any other concomitant abnormality.

Although most cases are asymptomatic, significant number of cases are diagnosed during plain radiographic or intravenous pyelographic examinations performed for other reasons<sup>(6)</sup>. Even though most of the patients with diagnosis of pelvic kidney are asymptomatic, renal dysfunction, and hydronephrosis secondary to ureteropelvic obstruction may develop in these patients. However usually pelvic ectopic kidney has a smaller and more round ultrasonographic appearance when compared with normal kidneys. Although renal parenchyma of ectopic kidney can be evaluated by ultrasound, in cases with hydronephrosis, normal renal parenchymal structure is lost<sup>(7)</sup>.

Development of hydronephrosis is frequently seen in cases with pelvic kidneys secondary to dysfunctional ureteropelvic junction. This condition can be frequently confused with other abnormalities leading to the formation of adnexal cysts. In a case reported by Ko et al. adnexal cyst was diagnosed in a 20-year old female patient, but a pelvic hydronephrotic kidney was detected intraoperatively<sup>(8)</sup>. Differential diagnosis between pelvic masses should be done especially in whom hydronephrosis developed. For this reason the most frequently used diagnostic method is more easily applied ultrasonographic examination with relatively higher sensitivity, and specificity when compared with other diagnostic methods. Alcazar et al. indicated specificity and sensitivity of ultrasonographic examination as a diagnostic tool in patients with a previous diagnosis of simple cyst as 94.6, and 82.7%, respectively<sup>(9)</sup>. Results of large-scale studies reported specificity, and sensitivity of CT, and MRI in the differential diagnosis of adnexal masses as 75 vs. 87%

and 90 vs. 91%, respectively<sup>(10)</sup>. Computerized tomography (CT), and magnetic resonance imaging (MRI) are used to diagnose adnexal masses which could not be identified by ultrasonographic methods. In the identification of adnexal pathologies superiority of MRI over CT is already acknowledged<sup>(11)</sup>. In another study investigating all of three methods in the differentiation between benign and malign characteristics of adnexal masses, indicated superiority of MRI to ultrasonographic imaging methods thanks to lower false positive results obtained by MRI<sup>(12)</sup>.

Selection between laparotomic and laparoscopic approaches to be performed in patients with a diagnosis of adnexal mass should be made after evaluation of clinical findings, and available data. Laparoscopic approach should be priorly preferred for the management of adnexal masses. Laparoscopic approach is defined as a gold standard in fertile patients<sup>(13)</sup>. Also in this case, laparoscopic approach could be evaluated as a priorly preferred therapeutic method.

Pelvic ectopic kidney can be confused with various clinical conditions apart from adnexal cystic formations. Bader et al. reported about pelvic masses evaluated preoperatively as lymph node conglomerates in two patients with a diagnosis of endometrial carcinoma. On the contrary, these masses were identified as pelvic ectopic kidney tissue during intraoperative evaluation<sup>(5)</sup>.

Nephrolithiasis and ureteropelvic junction stenosis are more frequently seen in patients with a diagnosis of pelvic kidney when compared to cases with kidneys in their normal anatomic locations. Increased incidence of renal cell tumors in pelvic kidneys should be taken into consideration<sup>(14)</sup>. For that reason nephrectomy has been recommended for pelvic and nonfunctional kidneys<sup>(15)</sup>.

In conclusion, pelvic ectopic kidney is a developmental anomaly confounding intraoperative diagnostic process together with other pelvic pathologies including predominantly adnexal masses. Therefore preoperative diagnosis carries a crucial importance in these patients. Especially in patients with a history of urinary system abnormality, and adnexal mass, the presence of an ectopic and hydronephrotic kidney should not be forgotten. In patients requiring a surgical intervention, appropriate surgical approach should be selected after preoperative structural examination of the mass. Though nephrectomy is recommended for adnexal masses diagnosed as pelvic ectopic kidney, preference for laparoscopic or laparotomic approaches should be discussed.

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