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Book Review

Renal cell carcinoma in an ectopic pelvic kidney: About a case report

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Introduction

Renal cell carcinoma is the most common solid tumor occurring within the kidney representing 5% of cancers diagnosed. However the incidence of renal cancer in a pelvic kidney is rare, and has only been described in a very small number of cases.[1]

Case presentation

A 53-year-old female, previously well, non-smoker, presented to our clinic complaining of left flank pain for few weeks duration. There were no aggravating or alleviating factors, and no dysuria, frequency, urgency, nocturia, incontinence or hematuria. She was haemodynamically stable. Physical examination was unremarkable and no abdominal masses were palpable. Laboratory evaluation consisted of urine analysis, complete blood count, renal function tests and serum electrolytes, all of which were normal, except for microhaematuria. A computed tomography (CT) scan revealed an ectopic pelvic left kidney with a 4 cm enhancing mass located in the anterior portion of the mid to lower pole (Fig. 1). No metastatic sites were found. The patient underwent an open transperitoneal radical left pelvic nephrectomy The pelvic lefft kidney was easily identified under the peritoneal reflection just anterior to the sacral promontory. The left external iliac artery was identified, and the parietal peritoneum incised along the root of the small bowel mesentery. Dissection was continued over the kidney until the anteriorly located renal pelvis and ureter were identified. Utilizing sharp and blunt dissection, the kidney was mobilized circumferentially. Anomalous vessels were isolated and divided between surgical clips. A renal artery was draped over the anterior portion of the kidney, originating from the Aortic bifurcation (Fig. 2). Two renal veins took a course to reach the left common iliac vein (Fig. 2). Total operative time was 120 minutes, with an estimated blood loss of 150 mL. The final histological examination concluded to chromophobe renal cell carcinoma Führman grade 2 (Fig. 3). After 12 months of clinical and radiological check-up, there was no functional complaint or any sign of reccurrence.

Discussion

Renal ectopia is a rare condition involving a failure of the mature kidney to reach its normal location within the renal fossa. This congenital anomaly is found in 1 of 2100–3000 autopsies.[1] Most pelvic kidneys are asymptomatic, and there is not thought to be an increased susceptibility to disease.[2] There is a dearth in the literature discussing renal malignancy in the ectopic pelvic kidney.[3] The advent of improved imaging studies has allowed for a higher incidence in the identification of ectopic kidneys, including those with malignancy. Despite this fact, these patients can still be misdiagnosed, particularly with atypical presentations. The pattern of the renal vascular network is dependent on the position of the ectopic kidney and is completely anomalous.[3] More inferiorly situated ectopic kidneys may be supplied by one or two main renal arteries arising from the distal aorta, aortic bifurcation, and the common or external iliac arteries.[3] The inferior mesenteric arteries can also provide blood supply to these kidneys.[3] The surgical approach to ectopic kidneys merits caution because of the uncertain vascular anatomy and it is mandatory to have a detailed preoperative vascular evaluation. In some studies MRA has suggested to be a substitute for angiography in depicting the renal vessels before nephrectomy.

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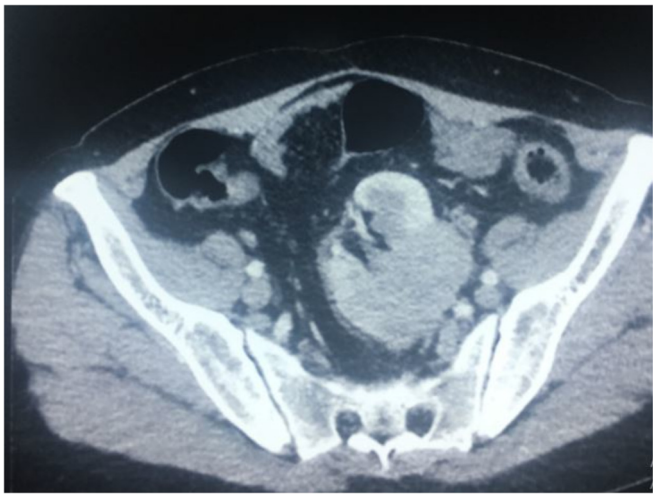

Fig. 1. A computed tomography (CT) scan revealed an ectopic pelvic left kidney with a 4 cm enhancing mass located in the anterior portion of the mid to lower pole.

