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An unusual presentation of renal cell carcinoma metastasising to seven sites: A case report

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ABSTRACT

Renal cell carcinoma (RCC) account for 3% all of solid organ tumours and commonly occurs in men in the age range of 60 to 70 years. The rare metastatic site are head and neck (15%), orbit, parotid glands, nasal cavity and paranasal sinuses, thyroid gland, skin (3%), heart (10%), muscle & joints and adrenal glands. Very few cases of RCC are reported in literature presented with up to 4 metastatic sites in a Pt.; here we are reporting a case report of seven metastatic sites in a patient. A 52-year-old male presented with distant metastasis to bone, lung, lymph nodes (common sites) and to scalp, heart, adrenal gland and muscle (relatively rare metastatic sites) making a total of seven metastases,2-year after post-radical treatment with initial staging pT2bNxM0

INTRODUCTION

Renal cell carcinoma (RCC) is third most common neoplasia of the genitourinary tract and accounts for approximately 3% of all adult malignancies with approximately 13,000 deaths annually [1].RCC represents 60% of cases with the highest incidence occurring in individuals between 50 to 70 years of age, along with the highest mortality rate. Among the variants of RCC, chromophobe cell carcinoma accounts for only 3-5% and carries a better prognosis than clear cell RCC with a five-year survival rate between 92-94% [2]Despite of developments in the treatment of metastatic RCC with immunotherapy (interferon) and vascular endothelial growth factor (VEGF) targeting agents (e.g., sunitinib), the prognosis remains poor with 20% to 50% of pts with localized disease relapsing post-nephrectomy. [3]

Due to a strong tendency to metastasize(30% of cases are metastatic at time of diagnosis or during follow-up) it is associated with 14,000 estimated deaths in 2015 in the USA [4]. The major sites of metastasis are lung (75%), bone (20%), lymph nodes (11%), liver(18%), and brain (8%).[5] The rare metastatic site are head and neck (15%), orbit, parotid glands, nasal cavity and paranasal sinuses, thyroid gland, skin (3%), heart (10%), muscle and joints and adrenal glands (2-10%) [6]

CASE REPORT

A 52 yr. old man diagnosed as a case of right (rt.) sided RCC with hypertrophic cardiomyopathy in December 2012, underwent partial nephrectomy outside. Postoperative (post-op) histopathology (HPE) showed clear cell RCC, Fuhrman grade II, confined to renal capsule with pathological staging pT2bNxM0. He remain asymptomatic till March 2014 and then he gradually developed bilateral lower limb edema for which he has taken only symptomatic treatment till July 2014 but didn't get relieved. Then he consulted to the department of Radiotherapy in King George Medical University, Lucknow. There he was again evaluated with contrast enhanced computerised tomography (CECT) chest & abdomen, chest X-ray and diagnosed as recurrent case of post-nephrectomy RCC with mediastinal lymphadenopathy. He received radiotherapy 50 Gy in 25 fractions at the rate of 2 Gy per fraction to post-op tumor bed with one anterior and 2 lateral oblique field by cobalt-60 (Theratron 780 E) from 8th July to 12th August 2014. In February 2015, he again developed cough with expectoration, non-radiating severe pain in rt. thigh, multiple swellings over scalp (Fig.1) and swelling over rt. Foot (Fig.2) and referred to Medical Oncology department of our institute. On performing metastatic work-up, CECT abdomen and thorax (25/02/15) was s/o pulmonary metastasis with significant enlarged mediastinal lymphadenopathy with bilateral adrenal metastasis. Bone scan (28/02/15) was s/o tracer uptake in mid-shaft of rt. femur and 2D-Echo showed dilated left (lt.) atrium

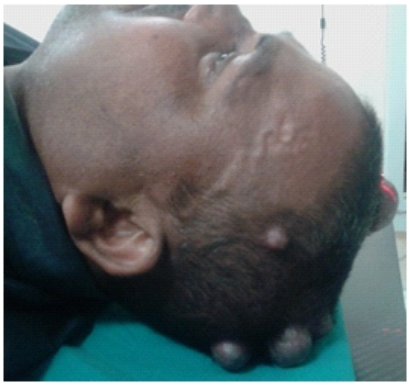

Figure 1: Multiple circumscribed scalp swellings.

