

Bilateral Synchronous adrenals and Soft palate metastases of Renal cell carcinoma: A rare case report and review of the literature

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Abstract:-

Renal cell carcinomas (RCCs) metastasize to the adrenal glands via various mechanisms, including lymphatic vessel, arterial embolism and retrograde venous embolism. The rate of ipsilateral metastasis is 3-5% and the rate of contralateral metastasis is ~0.7%, however, synchronous bilateral adrenal metastases are extremely rare. Therefore, the optimal diagnosis and treatment strategy for this condition is yet to be thoroughly defined. Renal cell carcinoma (RCC) is a common malignancy with high metastatic potential, primarily due to its extensive vascularity. Common sites of metastasis include lungs, bone, lymph nodes, liver and brain. However, rare cases of metastasis to other sites including inguinal lymph nodes, peritoneum/mesentery and orbit have been published in the literature. Here in is a rare case involving metastasis of RCC to the soft palate is presented. In the present study, a 39-year-old male patient presented with left flank pain and hematuria. Ultrasonography (USG) revealed a left renal mass and bilateral adrenal masses and a computerized tomography (CT) scan determined the size of the lesions: A 124x85x80mm mass in the lower pole of the left kidney, a 80x84x73mm mass in the right adrenal gland and 20x11x13mm mass in the left adrenal gland with central necrosis and peripheral contrast uptake. It also shows pleural based mass measuring 6x7x5mm. Multiple Retroperitoneal masses noted largest measuring 40 x 38 x 29mm inferior to the distal body and tail of pancreas. He had symptoms of foreign body sensation at the back of his throat and oropharyngeal examination revealed soft palate erythematous mass. Soft palate biopsy and complete excision were performed, which revealed metastatic RCC. Uvula biopsy was negative and revealed only squamous mucosa with mild chronic inflammation. Immunohistochemical examination of the biopsy revealed clear cell carcinoma.

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I. Introduction

Renal cell carcinomas (RCCs) account for 2-3% of all types of cancer worldwide and the highest incidence rate is observed in developed countries. The disease is more common in males, with a male to female ratio of 1.5:1, and the highest incidence is observed between the ages of 60 and 70 years (1). RCCs can metastasize to almost every organ, including the lungs (50-60%), liver (30-40%), bones (30-40%) and brain (5%), and ~25% of RCC patients will already have multiple distant metastases at the time of presentation, such as lung, lymph node, liver or bone metastases (2). The rate of ipsilateral adrenal metastasis from RCC ranges from 1.1 to 10% in RCC patients and increases to 6-29% in autopsy series (3,4). By contrast, contralateral adrenal metastases rarely occur (metastasis rate, ~0.7%) and bilateral adrenal metastases are limited to ~20 cases reported in the literature (3). Bilateral adrenal metastases may occur as synchronous or metachronous lesions. Synchronous bilateral involvement was found to be present at about one fifth of all adrenal metastases [5,6].

II. Case Presentation

Clinical and radiological features: In January 2020, a 39-year-old male patient was admitted to Dr.B.R.Ambedkar medical college, Bengaluru presented with left flank pain and hematuria. He had symptoms of foreign body sensation at the back of his throat, and oropharyngeal examination revealed soft palate erythematous mass (Fig.1). Ultrasonography (USG) revealed a 124x85x80mm mass (Figs. 2 and 3) located in the lower pole of the left kidney with solid-cystic components and heterogeneous echogenicity. Urinary bladder showed a large mobile heterogeneous lesion measuring 45 x55x37mm with no internal vascularity (suggestive of blood clot)(Fig 4). Computerized tomography (CT) scans identified a primary mass in the lower pole of the left kidney measuring 130x83x86 mm and the bilateral adrenal masses (Fig. 5 and 6), which extended to the renal pelvis and hilum. Furthermore, the left renal mass demonstrated marked central contrast uptake in the arterial

