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Case Report

Metastatic Renal Cell Carcinoma Presenting as Breast Lump; Easy to Diagnose, Challenging to Treat

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Abstract

Background: Metastasis to the breast in females from renal cell carcinoma is a very uncommon occurrence. The management of primary breast cancer is entirely different from a metastatic lesion in the Breast. The prognosis of this patient having breast metastasis is poor.

Case Summary: We report a 40-year-old female patient presenting with a breast lump. On subsequent workup, the lump was found to be metastasis. Detailed immunohistochemistry study was suggestive of metastatic renal cell carcinoma. The patient was found to have disseminated metastases; patient was started on tyrosine kinase inhibitors Pazopanib.

Conclusion: This case report confirms that metastases should always be kept in mind while evaluating a breast lump.

Keywords: *Breast Lump; Renal Cell Carcinoma; Metastasis*

Introduction

Breast lump secondary to metastases (0.5 - 2%) is rare as compared to primary breast carcinoma. The metastases to the breast are primarily from melanoma, lymphoma, and leukemia, whereas metastasis from renal cell carcinoma is rare (to breast 1 - 3%). Few cases presenting as breast lump are reported in the literature. We present a case report of metastatic renal cell carcinoma presenting as a breast lump [1,2].

Case Summary

A 40 years female presented with a painless lump 3 x 3 cm in the left breast. Mammography of breast suggests left BI-RADS 4A tumor in the left breast. The patient underwent trucut biopsy of left breast lump. The histopathology suggests invasive tumor cells arranged in nests, tubules, and papillae. The tumor shows mild nuclear pleomorphism, columnar and cuboidal cells, central round hyperchromatic nuclei, abundant clear cytoplasm, and well-defined cell borders. Tumor cells are positive for panCK, vimentin, and patchy positivity for CD 10 and negative for GATA 3, ER, PR, and PAX 8. All features suggestive of metastatic clear cell carcinoma. Biopsy from axillary lymph node also suggests metastatic clear cell carcinoma.

The patient was evaluated for localizing primary. CECT Abdomen suggestive of 17 x 10 x 16 cm present with baseline HU 23-43, arterial phase 43-103 HU, venous 22-76 HU, mass appears to the abutting pancreas, spleen, displacing aorta, diaphragm. In view of metastases, FDG PET scan was done which suggests of Large 15 x 10 x 17 cm in left kidney with few lung nodules largest measuring 2.1 x 2 cm SUV max 4.4, multiple bone metastasis, FDG avid 3.6 SUV max in left outer breast measuring 2.3 x 1.9 cm SUV max 4.4. The patient was started on pazopanib 800 mg and kept on follow up. Patient had response to treatment (pazopanib) by decrease in size of mass at 3 months.

Discussion

Renal cell carcinoma accounts for 2 - 3% of all malignancies, with 40 to 50% cases developing distant metastasis. It is the 7th most common malignancy in men. Male: female ratio ranges from 1.5:1 to 2.5:1 worldwide. The classical triad of Renal cell carcinoma is hematuria, flank pain and a palpable abdominal mass, which are detected in only 10% of Renal cell carcinoma cases. Although RCC can metastasize to unusual sites, the commonly favored include the lung, bone, liver, abdomen, and retroperitoneum in decreasing order of frequency [3].

Systemic metastases also portend a particularly poor prognosis for RCC, traditionally although these numbers have been improved with targeted therapy. Patients presenting with synchronous metastases fare worse, with many patients dying of disease progression within 1 to 2 years [4].

