

## Managing an Ectopic Kidney Stone in a Young Girl with Vague Abdominal Symptoms: A Case Report

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### Abstract

Ectopic kidney is a rare congenital malformation. Its most common location is in the pelvis. Most of the time, ectopic kidney is diagnosed as an incidental finding during radiological imaging. Owing to creation of pelvic mass, it might be misdiagnosed as colonic tumors or ureteric masses. An unmarried female patient aged 18 year old presented to us with recurrent history of lower abdominal pain and burning micturition. Furthermore, she had bouts of pain in suprapubic region on and off. She had been treated for urinary tract infections (cystitis). On physical examination, there was mild tenderness in suprapubic region. On microscopic examination of urine, red blood cells were seen abundantly and the leukocyte count was 3/hpf. Nitrite and leucocyte esterase were positive. Then urine culture was also performed that was positive for *E. coli*. Ultrasound Kidney ureter and bladder (KUB) and computed tomography (CT scan) were performed and an ultimate diagnosis of an ectopic pelvic kidney was made.

**Keywords:** Ectopic Kidney Stone; Vague Abdominal Symptoms

### Introduction

Renal ectopia with calculus is a rarer finding with no specific documented incidence rate. Its incidence at autopsy has been found to reach approximately 1:900 live births, mainly in female. They tend to occur more on the left side. Their location can vary from pelvic location, iliac (lumbar), lower abdominal, and in thoracic. Sometimes they may present as crossed/crossed fused. In our case a lady had presented with lower abdominal pain and episodes of lower urinary tract symptoms. We managed this case of right ectopic renal calculi primarily by open pyelolithotomy by using abdominal incision extending mainly infra umbilical with minimal amount of trauma and bleeding with DJ stent placement [1,2].

### Case Report

A 19 year old unmarried girl having weight of 54 kilogram with normal vitals chart observations, came to our clinic with complain of vague pain in suprapubic region and right sided lower abdomen. There was no alleviating or aggravating factor for this pain. It was associated with fever seldom. There was no episode of vomiting but at times she complained of nausea and too the symptoms to be caused by some bowel discomfort. Furthermore, she had symptoms of lower urinary tract such as burning micturition, frequency and urgency at times. She was prescribed antibiotics on and off by a general physician to treat symptoms of so called urinary tract infection symptoms. Examination didn't show any abdominal distention or tenderness in abdomen. Abdomen was soft and bowel sounds were normal. There

was no abdominal mass that could be palpated. Rest of the systemic history was not significant. She had no comorbid and had never been operated for any abdominal surgery. Then we did Ultrasound Kidney ureter and bladder showing hyper echoic lesion of calcific attenuation of size 2.3 cm in lower abdomen in an ectopic kidney (Figure 1a). Computed tomography of abdomen pelvis without contrast was done to see further details of the stone location on the ectopic kidney (Figure 1b). We counselled patient about the treatment and surgical removal was planned. After incision in lower abdomen and traversing the layers of we reached the palpable stone in the renal pelvis. It was incised in U-shape and stone was brought out with sponge holding forceps. Then DJ (double J) stent of 6 Fr was inserted in ante grade fashion. Renal pelvis incision was repaired in a pyeloplasty fashion with vicryl 4-0 suture. Post-operative recovery of patient was normal and she was discharged on second postoperative day. On clinic follow up we did X- ray KUB that showed DJ stent in place and it was removed after 6 weeks of the surgery. She was advised to drink plenty of water (2 - 3 liters daily) and dietary plan was also given to her to decrease chances of recurrence of renal stone. Here lower abdominal vague pain and lower urinary tract symptoms were relieved after the surgery.



Figure 1a



Figure 1b: Computed tomography showing stone in ectopic pelvic kidney.

## Discussion

Ectopic kidney is one of a rare congenital anomaly encountered in urology clinic [1,2]. When the mature kidney fails to attain its normal location during fetal life (in the renal fossa) the condition is called as renal ectopia. The kidneys below the aortic bifurcation and opposite the sacrum (pelvic kidney) are common locations of renal ectopia [1,3]. Renal ectopia being a rare finding is easily missed in differential diagnosis by general physicians as in this case. In addition to this, renal ectopia having a renal stone is even rarer leading to further confusion and difficulty in diagnosing it at general physician level in remote areas [1]. It's vital to note that in patients with ectopic kidneys, the incidence of stone formation and ureteropelvic junction obstruction are higher as compared to the general population [1,3,4]. This is might be due to the abnormal rotation, aberrant vasculature and anatomy of these kidneys.

As mentioned earlier, ectopic kidney with different presentation such as duplication, horseshoe shaped, rotational anomalies, abnormal insertion of ureter and different localization of kidney might make the stone management in ectopic kidney more difficult and challenging [6,7]. It might require different surgical approaches but luckily in this case the renal pelvis was anterior without having an anterior aberrant vessel, so it was easy to access the renal stone without much bleeding. Furthermore, handling of renal pelvis (palpable stone) and incision over renal pelvis was easily done. Double J stent was removed after 6 weeks. She was given advice to drink plenty of water (2 - 3 liters daily) and dietary plan was also given to her to decrease chances of stone recurrence. Here lower abdominal vague pain and lower urinary tract symptoms were relieved after the surgery.

Options such as percutaneous nephrolithotomy (PNL), Extracorporeal shock wave lithotripsy (SWL), laparoscopy, ureterorenoscopy (URS), and open procedure are the accepted modalities for treatment of renal calculi in ectopic kidney [2,7,8]. The choice depends upon the renal location, any intervening bowel between kidney and the skin, rotation of kidney, abnormal ureteral insertion, and above all the surgeon's choice depending upon the comfort level for a specific case of renal stone in an ectopic kidney. Apart from this, the diagnosis of ectopic renal stones in lower abdominal vague symptoms is of vital importance at general physician level. So, this helps in timely diagnosis and management of the stone to avoid losing kidney secondary to renal stones that is common in poor countries.

## Conclusion

Diagnosis of ectopic renal stone is challenging at general physician level and they should keep low threshold for ectopic renal stone in stone belt areas. Early diagnosis and management is vital in avoiding long-term complications of renal stones.

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