

# A Rare Case of Renal Cell Carcinoma in Left Renal Ectopia with Cervical Spine Metastasis Presented as Quadriparesis

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## Abstract

We present a rare case of renal cell carcinoma in left renal ectopia presented with bilateral upper limb weakness due to cervical metastasis. The incidence of renal cell carcinoma with renal ectopia has been described in very few cases.

**Keywords:** Renal cell carcinoma; Cervical metastasis; Renal ectopia; Imaging

## Introduction

Renal Cell Carcinoma (RCC) is the most common solid tumor affecting adults, accounting 2% of the cancers worldwide [1,2]. The incidence of renal cell carcinoma in a pelvic kidney which represents the most common form of ectopic kidney is extremely rare. We describe a case where an incidental pelvic kidney with a large sized renal cell carcinoma was diagnosed when a patient presented with cervical spondylitis myelopathy due to cervical metastasis.

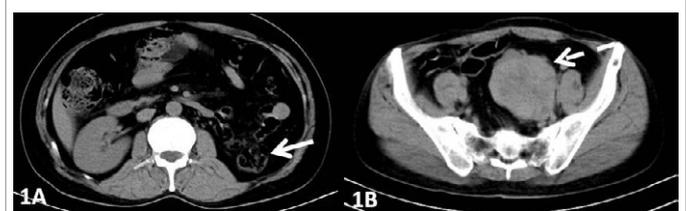
## Case Report

A 45-year old male presented with paraesthesia, weakness in bilateral upper extremity and vertigo. He gave a history of recent loss of appetite and weight loss with off and on history of burning micturition. He has a 5-pack year history of smoking. The patient looked pale on general examination. His physical examination was done which revealed hypoesthesia and weakness in his bilateral C<sub>4</sub>, C<sub>5</sub>, C<sub>6</sub> spinal nerve distribution. Magnetic resonance imaging of cervical spine was done which showed pathological compression fracture collapse of C<sub>5</sub> vertebral body with spinal canal compromise. Associated Pre and Para vertebral soft tissue component was also noted. These features were in favor of vertebral metastasis (Figure 4). Then the patient was further worked up with more detailed history, laboratory examination, sonography, contrast enhanced computed tomography and magnetic resonance imaging of whole abdomen. Laboratory examination showed microcytic hypochromic anemia. Ultrasonography of abdomen revealed cholelithiasis with absent left kidney in left renal fossa and on further examining the patient, we found left kidney in left pelvic region lying adjacent to left lateral wall of urinary bladder with a large heterogeneous mixed echogenicity mass measuring approximately 58.0×45.0 mm. The abnormal increase in vascularity within the mass was also noted. The mass was involving upper and middle pole of left kidney. Right kidney was absolutely normal in size, shape and echotexture. NCCT and Contrast enhanced computed axial tomography of abdomen was done with CT urography, which revealed a large, heterogeneous, lobulated and homogeneously enhancing exophytic mass with area of necrosis within it, arising in left supra and paravesical region, abutting the left lateral wall of urinary bladder, however, the interface was maintained (Figures 1-3). The arterial supply was from the left common iliac artery. Magnetic resonance imaging also revealed the solid mass with central area of necrosis in left pelvic kidney, hence confirming the diagnosis (Figure 4).

## Discussion

Renal ectopia results from failure of caudal-to-cranial ascent of kidney to reach its normal position in renal fossa during its embryologic development. The kidney may be found in pelvic region,

iliac region, abdomen, thoracic region or contralateral location [3]. The incidence of pelvic kidney is more common than the other ectopic sites and on the basis of autopsy series pelvic kidney is believed to range from 1:900 to 1:1200 without any sex predilection [3]. Usually patients with renal ectopia suffer from recurrent urinary tract infections, stones and hydronephrosis. It can be associated with anomalies involving genitourinary, musculoskeletal and cardiovascular systems [4]. The association of renal ectopia with renal cell carcinoma is extremely rare and astonishing, because ectopic kidney is a relatively common anomaly and renal cell carcinoma is the most common malignant solid tumor in



**Figure 1A and B:** NCCT scan of abdomen shows empty left renal fossa occupied by descending colon (white arrow). Figure 1B shows a large, heterogeneous, lobulated exophytic mass with area of necrosis in left ectopic kidney.



**Figure 2:** CECT scan of abdomen through lumbar region shows empty left renal fossa occupied by descending colon (white arrow). Figure 2B shows a large, heterogeneous, lobulated and homogeneously enhancing exophytic mass in left ectopic kidney with area of necrosis, arising in left supra and paravesical region, abutting the left lateral wall of urinary bladder (dotted arrow). Figure 2C shows normal enhancing renal parenchyma (black arrow with white outline).

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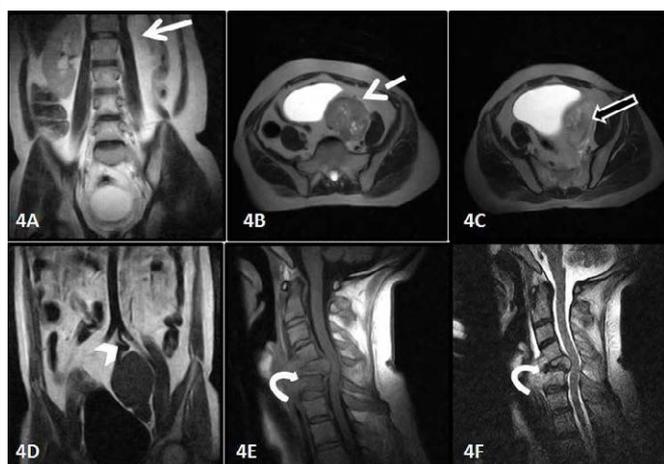
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**Figure 3:** CT urography image confirming the findings of axial images and shows empty left renal fossa with ectopic left kidney showing a large, heterogeneous, lobulated and heterogeneously enhancing exophytic mass with area of necrosis, arising in left supra and paravesical region, abutting the left lateral wall of urinary bladder.



**Figure 4:** Magnetic resonance imaging confirming the findings with empty left renal fossa (white arrow), mass in ectopic left kidney (dotted arrow), normally visualized parenchyma of left kidney (black arrow with white outline), ectopic kidney supplied by left common iliac artery and vertebral metastasis in C5 vertebral body with cord compression.

adults. According to Heidelberg Classification [5] histologic subtypes of renal cell carcinoma include clear cell (conventional), adenocarcinoma (80%), papillary (15%), chromophobe (5%), collecting duct (1%) and unclassified (4%) [6,7]. The cytogenesis, immunohistology and prognostic criteria of each subtypes is different. Hematogenous spread is more common than the lymphatic spread metastasis in decreasing order of frequency is lung (most common), bone, liver, lymph nodes, adrenal, brain, thyroid, skin and bladder [8]. Most cases documented earlier presented with painless hematuria, chronic abdominal pain and a palpable lump. Our case is the only case documented with the patient giving long history of smoking presented with upper limb weakness which was found having cervical metastasis on MRI and when further assessed on the basis of ultrasonography, CECT AND MRI of abdomen was diagnosed renal cell carcinoma in left ectopic kidney.

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