

Case report

Renal cell carcinoma in ectopic pelvic kidney

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Abstract:

The incidence of renal cell carcinoma (RCC) in ectopic pelvic kidney is extremely rare. The relationship between RCC and ectopic kidneys is uncertain. A 52-years- old female presented with painless total haematuria and examination showed pallor and suprapubic fullness. Complete haemogram showed low hemoglobin(7g/dl), and urine analysis uncountable cells/HPF . CT urography showed heterogeneous enhancing mass in ectopic pelvic kidney. Through midline incision, abdomen was approached. Intraoperative findings was a mobile right renal pelvic tumour. Radical nephrectomy was carried out. Pathology report revealed renal cell carcinoma. Haematuria disappeared postoperatively. Follow -up showed no recurrence or metastasis during the first year. This case reported a successful surgical management of an ectopic pelvic kidney with renal cell carcinoma.

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Introduction:

Ectopic kidney is a rare condition due to failure of a well-developed kidney to reach its normal position within the renal fossa. There are many types of ectopic kidneys existing depending on its position: pelvic, abdominal, thoracic, iliac, contralateral or even crossed ⁽¹⁾. The incidence of ectopic pelvic kidney is about one in 2100-300 autopsies ⁽²⁾. The incidence of renal cell carcinoma (RCC) in ectopic pelvic kidney is very rare, only eight cases were reported ⁽³⁾.

Case report:

A fifty - two - year - old - woman presented to the causality with painless total haematuria. There was no history of similar attacks; no history of schistosomiasis; or stone disease. Examination revealed she was pale, pulse rate 110/min, respiratory rate 20/min and temperature 37.1 C. There was supra pubic fullness.

Three ways Foley's catheter was inserted and

irrigation with normal saline started. Complete haemogram showed low hemoglobin (7g/dl); therefore, she received two units of packed RBCs. Urine analysis showed pus cells 2-4cell/HPF and uncountable RBCs /HPF. Renal functions tests and coagulation profile were normal. Ultrasound abdomen revealed normally positioned left kidney, absent right kidney in addition to the presence of a pelvic mass. CT urography showed normal left kidney as shown in figure 1. There was hypo-dense presacral lesion about 12 x 7 cm representing tumor of ectopic right pelvic kidney. No liver or lymph nodes metastasis (T2 No M0), as shown in figure 2. The patient was planned for, and prepared for, radical nephrectomy via trans- peritoneal abdominal approach

Through midline incision radical nephrectomy was done. Intraoperative findings revealed: mobile mass in right pelvic kidney and the liver, lymph nodes and peritoneum were free. Operation time was

about one hour and estimated blood loss was 500 cc at the time of surgery. A non-suction drain and a Foley catheter were inserted. Post-operative course was uneventful. She was discharged on the fifth day.

Histopathology report showed renal cell carcinoma(RCC), clear cell type (T2 NX MX); completely resected tumor with free ureteric margin. Post-operative follow-up(clinical examination plus abdominal US & CT pelvis and abdomen) showed no recurrence or metastasis during the first year.

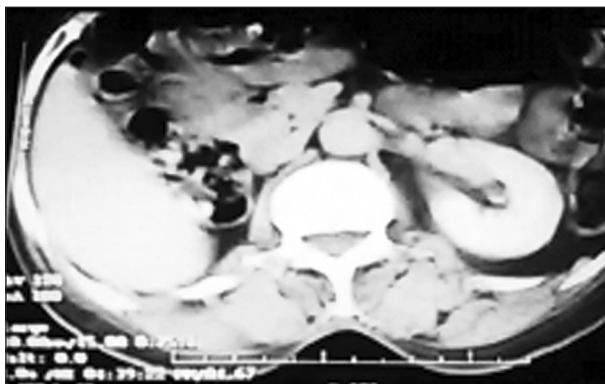


Figure 1: Absent right kidney and normally-positioned left kidney



Figure 2: Hypo-dense pelvic lesion with enhancement, representing right pelvic kidney.

Discussion:

The relationship between RCC and ectopic kidneys is uncertain. The presence of the kidney in the pelvis does not appear to increase the risk of malignancy⁽⁴⁾. Ectopic kidney is more prone to development of hydronephrosis and stone disease. It is not more susceptible to disease than the normally located kidney⁽⁵⁾.

Renal cell carcinoma (RCC) represents 80% of all renal malignancies. In 2007, over 51,000 new diagnoses were reported in the United States. The WHO (2004) Histological Classification of RCC revealed that: clear cell type is the commonest type, representing 75% of all RCC's; followed by papillary (10%); chromophobe (5%); hereditary cancer syndromes (5%); and unclassified lesions (4%)⁽⁶⁾.

Most ectopic pelvic kidneys are asymptomatic. Most cases documented presented with chronic abdominal pain with the pelvic kidney found on ultrasound scan and one case presented with painless haematuria⁽⁷⁾. Joseph Philipraj and his colleague⁽⁸⁾ reported a renal tumor in ectopic pelvic kidney presenting with suprapubic discomfort and difficulty of voiding. It was detected on CT scan and initial diagnosis of RCC was made. The rarity of such cases in daily practice made it a challenge for the urologists. Most cases of ectopic kidneys present with atypical presentation. However, the existence and availability of modern radiological imaging techniques increased the detection of such anomaly over the years. In the current, case the presenting symptom was painless total haematuria at the age of 52 years which led us to think of malignancy and accordingly further diagnostic tools were requested.

The ectopic pelvic kidneys do always maintain their blood supply from the iliac vessels or the distal aorta. Pelvic kidneys have an anomalous vascular supply and collecting systems. There may be a single or multiple renal arteries. Anomalous renal arteries may arise from the distal aorta; common iliac; internal iliac; or external iliac arteries. The surgical approach to ectopic kidneys merits caution because of the uncertain vascular anatomy. Vascular studies may be indicated to assist preoperative planning. Identification of the renal arteries and veins near the mass is necessary to avoid intraoperative complications. In some studies, MRA was suggested to be a substitute for angiography in detecting the renal vessels before nephrectomy⁽⁹⁾. If performing MRA or angiography is not feasible, especially in our setting, you can depend on the CT with intravenous contrast for identification

of vascular anomalies preoperatively or careful surgical dissection intraoperatively.

The treatment of choice for RCC in an ectopic pelvic kidney depends on site; clinical stage of malignancy; co-morbid conditions; and the surgeon's experience. In our case trans-peritoneal midline incision was done for two reasons: the blood supply of the ectopic kidney came from the mid-line whatever its origin (aorta-iliac vessels) and there was no perioperative image identification of vascular anomalies. Moreover, mid-line approach is good for exploration of vascular anomalies.

In conclusion: renal cell carcinoma(RCC) in an ectopic pelvic kidney is extremely rare with few reported cases. The expensive diagnostic tools like MRA and angiography may not be available in most of the times. Accordingly, midline trans-peritoneal approach is advisable. This case reported a successful surgical management of a pelvic kidney with RCC.

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