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Synchronus Carcinoma Breast and Renal Cell Carcinoma: A Case Report

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Abstract: Primary malignancies of different organs can occur in the same patient. If two or more primary malignancies are detected in the same patient at the same time, or within interval of two months, they are known as synchronous malignancies. Metachronous malignancies arise anew in some different organ and detected later. Synchronous breast and renal cell carcinoma (RCC) can occur rarely. We present a case of patient of breast cancer with synchronous primary malignancy of kidney. A 55 year old female patient presented with one month history of painless left breast lump. On CT scan, there was an incidental finding of right renal mass. On histopathological examination, the mastectomy specimen was reported as Infiltrating ductal Carcinoma along with in situ component and comedo necrosis. The nephrectomy specimen was reported as Renal Cell Carcinoma- Clear Cell Type. (Fuhrman grading- 2/4). The study of synchronous malignancies may provide important evidences not only for clinical evaluation and further treatments of these tumours, but also provide clues for the aetiology, pathogenesis and the future management of cancer including the development of effective screening and surveillance protocols, with the goal to treat patients effectively.
Keywords: Double malignancy, synchronous, metachronus, breast cancer, renal cell carcinoma, renal mass, breast lump.

INTRODUCTION

The occurrence of another malignancy in a patient with a known malignant tumor is known as double malignancy [1]. Double malignancy now comprises of the sixth most common cancers and it makes 16% of all incident cancers [2]. It is classified into two categories depending on the time of diagnosis of each primary site. Synchronous cancers occur at the same time or within an interval of two months, while metachronous cancers follow in sequence and more than two months a part [3].

Renal cancer is known to be associated with multiple tumors involving bladder, prostate, rectum, lung, non-Hodgkin's lymphoma, stomach and melanoma etc. Breast cancer is also associated with increased risk of second tumor involving colon, vulva, lung, larynx, liver, uterus and thyroid [2].

Synchronous breast and renal cell carcinoma (RCC) can occur rarely [2]. We hereby report a case of carcinoma breast with synchronous renal cell carcinoma.

CASE REPORT

A 55 year old female presented with painless left breast lump noticed since last one month. There was no nipple discharge or axillary mass. Patient had no systemic complaints or any other co-morbidities. On examination, 1x0.5cm firm, irregular left breast lump was noticed. Opposite breast and axilla were normal. FNAC was done, which reported it as Breast carcinoma- Robinson's grade-II. Patient underwent treatment with desi medication before opting for surgery.

For pre-operative work up, computerised tomography was done which showed a lobulated mass in the left breast and a well-defined heterogeneously enhanced right renal mass measuring 4.7x3.7cm in the interpolar region of right kidney extending into the renal hilum & abutting the renal vessels & pelvi-calyceal system.

First a left modified radical mastectomy was performed, then after an interval of a month right nephrectomy was performed. Patient did not undergo

any pre or post-operative chemotherapy and radiotherapy.

We received a mastectomy specimen measuring 18x12x5cm with an overlying elliptical skin flap measuring 18x11cm bearing nipple areola. On serial slicing, a grey-white firm growth measuring 1.5x1x1cm was identified which was 2cm away from deep resection limit and 3cm away from overlying skin. Three level-I lymph nodes ranging in size from 0.3 to 0.5cm and one level-II lymph node measuring 0.2 to 0.3cm were identified. Microscopic findings revealed the histological appearances those of Infiltrating ductal Carcinoma along with in situ component and comedo necrosis. Deep resection Limit & Skin were free of tumour Nipple-areola showed presence of pagetoid cells. Lymph nodes- (0/4) showed reactive lymphoid hyperplasia.

After an interval of one month, we received a nephrectomy specimen measuring 8x4x3cm. On cut section, a grey-yellow growth in the medulla near hilum measuring 3.5x2.5x2cm was identified. The attached ureter measured 4.5cm in length. The histological appearances showed features those of Renal Cell Carcinoma- Clear Cell Type. (Fuhrman grading- 2/4). The tumour was reaching upto the capsule. Ureter and perinephric fat was free of tumour.