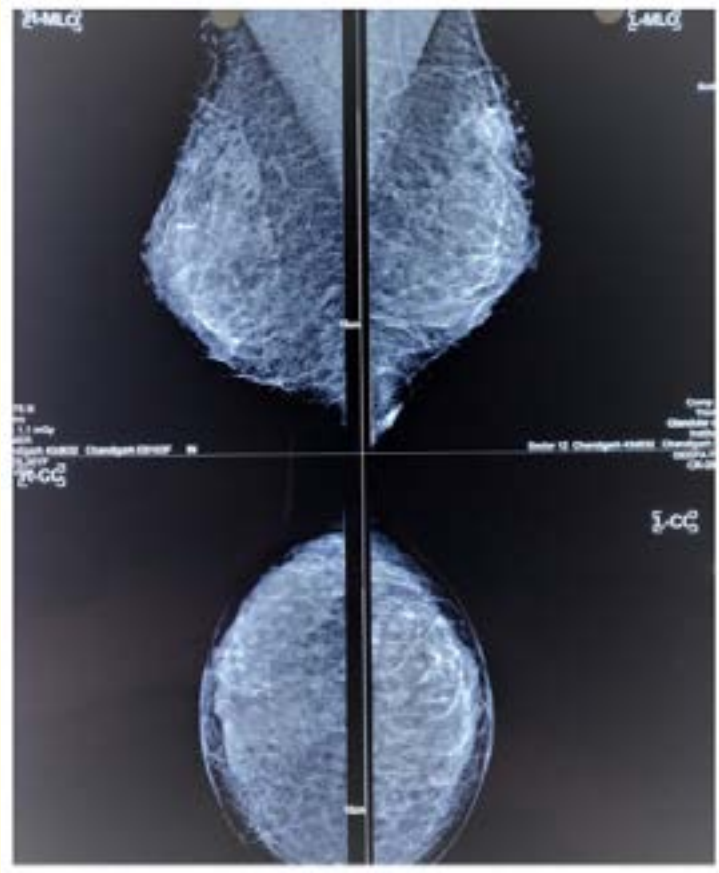

Figure 1: *Mammography showing left breast mass BIRADS IV-A.*

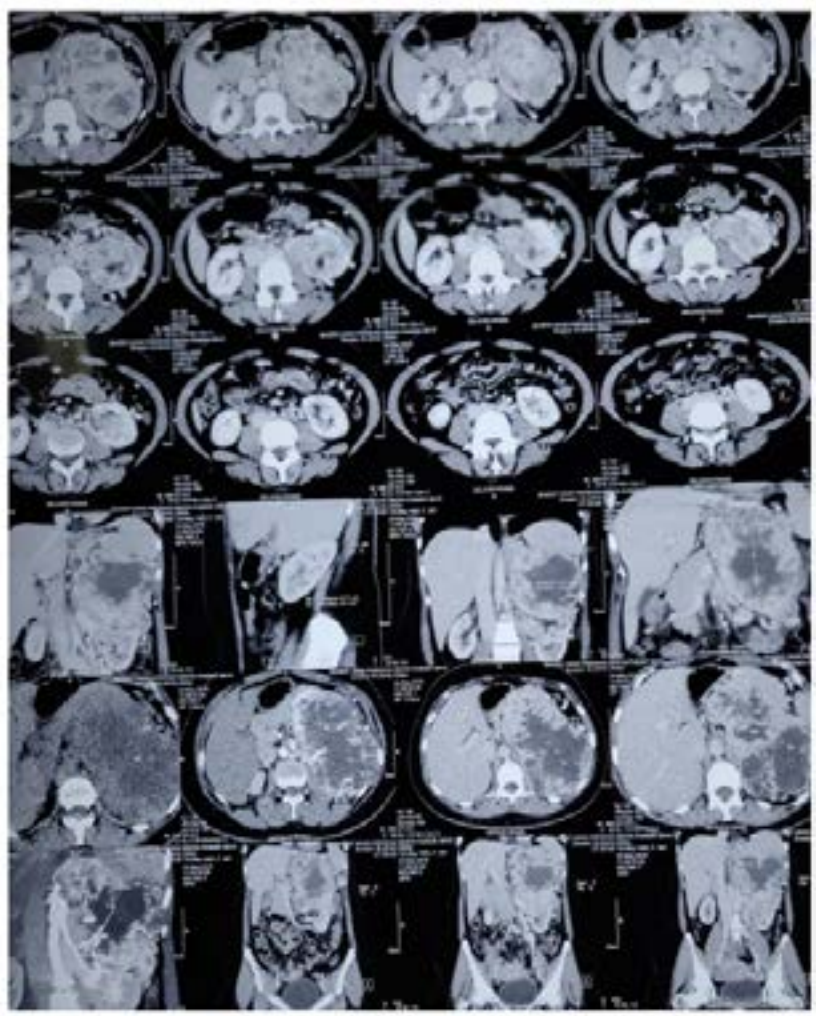

Figure 2: *Showing Left Renal mass showing left heterogeneous renal mass 14 x 10 x 8 cm.*

Patients presenting with renal cell carcinoma have metastases in one third of cases. Another one third will develop metastases on follow up [5].

Breast metastasis from renal cell carcinoma is a rare, as it emerges from the small number of cases reported in the literature. Patients can develop metastases either in synchronous or metachronous fashion from renal cell carcinoma. According to a study of 25 cases of breast metastasis reported in the literature, 14 occurred after nephrectomy for RCC. So, history of primary including renal cell carcinoma should be sought in patients of breast lump.

Metastasis to the breast present commonly as painless and mobile discrete masses with rapid growth. Skin and axillary lymph node involvement is rare in patients of breast metastases [6].

