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Pathology

INCIDENTAL CUTANEOUS METASTASIS OF RENAL CELL CARCINOMA – REPORT OF AN INTERESTING CASE.

Dr. Nehal Ahmad	MD, Assistant Professor - Pathology Department of Pathology Hamdard Institute of Medical Sciences and Research Jamia Hamdard, New Delhi 110062, India
Dr Farhat Fatima	PG Resident– Pathology, Department of Pathology Hamdard Institute of Medical Sciences and Research Jamia Hamdard, New Delhi 110062, India
Dr Zeeba S Jairajpuri*	MD, Professor – Pathology, Department of Pathology Hamdard Institute of Medical Sciences and Research Jamia Hamdard, New Delhi 110062, India *Corresponding Author
Dr Mohammad Mohsin	MS, Assistant Professor – Surgery, Department of Surgery, Hamdard Institute of Medical Sciences and Research Jamia Hamdard, New Delhi 110062, India
Dr Amir Chauhan	MS, Senior Resident - Surgery, Department of Surgery Hamdard Institute of Medical Sciences and Research Jamia Hamdard, New Delhi 110062, India

ABSTRACT **Background :** Clear cell variant of renal cell carcinoma has highest risk of metastasizing. Cutaneous metastasis is however unusually rare. We report a case of an elderly male with a lesion on the chin, clinically suspected to be haemangioma, on histopathology diagnosed as cutaneous deposits of renal cell carcinoma, an incidental finding.**Case Report :** A 75 year old male presented to the surgical OPD with a swelling on the chin, noticed after trauma whilst shaving. The painless lesion rapidly progressed over a period of one and half month with no associated pain. Swelling was surgically excised with clinical suspicion of haemangioma. With histopathological and immunohistochemical examination, a diagnosis of metastasis of clear cell carcinoma originating from the kidney was made. **Discussion :** In the present case, the patient was an old male presenting with metastasis to the skin of chin, rapidly growing, an incidental finding, search for the primary lesion revealed a renal mass diagnosed as renal cell carcinoma. **Conclusion :** Although cutaneous metastasis of Renal cell carcinoma to skin is rare specially in chin region, proper clinical evaluation with the help of radiological correlation must be done to find out the primary lesion.

KEYWORDS :

INTRODUCTION:

A substantial number of patients present with metastasis of renal cell carcinoma. An estimated 18% of patients with RCC have metastasis at the time of diagnosis (synchronous metastasis) [1], while more than 50% will develop metastatic RCC after nephrectomy during follow-up (metachronous metastasis)[2]. Patients with clear cell RCC— which is the most common subtype, representing 75%–80% of all RCCs, according to the Heidelberg classification—have the highest risk of developing metastatic disease. More than 90% of patients with metastatic RCC have clear cell morphology[3]. Rarely they appear at unusual sites, cutaneous metastasis is one such location.

In this article we present a case of 75 year male with cutaneous metastasis of clear cell Renal cell carcinoma to chin with no previous history of primary diagnosis.

Case Report :

A 75 year old male presented to surgery OPD with a swelling on the chin, noticed after trauma whilst shaving, non-healing and a painless progressive growth over a duration of one and half month, which ruptured on its own with profuse bleeding, clinically suspected to be haemangioma. Swelling was excised and was sent for histopathological examination. There was no previous history of any known disease. Grossly a single, irregular, skin covered grey brown tissue with attached hair, measuring 4x2.6x1.5cm was identified. An exophytic ulcerated lesion seen on the skin surface measured 2.5x1.5x1.5cm. On cut section grey-white area seen along with dark brown hemorrhagic area extending upto the base. Dark brown hemorrhagic area measuring 1.8x1.5x0.5cm.(Figure A) Sections were taken , processed and stained with H & E. On microscopic examination a well-demarcated lesion showing nests and trabeculae of clear cells separated by thin fibrovascular septa. (Figure 1B & 1C) These cells show abundant clear to focally granular cytoplasm, irregularity in nuclear contour, finely dispersed to coarse chromatin, prominent nucleoli in some cells. These tumor cells are seen reaching upto the resected margin. Occasional atypical mitotic figure seen. Subepithelial tissue shows mild chronic inflammatory cells and pilosebaceous units. Empirically, diagnosis of clear cell lesion was offered with differential of metastasis from clear cell carcinoma of kidney. The patient was advised IHC PAX-8, CD-10, HMB-45 for characterization and confirmation. Meanwhile USG of abdomen also advised in view of suspected renal lesion which showed right renal heterogenous mass lesion measuring 89x75x70 mm, arising from the upper pole of right kidney showing areas of cystic necrosis and few calcified specks within. Lesion showing rich internal vascularity with likely diagnosis of malignancy. Also IHC for CD 10 came out to be positive. (Figure 2A & 2B) Correlating all the findings, a final diagnosis of metastasis from clear cell carcinoma of kidney was given.

