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Clear Cell RCC with Lytic Bony Lesions: Metastasis or Multiple Myeloma, A Diagnostic Dilemna

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Authors' contributions

This work was carried out in collaboration among all authors. Author AM designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors PA and JM managed the analyses of the study. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Introduction: The existence of two malignancies together is very rare. Multiple myeloma and RCC occurring together is highly uncommon. Possible reason for co-existence may be similar cytokine growth requirements however no etiology has been proven for sure.
Case Presentation: We present a case with a renal lesion and bony lytic lesions suspected of being secondary osseous metastasis. However on further evaluation the bony lesions were found to be due to co-existent multiple myeloma.
Conclusion: The occurrence of RCC and MM together is higher than the expected incidence. The causative etiology may be genetic abnormalities, environmental exposures or immune-related mechanisms that predispose the patient to the second malignancy. These findings are particularly relevant in the management of patients with known RCC and lytic bone lesions.

Keywords: Lytic bone lesions in RCC; coexistant malignancies; multiple myeloma.

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ABBREVATIONS

RCC : Renal cell carcinoma
MM : Multiple myeloma
IMWG : International Myeloma Working Group
IL : Interleukin

1. INTRODUCTION

The occurrence of two malignancies together is rarely seen however there are various reported cases of co-existence hematologic malignancies like multiple myeloma and renal cell carcinoma [1].

Multiple myeloma (MM) is a haematological malignancy occurring due to proliferation of monoclonal plasma cells that causes accumulation of abnormal amounts of immunoglobulin and its fragments in the blood. Environmental exposure to radiation and chemicals are the suspected causative factors for occurrence of multiple myeloma, but still the definitive etiology of multiple myeloma is highly unknown [2].

Although haemangioblastomas, pancreatic neuroendocrine tumours and phaeochromocytoma has been seen to co-exist with familial forms of RCC, e.g. with Von HippelLindau disease, sporadic kidney cancer is rarely associated with other malignancies [3].

Production of a tumor stimulating substance in the form of interleuken-6 (IL-6) by one malignancy, which enhances the potential of the second malignancy to develop is one possible explanation [4].

Here we present a case of RCC diagnosed to have co-existing Multiple myeloma on evaluation for skeletal lytic lesions.

2. CASE PRESENTATION

A 54 year old male presented to the urology OPD in our hospital with complaints of haematuria along with passage of clots. Ultrasound examination showed a left upper pole mass suscpicious of malignancy.

Blood investigations were within the normal limits. Contrast enhanced CT showed a heterogeneously enhancing well defined mass lesion with multiple septations, cystic spaces and solid component measuring 7x4.5 cm noted involving midpole with washout in the left kidney (Fig. 1). There was no significant lymphadenopathy. Multiple lytic areas involving visualized vertebrae, sacrum and iliac wings, largest measuring 1.2 cm in D10 vertebral body were seen (Fig. 2). A provisional diagnosis of left RCC with skeletal metastasis was kept.

Fig. 1. CECT depicting a left renal mass

As the patient was low risk IMDC he was planned for left Radical nephrectomy followed by adjuvant chemotherapy for skeletal metastasis.

Left radical nephrectomy was done. Post op period was uneventful. Abdominal drain and catheter was removed on post op day 3 and 4 respectively and the patient was discharged on post op day 5. HPE was suggestive of tumor cells arranged in alveolar and acinar pattern with areas of hemorrhage, necrosis and inflammatory infiltrates consistent with renal clear cell carcinoma.

On follow up the patient was advised to get a bone scan for evaluation of skeletal lesions. To our surprise bone scan showed no uptake in the lytic lesions (Fig. 3).

A suscpicion of multiple myeloma was kept. Serum calcium was 8.53 ng/ml and Vit D was 16.64 ng / ml. Bone marrow biopsy was done that showed bony trabeculae encasing hematopoietic marrow elements with increased Plasma cells more than 60% suggestive of plasma cell myeloma (Fig. 4) according to IMWG criteria .Protein electrophoresis was done which showed a predominant M band confirming the diagnosis of multiple myeloma (Fig. 5).

Patient was started on imatinib which was well tolerated by the patient.

Post op after 1 month serum creatinine was normal, no anomaly on abdominal ultrasound with normal calcium levels.