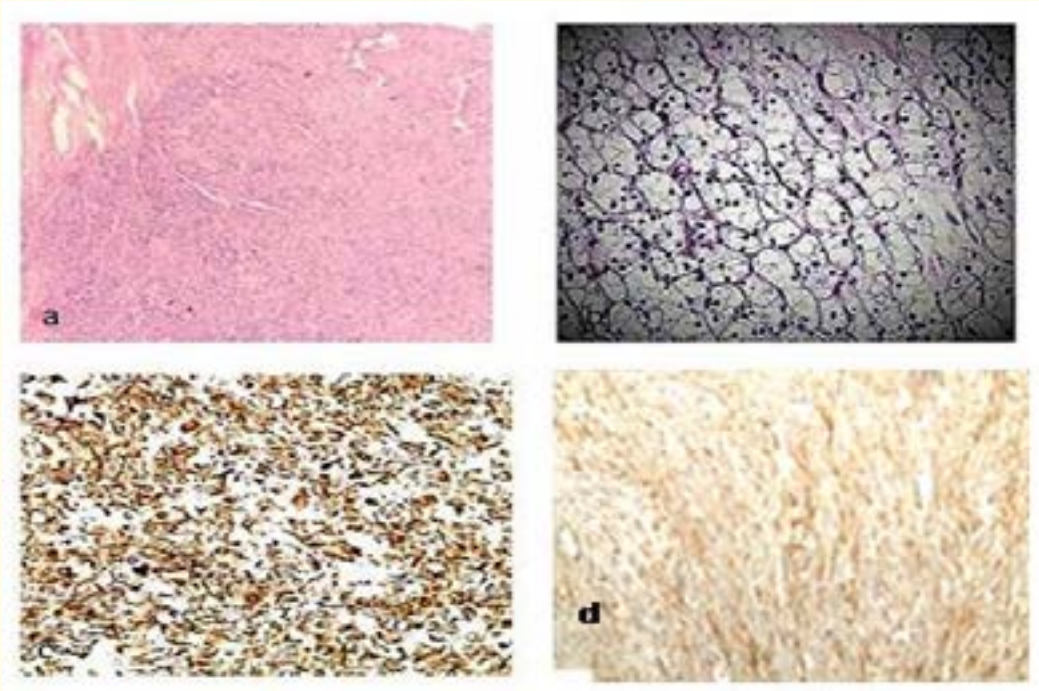

Figure 3: *Histopathology slides a. metastatic clear cell carcinoma b. clear cells with mild nuclear pleomorphism, abundant clear cytoplasm c. Vimentin immunostain performed shows diffuse strong cytoplasmic positivity in tumour cells d.CD 10 positivity in metastatic tumor cells.*

The only finding that can be suggestive of malignancy is the prominent peripheral and penetrating the vascular network, well evident to color and power Doppler, which is common to all cases reported in the literature [7].

The rich vascular network of renal cell carcinoma facilitates haematogenous extension and the development of distant metastases. Neoplastic cells from renal cell carcinoma travels through renal vein into the inferior vena cava and then through the pulmonary circulation, eventually reaching the arterial circulation, spreading throughout the whole body and thereby reaching the breast: therefore, multiple lesions in body. Lungs act as filters that prevent the systemic spread of tumor cells; however shunts, especially arterio-venous; facilitate the tumor's path to the head and neck region. Tumor-related growth factors, such as parathyroid-related protein and truncated fibronectin growth-promoting substance, may also play an essential role in the localization of cutaneous metastasis in this region [8].

Cutaneous metastasis develops in 5–10% of high-stage cancer patients, most frequently in association with breast, lung, colon, ovarian, and metastatic malignant melanomas. Although cutaneous metastases rarely develop in cancers of the urogenital system, they can occur in renal cell carcinomas (RCCs) [9].

Our case presented with a breast lump, further diagnosed by histopathology and immunohistochemistry after core needle biopsy. The patients having widespread metastasis disease should be started with tyrosine kinase inhibitors. Despite treatment, these patients have a poor prognosis. Our case illustrates that metastasis should always be kept as a differential diagnosis while evaluating a local tumor.

Conclusion

Metastatic renal cell carcinoma presenting as breast lump is rarely encountered. Histopathological examination along with systemic examination and examination is key to reach at diagnosis.

Bibliography

1. R Siegel., *et al*. "Cancer statistics, 2013". *CA: A Cancer Journal for Clinicians* 63.1 (2013): 11-30.
2. Mahrous M., *et al*. "Breast metastases from renal cell carcinoma: rare initial presentation of disease recurrence after 5 years". *Journal of Breast Cancer* 15.2 (2012): 244-247.
3. International Agency for Research on Cancer. The GLOBOCAN project: cancer incidence and mortality worldwide in 2008 (2011).
4. Heng DY., *et al*. "External validation and comparison with other models of the International Metastatic Renal-Cell Carcinoma Database Consortium prognostic model: a population-based study". *Lancet Oncology* 14.2 (2013): 141-148.
5. DG Skinner., *et al*. "Diagnosis and management of renal cell carcinoma: a clinical and pathologic study of 309 cases". *Cancer* 28.5 (1971): 1165-1177.
6. Alzaraa A., *et al*. "Breast metastasis from renal cell cancer". *World Journal of Surgical Oncology* 5 (2007): 25.
7. Saenz de Santamaria Morales FJ., *et al*. "Carcinoma renal metastasico en mama.Presentation de dos casos diagnosticados por citologia mediante puncion aspira-cion con aguja fina (PAAF)". *Archivos Españoles de Urología* 43 (1990): 75-77.
8. S Koga., *et al*. "Renal cell carcinoma metastatic to the skin". *Anticancer Research* 20.3 (2000): 1939-1940.
9. Kumar M., *et al*. "Extremely Rare Divergent Differentiation in Sarcomatoid Variant of Renal Cell Carcinoma Developing Lip Metastasis after Radical Nephrectomy". *Global Urology and Nephrology* 2.1 (2019): 2-4.

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