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Cutaneous Metastasis of Renal Cell Carcinoma after a Decade of Radical Nephrectomy

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Abstract: Cutaneous metastasis in the scalp in renal cell carcinoma is rare. Here we report such a case of scalp metastasis ten years after radical nephrectomy with successful outcome which was very rare. There are only about 30 cases of scalp metastases secondary to renal cell carcinoma in the literature.
Keywords: Cutaneous metastasis, carcinoma, nephrectomy.

INTRODUCTION:

Renal cell carcinoma accounts for approximately 2 to 3% of the cancers in adults, and it is more common in men than women (1.5:1) with an increasing incidence worldwide. It is the third most common malignancy of the genitourinary tract, after prostate and urinary bladder tumour. Approximately, one third of the patients usually have distant metastases at presentation and 20 to 40% of patients develop metastases in the course of the disease. The most common sites of metastases are lungs, lymph nodes, liver and bones. Cutaneous metastases are rare (3% to 6% of cases), scalp metastases are extremely uncommon and it signifies poor prognosis. Metastatic Renal cell carcinoma is almost always fatal, with 10-year survival rates of less than 5%. Here, we report an unusual case of scalp metastasis of renal cell carcinoma treated with right radical nephrectomy 10 years back.

CASE PRESENTATION

A 60 Year-old man presented with a painless, gradually increasing right parieto-occipital scalp swelling for 9 months duration. There was no history fever, pain, significant weight loss or trauma. He had history of right radical nephrectomy 10 years back for right renal tumour. Patient is non-smoker, non-hypertensive and non-diabetics. Family history was unremarkable. Histopathology report of right renal tumour showed clear cell carcinoma of 8.24cm ×5.41cm in size, there was no infiltration to the capsule or the perinephric fatty tissue and tumour had not invaded the renal vein, the renal pelvis or the ureter. All the resection margins were negative and there were no lymph nodes involvement present. Overall, it was staged T2AN0M0. He was on routine follow-up with physical examination, annual chest x -ray and abdominal imaging for initial 5 years and then he lost for follow up. On examination, there was a smooth, non-tender, variegated swelling of 10cm x 8cm at the right parieto-occipital region of scalp (Fig.1). It was fixed to the underlying bone but free from overlying skin.

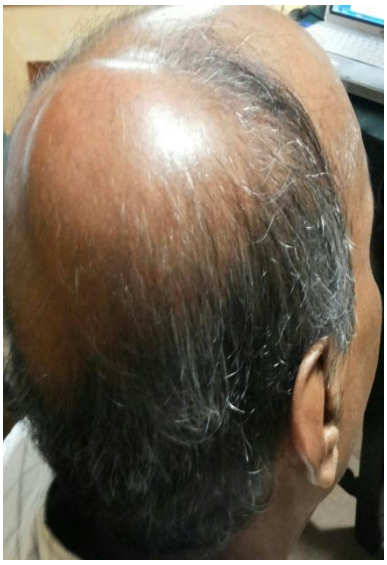

Fig 1: Clinical photograph of the patient showing the scalp tumour

Complete blood count, blood biochemistry with electrolytes, liver function test and serum Ca^{2+} was within normal limit. X –ray of skull (AP and lateral) showed a large bony filling defect in the right parietal region posteriorly with irregular margin. No evidence of raised intracranial tension is shown and sella turcica is with in normal limit. On whole body bone scintigraphy there was increased tracer uptake over a circumscribed area at right parieto- occipital region (Fig.2).

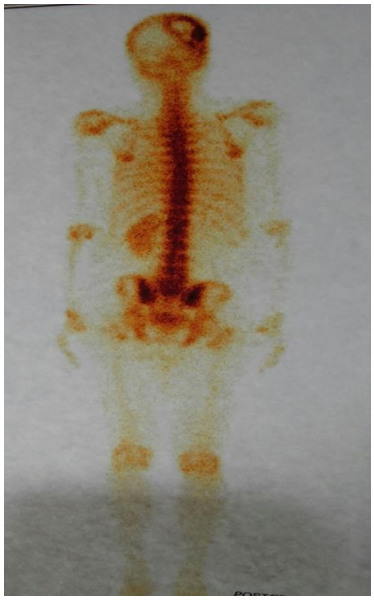

Fig 2: Whole body bone scan showing increased radioisotope uptake at right parieto-occipital region.

Chest x-ray was normal. Abdominal CT scan showed no local or regional recurrence. Fine needle aspiration cytology from the scalp swelling showed papillary cluster of cells having moderate amount of granular eosinophilic vacuolated cytoplasm and eccentrically placed round to oval nuclei having irregular nuclear membrane, and prominent macro nucleoli, suggested as metastatic deposit from renal cell carcinoma.MRI of brain & MR spectroscopy suggested on T1 weighted image fairly large extra- axial mass lesion over right parietal lobe with bony destruction. The lesion measures 58.4 mm in antero-posterior, 80.5mm in lateral and 88.2mm in crania-caudal dimensions (Fig.-3).