phase. Additionally, two masses, measuring 80x84x73 mm and 40x38x29 mm, were detected in the right and left adrenal gland respectively, with central necrosis and peripheral contrast uptake. It also shows pleural based mass measuring 6x7x5mm(Fig.7).Multiple Retroperitoneal masses noted largest measuring 40 x 38 x 29mm inferior to the distal body and tail of pancreas(Fig 8). Biochemical tests were conducted and the results were as follows: Glucose-90 mg/dl; creatinine-1.0 mg/dl; urea-41 mg/dl; white blood cells- 832×10^2 / μ l; hemoglobin-11.9 g/dl; and platelet count-175,000. The patient subsequently underwent ultrasound guided biopsy of the renal mass.**Immunohistopathological findings:** The specimens obtained from the left kidney using the ultrasound guided biopsy technique demonstrated characteristics typical of clear cell Carcinoma. Furthermore, Immunohistochemical examination revealed positive staining for RCC (Figs.9 and 10). Thus, a diagnosis of bilateral adrenal metastasis and soft palate metastasis from clear cell RCC was established.



Fig.1 Soft palate erythematous lesion on oral examination.

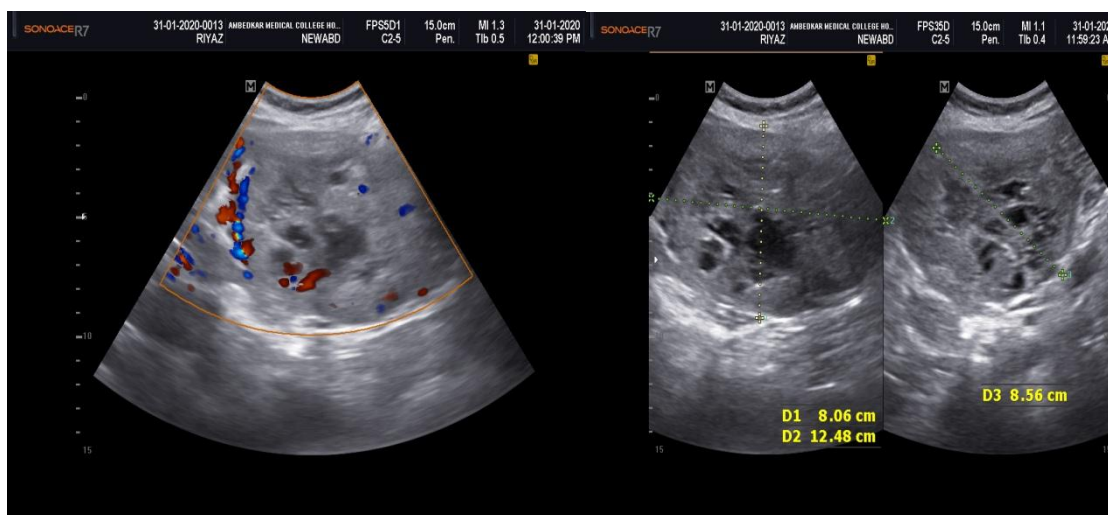


Fig.2 and 3.USG shows heterogenous left renal mass in the lower pole with colour uptake.

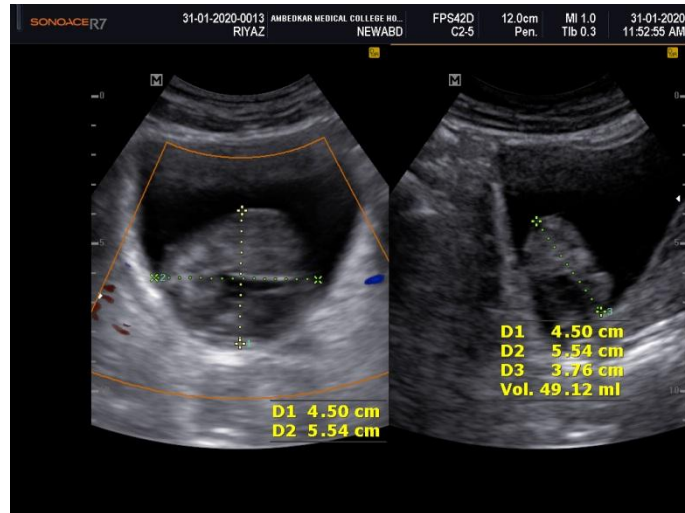


Fig.4 USG showing large bladder clot.