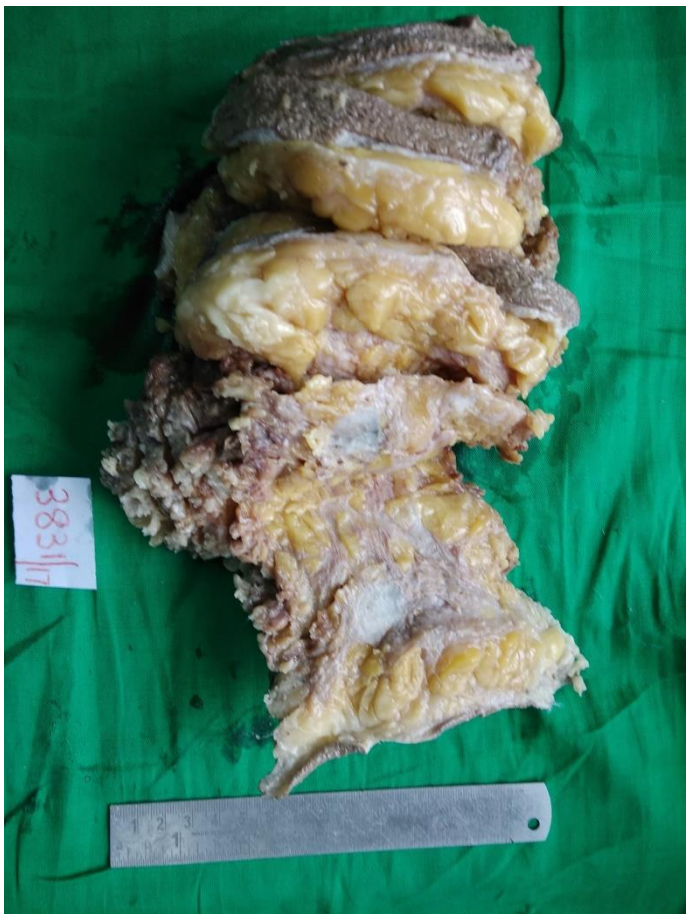

Fig-1: Gross appearance of Mastectomy specimen

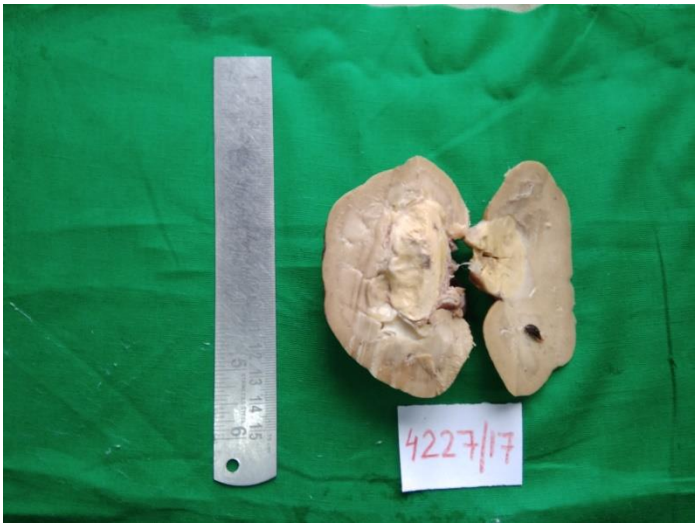

Fig-2: Gross appearance of Nephrectomy specimen

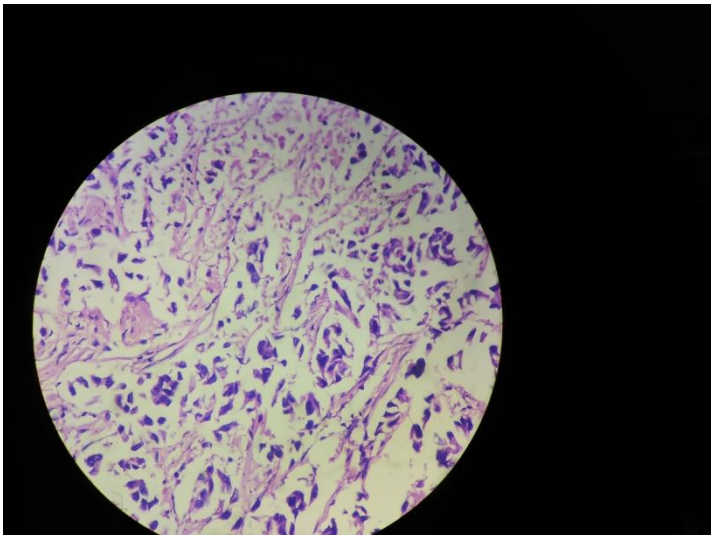

Fig-3: Microscopic appearance of Carcinoma Breast (High power)

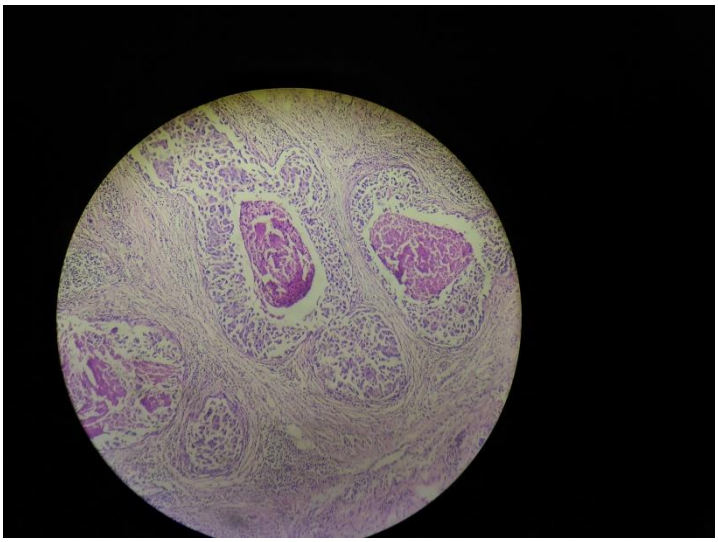

Fig-4: Microscopic appearance of Carcinoma Breast (Low power)