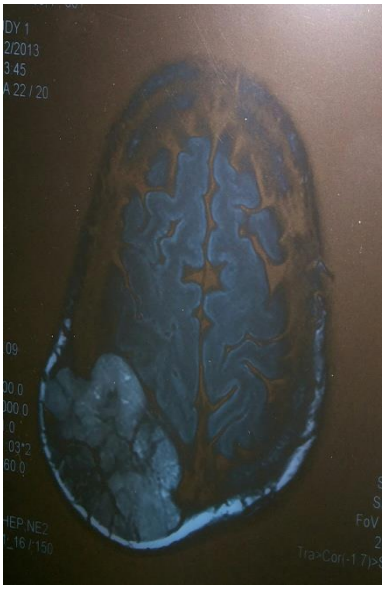

Fig 3: MRI showing well circumscribed tumour without any brain involvement.

Heterogeneous enhancement is seen in post contrast study. Destruction of bony calvaria was noted with extra-calvarial extension with soft tissue swelling. Features suggestive of secondary metastastasis with pressure effect on adjacent brain parenchyma. In MR spectroscopy there is increase in choline/creatine ratio is noted. Presence of small M.I. peaks and lactate peaks were noted. As a single metachronous scalp lesion presenting more than 10 years after primary tumour without involvement of brain resection of the tumour done with complete removal. Histopathological report of resected tissue showed malignant epithelial cells with clear cytoplasm while others had eosinophilic, granular cytoplasm suggestive of metastatic deposit from renal cell carcinoma (Fig.-4). Post-operative period is uneventful. In the regular follow up period of last one year, patient has no new complaint. On physical examination, blood biochemistry and imaging no metastatic lesion is suspected or identified.

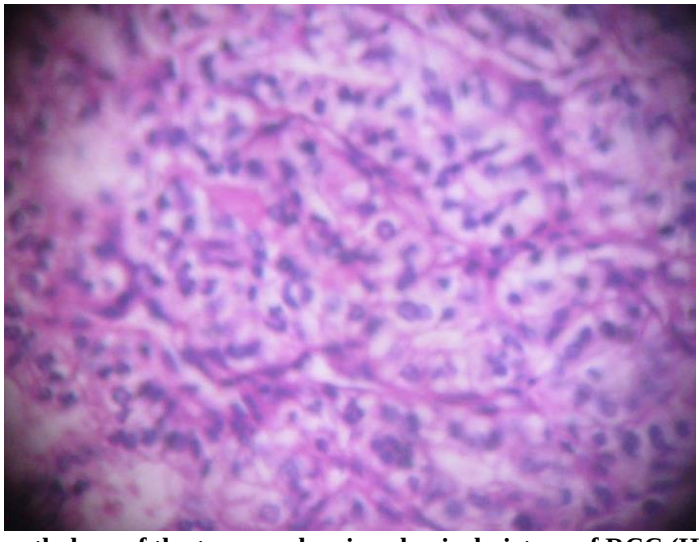

Fig 4: Histopathology of the tumour showing classical picture of RCC (H & E X 100)

DISCUSSION:

Renal cell carcinoma accounts for 80 to 90% of malignant neoplasm of kidney in adult. Renal cell carcinoma has peak incidence between 50 and 70 years of age (mean age, approximately 66 years) and with male preponderance (2:1). Recurrence of Renal cell carcinoma is about 20 to 40% of patients with clinically localised disease after nephrectomy [1] and most recurrence occurs within the first 3 to 5 years. Most common sites of metastases include lymph nodes, lungs, liver, contra-lateral kidney, adrenal glands, brain and bone [2]. Cutaneous metastasis accounts for 2.4 to 4.4% of malignant skin disease. Renal cell carcinoma is the primary tumour in about 6% of skin metastasis. After nephrectomy very few patient presented with cutaneous metastases. The most common sites of cutaneous metastasis were the scalp, followed by the abdomen [3]. There are various mechanisms described for cutaneous metastasis. The most frequent is the direct invasion of the skin tissue overlying the tumour [4]. The rich vascular supply of renal cell carcinomas facilitates haematogenous extension and the development of distant metastases. The most important hematogenous extension route in renal cell carcinoma is through the vena cava system, to the lung. Arteriovenous and systemic shunts are thought to facilitate the tumour spread to the head and neck region. Tumour-related growth factors such as parathormone-related protein and truncated fibronectin growth factor may play a role in the localisation of cutaneous metastasis in the head and neck region [4].

As in this case, patient may presented with a long time interval from their curative radical nephrectomy with metastatic disease. Late recurrence is defined as those recur 10 or more years after the initial diagnosis of disease. The overall recurrence rate is about 11% [5]. There was reported case of recurrence after 45 years of initial diagnosis of disease [6]. Cutaneous metastasis signifies poor survival of patient, in one study the mean survival was only 7 months. More than one metastasis is present at about 90% of patient [7]. The mean 5-year survival rate of patients with a cutaneous metastasis is about 13% to 50 % for a single metastatic lesion and about 0%to 8% in multiple metastatic lesions[8]. Therefore treatment options are limited and mostly palliate

CONCLUSION

- Even though cutaneous metastases are associated with a poor prognosis, it is important to identify lesions early to help aid in diagnosis and treatment.
- Careful examination, biopsy often with special histological stains, is required, as well as possible further studies and imaging to identify an underlying malignancy.
- Therefore, it is important to consider renal cell carcinoma metastasis in the differential diagnosis of new onset nodules, ulcers, or tumours in the head and neck, especially in a patient with a past history of renal tumour.

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