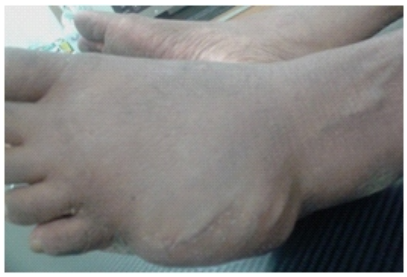

Figure 2: Rt. foot swelling.

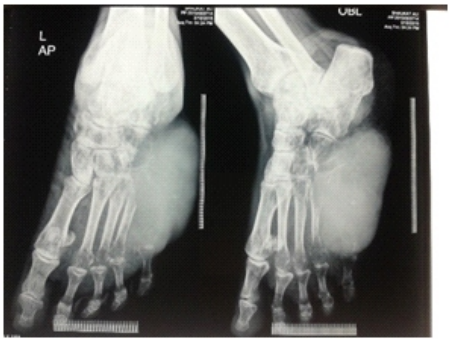

Figure 3: AP and Oblique view X-ray rt. foot showing well-circumscribed swelling involving the muscle and underlying bone.

asymmetric septal hypertrophy, lt. ventricle hypertrophy with ejection fraction (EF) 60%. Finally he was referred to our department for palliative radiotherapy to rt. femur. We further evaluated the pt. with X-ray rt. foot along with fine needle aspiration cytology (FNAC) from scalp swelling.X-ray rt. foot with antero-posterior (AP) and oblique view (Fig. 3) showed swelling with lytic destruction of tarsal and meta-tarsal bones. FNAC was performed from both scalp and rt. foot swelling which showed positivity for adenocarcinoma. He was planned for palliative radiotherapy to painful site (rt.femur) with dose 2000 cGy in 5 fractions @ 200 cGy per fraction with AP and postero-anterior (PA) fields with 10 MV photons but he received only 4 fractions from 23/03/15 to 26/03/15. At present the patient. is on treatment with tab. Sorafinib 200 mg twice a day i.e. 400 mg per day.

DISCUSSION

The clinical classical triad of RCC comprise haematuria (60%), lumbar pain (40%), and palpable flank mass (30-40%) present in only 10% of the cases, and usually in more advanced stages with poor prognosis. Additional, features may be found like fever, weight loss, anaemia, varicocele, and paraneoplastic syndromes (5%) characterized by erythrocytosis, hypercalcemia, liver dysfunction, and amyloidosis. [7, 8]

The typical work-up generally begins with either abdominal CT or ultrasonography. The CT appearance varies according to the cell type of the tumor. RCC is usually seen as a hypervascular, exophytic, intra-renal mass and usually heterogeneous in clear cell tumors, homogenous in chromophobe tumors, and hypovascular in papillary tumors. [9] So far, the role of FDG-PET in the diagnosis of primary and metastatic RCC has not been clearly defined. Larger studies and meta-analyses may be necessary to conclude whether PET has a prognostic value. [10]

In RCC most of the recurrences occur in the first 3 years and the frequent sites include lung, local lymph nodes, bone, liver, brain and contra-lateral kidney. [8].

Our review of the literature was unable to find any cases with more than four metastatic sites simultaneously in a pt. Hence we are reporting a case that developed distant metastasis to seven sites including bones, lung, & mediastinal lymph nodes and multiple rare metastatic sites heart, bilateral adrenal, scalp and muscle.

Regarding the cutaneous metastasis in RCC, most common site is scalp and the pt. presented to us with multiple scalp swelling. Histologically, they may have a similar appearance to the primary lesion; however, they are frequently poorly differentiated. FNAC from scalp swelling was positive for adenocarcinoma in this pt.

The pt. also presented to us with rt. foot swelling since 20 days, on examination it appears to be originate from muscle. X-ray rt. foot with AP and oblique view (Fig. 3) showed swelling with lytic destruction of tarsal and meta-tarsal bones. FNAC was performed from this swelling and also showed positivity for adenocarcinoma indicating muscle and joint metastasis which is again a rare site for RCC.

Concluding that our pt. developed recurrence within 2-yr of diagnosis & distant metastasis in common sites and rare metastatic sites within 3-yr of diagnosis. Prognosis of the pt. is very poor when he develops distant metastasis still our pt. is surviving.

CONCLUSION

RCC represents with aggressive behaviour and has a propensity for metastatic spread. The accurate patterns of metastases from RCCs are not yet defined. As a result, RCC has been associated with rare metastatic sites and occasionally a typical presenting symptoms from disseminated disease as well as distant metastatic sites.

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