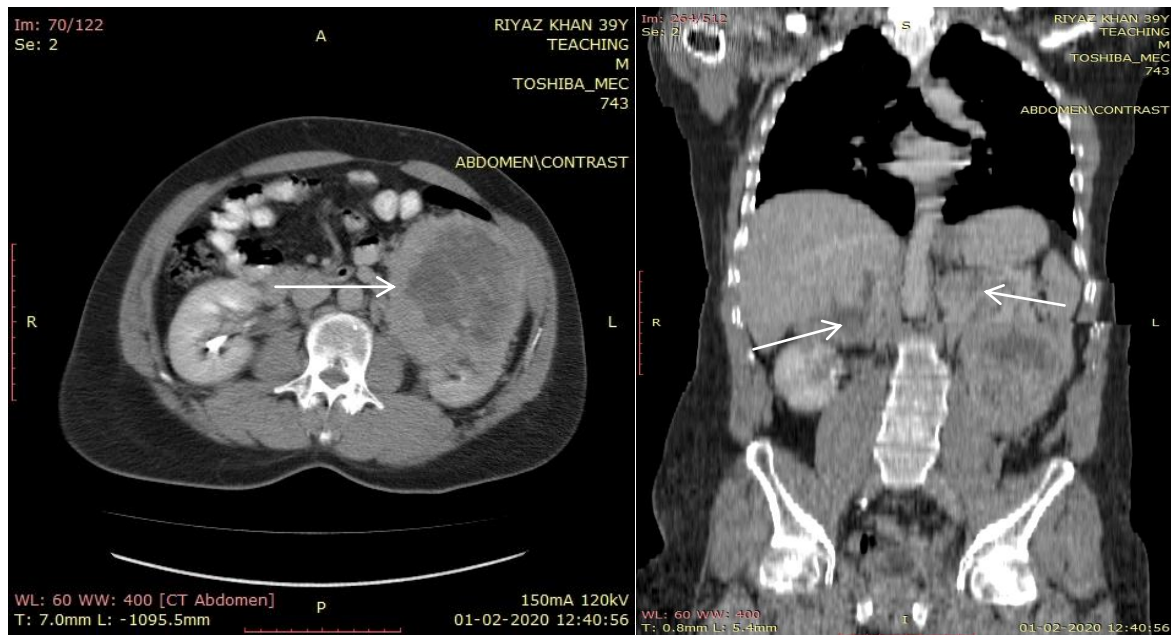


Fig 5 and 6. Contrast CT showing the large left renal mass and bilateral adrenal masses.