Fig. 2. CT scan showing lytic bony lesions in the spine

Fig. 3. Bone scan of the patient showing no uptake in the bony lesions

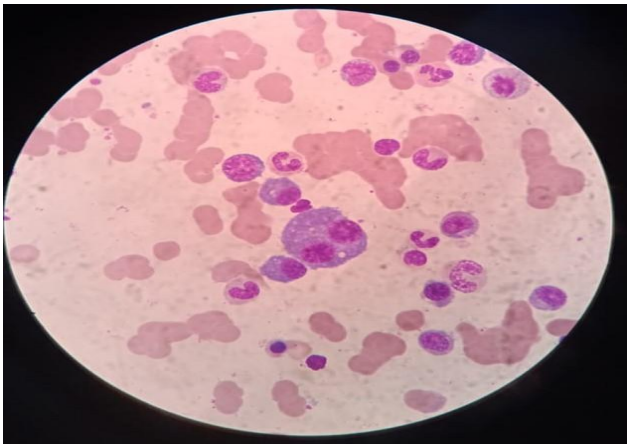

Fig. 4. Biopsy from the bony lesions depicting M cells

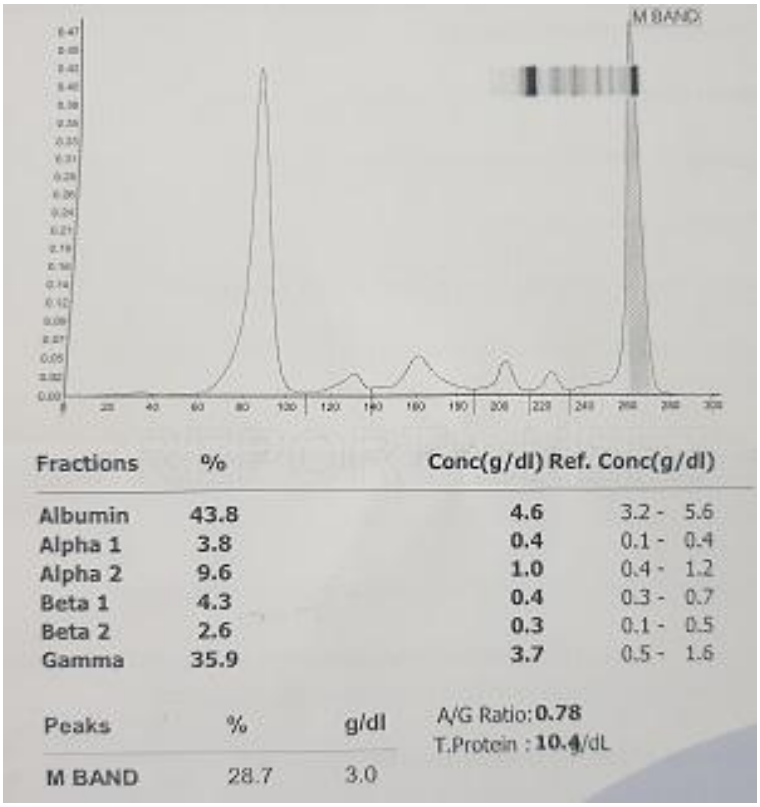

Fig. 5. Hb electrophoresis depicting M peak

3. DISCUSSION

Hematological malignancies co-existing with renal cell carcinoma are rare however, various case reports are there in literature supporting these occurences. In our extensive research of literature the first report of coexistence of multiple myeloma and Renal cell carcinoma was in 1977 by Dr Law IP [5]. Later due to increased attention by clinicians the incidence has gradually increased [6,7].

Various studies have been done to hypothesize an assosciation between these two malignancies [8,9]. Genetic abnormalities, environmental exposures or immune-related mechanisms predisposing to the second malignancy are some of the numerous possible causes which have been suspected of causing this association. However, higher levels of IL-6 in both of these malignancies was the most promising etiological factor due to occurence of immune dysregulation in both of these malignancies.

Till now in literature no common etiology has been reported, yet inspite of the numerous possible causes. Therapeutic modalities employed for MM have been tried with some success for RCC; which further supports the probable common pathophysiology [10].

In this case report, we have reviewed a patient with coexistant multiple myeloma and renal cell carcinoma. It is not obvious which malignancy occurred first as multiple myeloma was discovered incidentally during work up of lytic lesions suspected of metastasis from the primary malignancy. As in our patient the renal tumour was operable, radical nephrectomy was done first followed by chemotherapy for his myeloma.

4. CONCLUSIONS

In patients of RCC with skeletal lytic lesions a possibility of co -existing multiple myeloma must be kept in mind. Multiple myeloma can be diagnosed with Hb electrophoresis and biopsy from the lytic lesions. Therefore, any lytic bone lesion in a renal cell carcinoma patient should be evaluated for potential myeloma; especially in absence of other metastatic lesions.

CONSENT AND ETHICAL APPROVAL

As per university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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