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METASTATIC RENAL CELL CARCINOMA MASQUERADING AS A BREAST LUMP- A CLINICAL INSIGHT INTO A SYNCHRONOUS CASE OF OLIGOMETASTATIC RENAL CELL CARCINOMA

Urology

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ABSTRACT

Introduction: Renal Cell Carcinoma (RCC), a highly vascular tumor may present with rare metastasis at initial presentation. Synchronous breast metastasis from clear cell renal cell carcinoma is very rare and correlates with poor prognosis. In absence of any renal complaints, a breast lump can mimic a primary breast carcinoma or benign breast disease. **Case History:** A 55-year-old female, presented with a swelling in the right breast. Physical examination was suggestive of a benign swelling in view of well-defined margins, no lymphadenopathy, no skin changes. Fine needle aspiration cytology was done twice and was inconclusive. Tru-Cut biopsy revealed metastatic RCC. Mammography showed BIRADS-IV lesion and PET-CT revealed oligometastatic disease with breast and a small solitary lung metastasis. The patient underwent simultaneous right cytoreductive nephrectomy and lumpectomy. **Conclusion:** Early detection and surgical resection of limited metastatic disease is important, as the treatment instituted at an earlier stage when it is amenable to surgical resection improves the survival considerably.

KEYWORDS

Breast, Metastasis, Renal cell Carcinoma, Mammography

INTRODUCTION

Renal cell carcinoma (RCC) comprises about 90% of all malignant renal tumors, characterized by potential metastatic extension to lymph nodes, lungs, liver, opposite kidney, adrenal glands, brain, and bone [1]. Renal cancers have a strong tendency to metastasize even after total surgical resection and sometimes show unpredictable patterns of spread manifested as metastasis at unusual sites. RCC with metastasis to the breast is very rare [2]. Breast metastases from RCC can be synchronous or metachronous, with the most common presentation being a breast lump detected incidentally on physical examinations without any other apparent symptoms. A high index of suspicion to establish the diagnosis in a patient with prior history of RCC is very important as metastasis to the breast is very rare.

Case Presentation:

A 55-year-old elderly female presented with a right breast lump for two years. On examination 3 x 3 cm lump was palpable in the right lower quadrant of the breast, with well-defined margins, normal overlying skin, and no axillary lymphadenopathy. Fine needle aspiration cytology (FNAC) was inconclusive. Mammography was suggestive of British Imaging-Reporting and Data System IV (BIRAD-IV) lesion in the right lower quadrant of the breast **(Figure 1 a, b)**. Contrast-enhanced computed tomography (CECT) abdomen, pelvis and chest revealed an 11.5 x 12 x 16 cm lobulated, heterogeneously enhancing exophytic mass lesion with central necrosis in the central and lower pole of the right kidney. Tru-cut biopsy of the breast lesion showed revealed clear cell carcinoma- Metastatic RCC. On Positron emission tomography (PET-CT), Fluorodeoxyglucose (FDG) avid enhancing lesions were noted in the right kidney with a standard uptake value (SUV) max of 5.5, right breast with SUV max of 3.8 and right lung with SUV max of 10.2, respectively **(Figure 1 c, d)**.

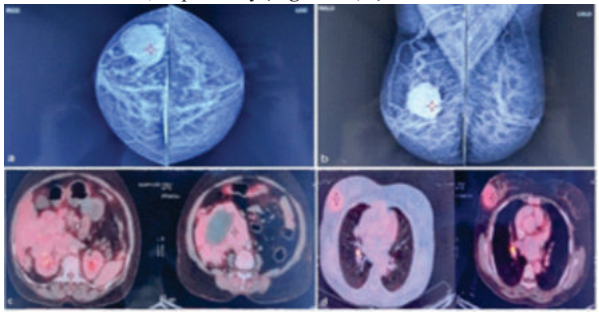

Figure 1 a, b Mammography Showing A Lesion In The Outer Lower Quadrant Right Breast

Figure 1 c, d PET-CT showing FDG avid enhancing lesions in the right kidney, right breast and right lung

Right cytoreductive nephrectomy with right breast lumpectomy was done, and HPE revealed clear cell carcinoma, Fuhrman's grade II, stage pT3apNxpMx. Histopathology of the Right breast lump specimen revealed metastatic clear cell carcinoma **(Figure 2 a, b)**. After surgery patient received sunitinib 50mg (2+1). The latest follow-up PET Scan revealed an FDG avid nodule in the right lung with an SUV max of 10.2 with no other abnormal hypermetabolic focus in the rest of the body **(Figure 2 c, d)**.

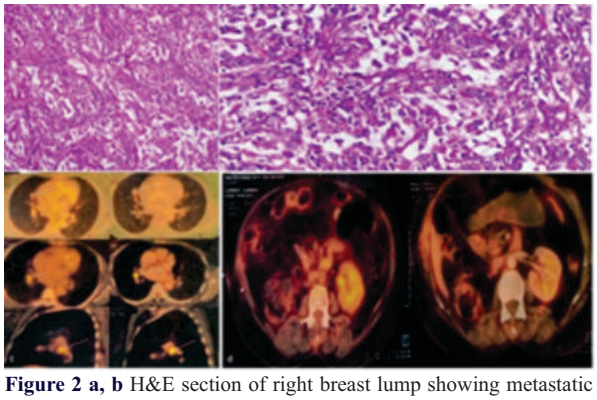

Figure 2 a, b H&E section of right breast lump showing metastatic RCC

Figure 2 c, d Follow-up PET-CT showing an FDG avid nodule in right lung and no abnormal hypermetabolic focus elsewhere

DISCUSSION:

Renal cell carcinoma with metastasis to the breast is a rare entity. It presents as a breast lump which can be synchronous or metachronous, with the latter being the most common presentation and associated with a better prognosis [3]. Synchronous lesions suggest a more aggressive nature of the underlying RCC. Our case presented as a breast lump and, on evaluation, revealed underlying RCC confirming the synchronous disease. Usually, the lump is painless, mobile, and well-defined without skin changes and non-involvement of lymph nodes. Our case, too, presented as a painless mobile discrete lump in the right breast with no skin or axillary lymph node involvement. Absence of desmoplastic reaction, non-involvement of skin and axillary nodes, which is very common in primary breast carcinoma but

not in a metastatic case, may masquerade the metastatic lesion as a benign lump [4]. Mammography does not show speculation or microcalcification (10% only) and hence can be mistaken as benign [4]. Doppler ultrasound shows increased peripheral vascularity. Confirmation by Tru-Cut biopsy is crucial as FNAC may be inconclusive, as in our case. The treatment of limited metastasis is surgical resection. Sentinel lymph node biopsy and axillary lymph node dissection are not required in this setting as the disease is already metastatic. Also, the staging role of SLNB only applies to primary tumors and not in a metastatic setting. A complete response to non-surgical treatment modalities is found in only 15% of cases, whereas surgical resection of the tumor is associated with better survival and outcomes. Thus, aggressive surgical resection of both primary and metastatic lesions is justified [5]. In our case, the Right Radical nephrectomy with right breast lumpectomy and no axillary lymph node dissection was done. After surgery patient was put on sunitinib and is doing well.

CONCLUSION:

Breast metastases from renal cell carcinoma are very rare. The metastases are solitary in most cases and amenable to resection when diagnosed earlier. A Tru-Cut biopsy is essential as FNAC can be inconclusive. Complete surgical resection of metastasis is the best available treatment option, given the resistance to chemotherapy and lack of efficacy of the other available therapies in a metastatic setting.

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