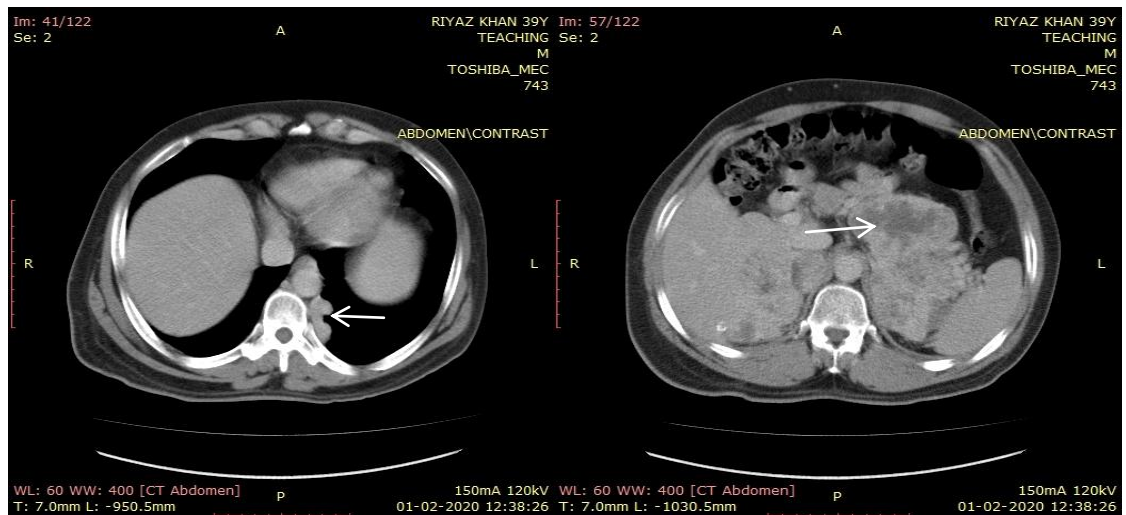


Fig.7 and 8 CECT showing left pleural based mass and retroperitoneal mass

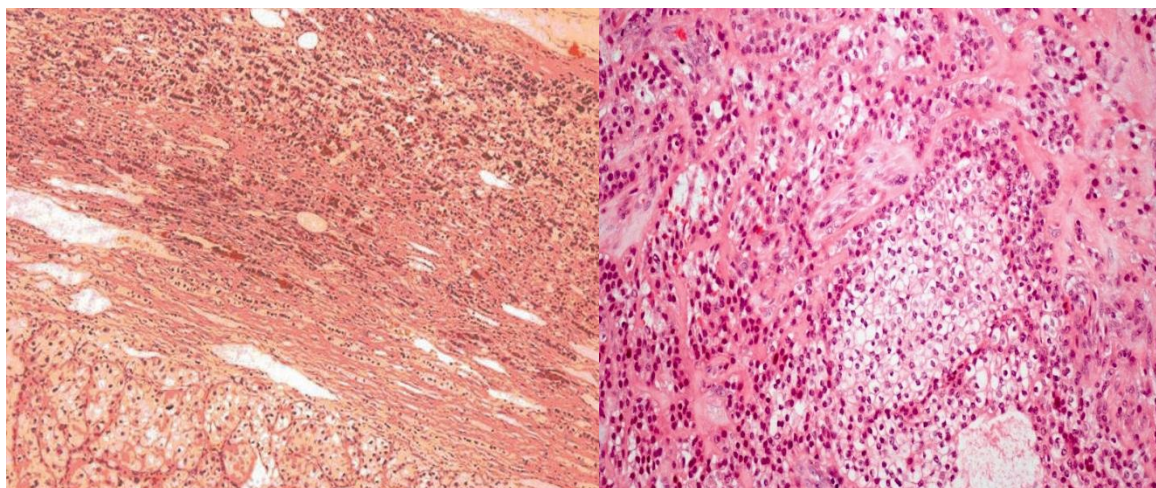


Fig.9 and 10 Histology section of Clear cell RCC
Metastasis to the adrenal gland and soft palate (H & E stain, 200x)

III. Discussion

Metastatic tumors in the oral cavity are rare. Most of them occur in the mandibular bone and thus, the metastasis of the tumor to the oral mucosa is very rare. Here is a case of metastatic renal cell carcinoma to bilateral adrenals and soft palate, which is extremely rare. There have also been multiple documented cases and literature reviews of RCC metastasis to the tongue (7). Metastasis of RCC to the head and neck region is rare (8,9). Sinonasal malignancies are typically primary neoplasms, with metastatic tumors being rare; however, RCC is the most common malignancy to metastasize to this region. An analysis of 412 metastatic lesions to the oral soft tissues showed that RCC mainly metastasized to the tongue compared to the other oral soft tissues, with a total of 19 cases (10). Thus, in cases in which an oral ulcerating lesion is seen, it is always important to make histopathological diagnosis instead of clinical diagnosis based on appearance, as the prognosis and treatment will vary significantly based on the type of malignancy.

IV. Conclusion

The rate of ipsilateral Renal cell carcinomas (RCCs) metastasis is 3-5% and the rate of contralateral metastasis is ~0.7%, however, synchronous bilateral adrenal metastases are extremely rare. Metastatic tumors in the oral cavity are rare. Most of them occur in the mandibular bone, and thus, the metastasis of the tumor to the oral mucosa is very rare. Here is a case of metastatic renal cell carcinoma to bilateral adrenals and soft palate, which is extremely rare.

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