

## CASE REPORT

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## Pyelolithotomy In Pelvic Ectopic Kidney: Case Report

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### ABSTRACT

**Introduction:** Urinary system stone diseases are among the most common diseases in urology practice. Treatment methods are decided according to the size, location and number of the stone, but in rare diseases such as ectopic pelvic kidney, the decision must be made according to the kidney structure, vessels and stone. In this case report, the pyelolithotomy performed on the 29 mm stone of the patient with pelvic ectopic kidney was tried to be explained in the light of the literature.

**Case:** A thirty-two-year-old male patient was diagnosed with a 29 mm stone in the right pelvic kidney and renal pelvis as a result of the examinations performed at the hospital where he complained of abdominal pain. With the subsequent examinations and preparations, the patient underwent a pyelolithotomy operation modified with appropriate steps for the pelvic kidney.

**Discussion and Conclusion:** ESWL, PNL, RIRS, laparoscopic surgery techniques can be applied in pelvic ectopic kidney. Studies have reported the success of ESWL as 54-81%, the success of PNL as 80%, and the success of laparoscopic and robotic surgeries as 80-100%. Although the success of minimally invasive methods is high, the stone burden is below two centimeters in most of these studies. Although open surgery seems to be the last choice, in this anomaly where the surgical technique is not fully determined and the approach is case-specific, open surgery should be considered and the technical approach and dissection steps should be determined.

**Keywords:** Pelvic Kidney, Ectopic Kidney, Pyelolithotomy, Kidney Stone.

### INTRODUCTION

Urinary system stone diseases are common in our country and around the world (1). Its incidence in our country is around 15% (2). Medical expulsion therapies (MET), extracorporeal shock wave therapy (ESWL), ureterorenoscopy (URS), percutaneous nephrolithotomy (PNL), Retrograde intrarenal surgery (RIRS), open and laparoscopic surgeries are stone treatment methods used in daily practice (3).

Renal anomalies can be seen as agenesis, dysgenesis, ectopy and calyceal disorders (4). Renal ectopia is one of the relatively common anomalies. It is seen approximately once in three thousand births (5). It is more common on the right side, in the pelvic region, and in male patients (5). In asymptomatic cases, renal ectopia is not intervened, but stones in this kidney, ureteropelvic junction stenosis and vesiculoureteral reflux are more common (6). The treatment approach for pelvic ectopic kidney is decided according to the kidney position, the condition of the artery and vein and aberrant artery-vein structures, and the proximity of the intra-abdominal organs.

Our aim in this case report is to present the pyelolithotomy technique in the rare pelvic ectopic kidney in the light of the literature.

### CASE

A thirty-two-year-old male patient applied to an external center with a complaint of abdominal pain. In the ultrasonography and tomography examinations, it was determined that the right kidney was not in the lumbar region, but was in the pelvic region, and that there was a 29 mm stone filling the renal pelvis of the right kidney. (Picture 1.)

Subsequently, the patient underwent contrast-enhanced tomography and it was determined that the pelvic ectopic kidney received branches from the right iliac artery and vein. It was observed that these branches crossed the surface of the kidney and entered the renal pelvis, and also the ureteropelvic junction had a high entrance. (Picture 2.)

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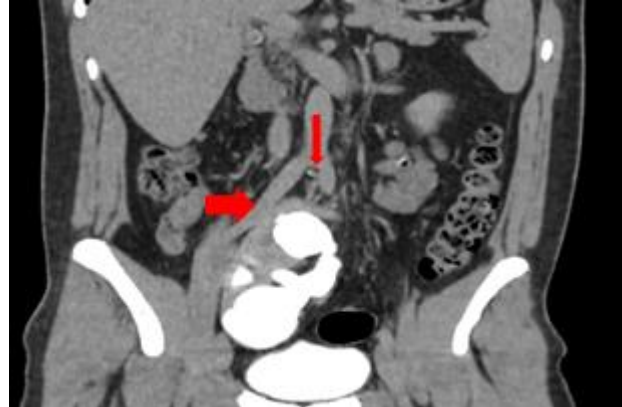
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**Picture 1.** View of the Right Pelvic Ectopic Kidney and Stone



**Picture 2.** Right Pelvic Ectopic Kidney And İliac Artery-Vein Neighborhood

After the necessary preparations were made, an incision of approximately 10 cm was made 1 cm below the umbilicus, with the patient in the supine position, and the skin and its layers were passed and the abdomen was descended. Due to hydronephrosis, the kidney was manually palpated in the abdomen and the posterior leaf of the peritoneum was dissected over the kidney and dropped into the retroperitoneal space. The renal hilus was palpated, and then the renal pelvis was visualized by fine dissection. Then, a 2 cm incision was made on the renal pelvis and the stone was extracted. Afterwards, the renal pelvis was sutured with 4/0 Vicryl. After bleeding control, a drain was placed and the procedure was terminated. During surgery, the position of the kidney, its vein-artery formation, its proximity to the anterior abdominal wall limits the surgery, and the pelvic kidney pushes the intestines and is far from the Tellt line; It was experienced that this situation facilitated dissection. The patient was discharged stone-free by removing a soft drain on the second postoperative day. (Picture 3.)



**Picture 3.** Stone-free Urinary System Radiograph on the 2nd Postoperative Day

## DISCUSSION

Pelvic ectopic kidney is more common among anomalies. ESWL, RIRS, PNL, laparoscopic and open surgeries can be performed in this anomaly, which is usually unilateral. Studies have reported the success rate of ESWL in pelvic ectopic kidney as 54-81%. Stones broken with this technique are stones 1.4 cm and below (7).

With the widespread use of flexible URS, it has become easier to perform surgical procedures in different anatomical structures. In their series of 17 cases, Binbay et al. reported the success rate of RIRS as 70.8% (8). In another study conducted in our country, the success rate of RIRS was reported as 84%. The inability to reach the stone and the inability to pass fragmented stones due to their high UP placement stand out as the limiting factors of this series (9).

PNL can be difficult in a pelvic-located kidney due to the position of the intestine and main arteries and kidney rotation, but there are series performed with ultrasound and laparoscopy guidance. In a study of

16 patients conducted by Desai et al., it was reported that ileus, hematoma and intestinal injuries were common (10).

Laparoscopic pyelolithotomy or robot-assisted pyelolithotomy are also among the widely used methods recently. Stone-free rates in these methods are reported to be between 80-100% (11).

Ectopic kidneys are cases with malrotation, short ureters, and their vascularity and proximity to surrounding tissues need to be examined. Although endoscopic and laparoscopic procedures provide advantages in terms of comfort in this type of surgery, the surgeon should keep in mind that any complications during the bleeding control and dissection stages cannot be handled as comfortably as the ease of access in open surgery.

## CONCLUSION

In pelvic ectopic kidneys, for stones less than two cm in size, the approach is ESWL and RIRS, while for stones larger than two cm, laparoscopy and PNL are preferred. Although open surgery seems to be the last choice, in this anomaly where the surgical technique is not fully determined and the approach is case-specific, open surgery should be considered and the technical approach and dissection steps should be determined.

## DESCRIPTIONS

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