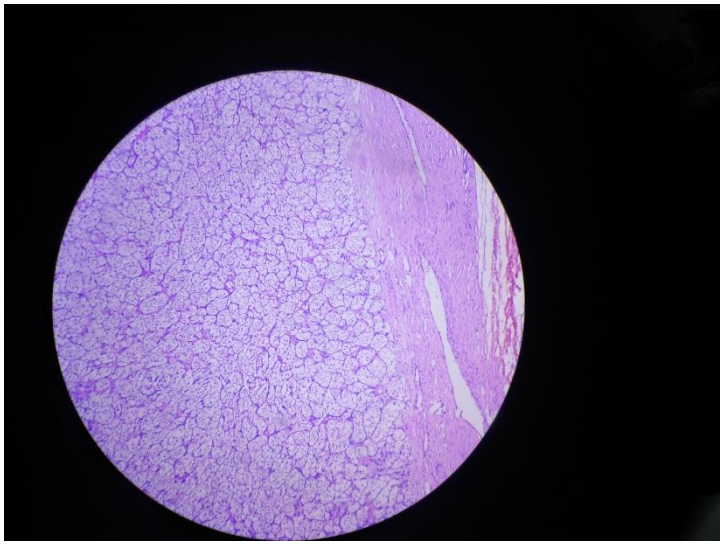

Fig-5: Microscopic appearance of Renal Cell Carcinoma (Low power)

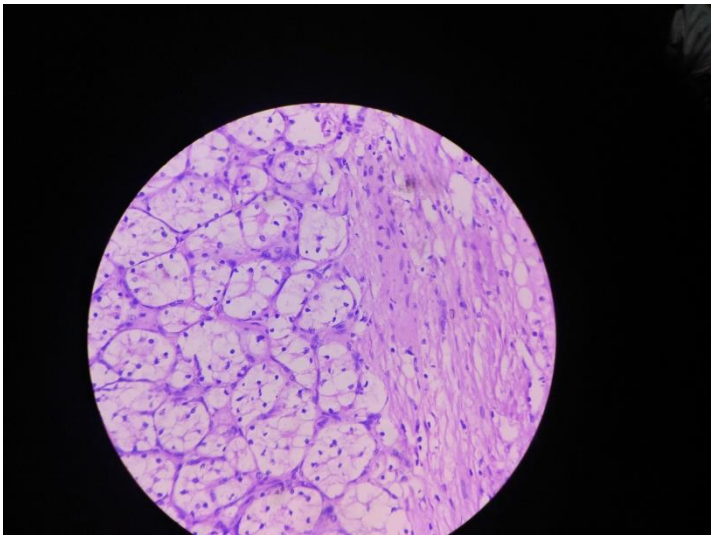

Fig-5: Microscopic appearnace of Renal cell carcinoma (High power)

DISCUSSION

Concurrent occurrence of malignancies of different organs can be seen in the same patient. Multiple synchronous malignancies are rarer than metachronous ones.[6] The aetiology of multiple primary malignant tumours is complex, and it includes not only environmental factors like tobacco, occupation, pollution, and ultraviolet light but also genetic predisposition and medical treatment in form of radiotherapy or chemotherapy, gender-specific factors, hormonal factors, and interactions of these factors with host environment. According to the literature, prevalence of multiple primary malignancies is about 4.5-11.7% [4].

Literature reveals that renal cell carcinoma has been associated with other primary malignancies (synchronous and metachronous); like those of colon, rectum, stomach, prostate, bladder, endometrium, ovary, breast, nasopharynx, lung and haematological malignancies. Association of breast cancer synchronous renal cell cancer is very rare and very few cases have been reported [5].

In a population based study done by Jiao F *et al*., eight cases of synchronous breast primaries with RCC was reported with prevalence of 13.1%, which was less than the previous studies i.e., 26% which was reported by Christian B *et al*., [6] Piccinini L in 1996 has reported 2 cases of breast primaries with synchronous RCC. Christian B had reported 8 cases of carcinoma breast in RCC patients during a follow-up period of 1987-2002, in his population based study of multiple malignancies in Norway [7].

Sato *et al*., reported that other primaries at the time of nephrectomy for RCC was an independent prognostic factor for overall survival after the operation. Furthermore patients with localized RCC with coexistent cancer had poorer overall survival than those with localized RCC alone [8]. Treatment of RCC in patients with multiple primary tumours should be based

not only on the stage and operability of the kidney tumour, but also on an evaluation of the disease status of the other malignant disease.

Because of limited therapeutic and diagnostic option synchronous malignancies whenever found causes a lot of problems to both clinicians and patients.

CONCLUSION

The study of synchronous malignancies may provide important evidences not only for clinical evaluation and further treatments of these tumours, but also provide clues for the aetiology, pathogenesis and the future management of cancer. In cases with incidentalomas, histopathology and immunohistochemistry confirm the primary nature of each malignancy and exclusion of possible metastasis from either site; for the better outcome of management and survival benefit. One should consider the possibility of concomitant dual or multiple primary tumours in a patient presenting with mass lesions at various sites, especially if one of the sites is the kidney.

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