DISCUSSION:

Renal cell carcinomas (RCCs), accounts for 80 to 85 percent of all primary renal neoplasms and occurs predominantly in the sixth to eighth decade of life[4]. Clear cell Renal carcinoma usually metastasize via hematogenous route to lung, bone, lymph node and skin, liver, adrenal gland in decreasing order of frequency etc. Cutaneous metastasis is uncommon and occurs in around 1% to 3% of patients [5]. About 80–90% of patients with skin metastases are seen in patients with a previous diagnosis of renal cell carcinoma. However, 10–20% of patients are diagnosed with cutaneous lesions before the primary lesion is diagnosed[6]. Common location of skin metastases in these patients is the scalp and face. These lesions have tendency to grow rapidly[7].

In our case also ,the patient was an old male who presented with metastasis to skin of chin with rapid growing history and diagnosed before the primary lesion was diagnosed which is very rare. Our case was not having any previous history of renal disease so it was incidental finding.

There are many differential diagnosis which can simulate macroscopically (haemangioma, cutaneous horns, basal cell carcinoma) as well as microscopically(xanthoma, xanthelasma, sebaceous adenoma, sebaceous carcinoma, sebaceous epithelioma, balloon cell nevi, clear cell hydro adenomas) that has to be rule out before final diagnosis being made[8].

In our case too clinically it was sent to lab with probable diagnosis of haemangioma due to its location, colour and profuse bleeding tendency.

Grossly these metastatic tumors are nodular, rapidly growing, round or oval-shaped lesions, that can be of various colors ranging from normal skin color to a red-purple color [9].

Histologically alveolar nests and sheets of clear cells interspersed by delicate vascular network are seen. These blood vessels are very delicate and of a uniform small caliber and are particular to clear cell, renal cell carcinoma. Although a solid sheet of alveoli is a common pattern of growth, the alveoli often have small and large central lumens that contain freshly extravasated erythrocytes. Commonly, some of the lumens are larger, forming microscopic cysts of variable size . The cytoplasmic volume of clear cell renal cell carcinoma is variable over a range from moderate to voluminous. (Ref) The immunohistochemical markers help further in differentiating these lesions. These markers are epithelioid membrane antigen(EMA), carcinoembryonic antigen(CEA), CD-10, renal cell carcinoma marker(RCC-Ma)[3,5]

Skin metastases are considered to have a poor prognosis, which is associated with synchronous visceral metastases in up to 90% of cases, resulting in tumor-specific survival of usually shorter than six months[10].

Metastatic renal cell carcinoma therapy consists of surgical (radical nephrectomy) treatment, in selected patients and use of immune checkpoint inhibitors or anti-angiogenic tyrosine kinase inhibitors (TKIs) depending on patients' risk. The treatment approach for single, isolated skin lesions is surgical removal of the lesion. Radiotherapy may be an alternative to surgery in cases where surgical intervention is not feasible[3].

Conclusion :

Although cutaneous metastasis of Renal cell carcinoma to skin is rare specially to the chin region, proper clinical evaluation with the help of radiological correlation must be done to locate the primary lesion as in the present case where it was an incidental finding which prompted the diagnosis of the primary lesion in the kidney

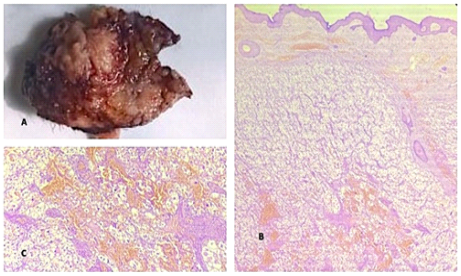
Legends of Figure :

1) Figure 1 :

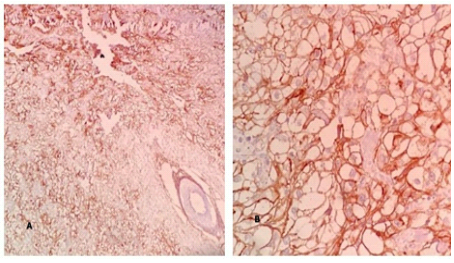
A: Macrophotograph showing solid grey-white area seen along with dark brown hemorrhagic area.

B: Photomicrograph showing a well demarcated lesion beneath the overlying skin showing sheet of clear cells (H & E stain, 4x)

C: Photomicrograph showing sheets and nests of clear cells separated by thin fibrovascular septa (H & E stain, 10x)



2) Figure 2 : A & B: Photomicrograph showing positive reaction of tumour cells with CD10(10x,40x)



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