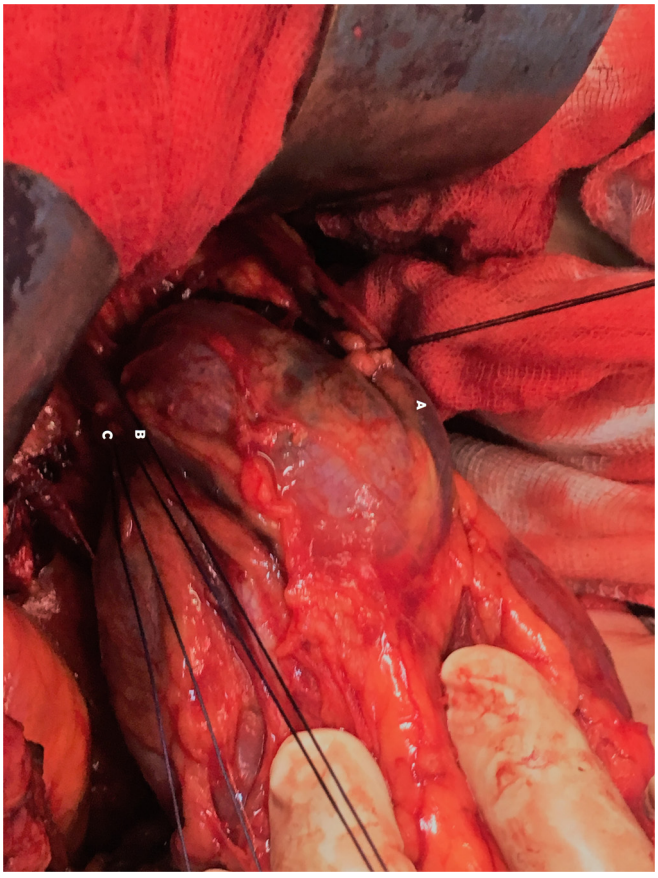

Fig. 2. A and **B**: Two renal veins took a course to reach the left common iliac vein. **C**: A renal artery was draped over the anterior portion of the kidney, originating from the Aortic bifurcation.

Conclusion

This report describes a case of successful surgical management of a pelvic kidney with cancer. Imaging was carefully analyzed to determine the orientation of the tumor, kidney, renal vessels, and collecting system, and their association with the underlying major vascular structures enabling the surgeons to avoid significant blood loss during dissection of the effected tissue.

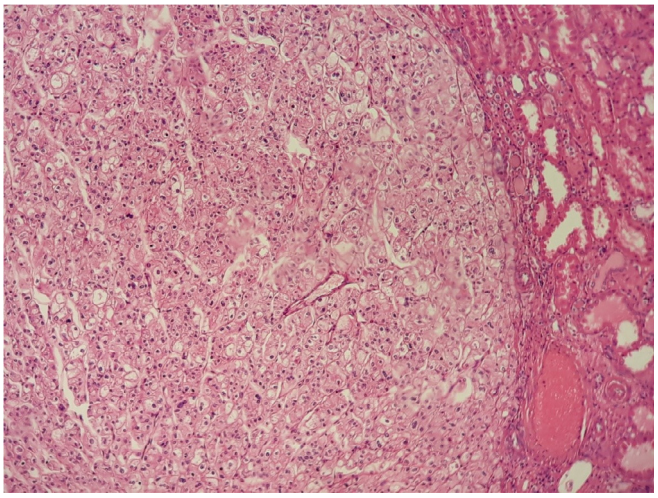

Fig. 3. Renal tumor composed of granular eosinophilic cells with proeminent cell borders (Hematoxylin Eosin x 200). The histological examination concluded to chromophobe renal cell carcinoma Führman grade 2.

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

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