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TRU-CUT ISOLATED PAROTID METASTASIS FROM RENAL CELL CARCINOMA: AN UNUSUAL PRESENTATION AND REVIEW OF LITERATURE

Urology

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ABSTRACT

Background: Renal cell carcinoma with isolated metastasis to the parotid gland is extremely rare. Slow growth, low level of suspicion and negative Fine needle aspiration cytology (FNAC) often delay the diagnosis. A high level of suspicion of metastatic disease from a specific site is important, otherwise can be missed for a benign swelling leading to delayed treatment and poorer prognosis. **Case presentation:** A 59-year-old male presented with a swelling in the right preauricular area 5 years post right radical nephrectomy for right renal cell carcinoma (RCC). The examination was suggestive of a benign swelling. FNAC was done twice, which was inconclusive. A Tru-cut biopsy of the lesion revealed metastatic RCC. MRI revealed a dumbbell type of tumor extending deep into the gland and encasing vessels. PET-CT was negative for metastasis to the rest of the body. The patient received targeted therapy followed by radiation therapy with imaging showing non-progression of the disease. **Conclusion:** Metastatic disease should be considered whenever a parotid mass is detected in patients with an RCC history. Examination findings can be misleading; hence dedicated imaging is critical. Small parotid metastasis can be cured with surgery. A combination of chemotherapy and radiation therapy can palliate the unresectable disease.

KEYWORDS

Parotid, Metastasis, Renal cell carcinoma

BACKGROUND:

Renal cell carcinoma (RCC) metastasis to the parotid gland after tumour nephrectomy is extremely rare. When one encounters a parotid mass, diverse differential diagnoses have to be considered. A high level of suspicion of metastatic disease is important for the correct diagnosis and treatment of the disease. Approximately 30–40% of the patients already have metastasis at the time of the diagnosis, with a 15% incidence of metastasis to the head and neck [1]. Metastatic malignancy of salivary glands was reported in the literature. However, as concerns the origin of the tumor, melanomas or squamous-cell carcinomas of the skin or mucosal folds of the head and neck are the most prevalent types [2]. Metastasis to the major salivary glands predominantly goes to the parotid gland even though their involvement is rare.

Case Presentation:

A 59-year-old male presented with a swelling in the right preauricular area from the last four years, which was insidious in onset, progressive in nature and painless. He was previously operated on for right renal mass nine years back (open radical nephrectomy). The histopathology of the RCC was of a clear cell type (stage pT1N0M0), Fuhrmann grade 2 with sarcomatoid features. During the postsurgical follow-up, the examinations were unremarkable, and surveillance imaging did not suggest any tumour recurrence till five years. The clinical examination showed an 8 x 4 cm swelling in the right parotid region. It was firm to hard in consistency, not fixed to surrounding structures. Fine needle aspiration was performed twice but was inconclusive. The patient underwent a tru-cut biopsy, which revealed metastatic RCC (**Figure 1 a**). The tumour tissue was epithelial membrane antigen showed positive and weakly PAS-positive. On Immunohistochemistry, cells were positive for CK 10, CK 8, vimentin, and negative for carcinoembryonic antigen, p63, and S100. The proliferation index Ki 67 was below 10%. Immunohistology features were consistent with the previously treated renal cell carcinoma.

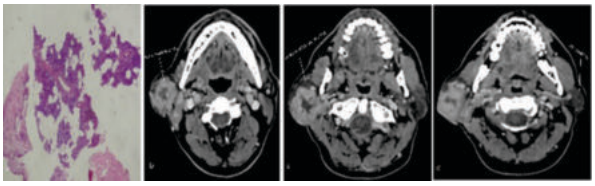

Fig 1 a Tru-cut biopsy showing metastatic RCC
Fig 1 (b,c) CECT showing right parotid mass
Fig 1 d CECT showing a normal Left parotid gland

Contrast-enhanced computed tomography (CECT) (**Figure 1b**), (**Figure 1 c**), (**Figure 1 d**) and Contrast-enhanced MRI (CEMRI) revealed tumor in both the superficial and deep lobe of the Parotid, abutting internal jugular vein (IJV) and sternocleidomastoid (SCM) with loss of fat planes and engulfment of the adjacent vessels by 180 degrees (**figure 2 a-f**). The patient was found to be inoperable. The patient was put on Sunitinib 50 mg daily single dose for four weeks followed by two weeks off and subjected to radiotherapy with a total dose of 30 Grays in 10 fractions (fr) with Cobalt-60(Co-60) treatment unit. The patient showed a stable response to the treatment. The patient was on regular follow-up with non-progression of disease till now on physical examination and MRI scans.

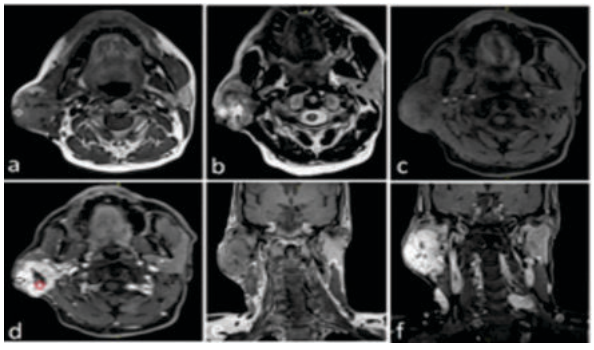

Figure 2 (a,b,c,d) CEMRI showing tumor involving both superficial and deep lobe of right parotid gland

Fig 2 (e,f) CEMRI shows tumor abutting the IJV,SCM and adjacent vessels

DISCUSSION:

Metastasis to Parotid usually arises from skin malignancy of the head and neck, with melanoma accounting for most of the cases, followed by squamous cell carcinoma. Parotid metastasis in RCC is an extremely uncommon finding [3]. The mechanism of spread is hematogenous as RCCs are very hypervascular tumors with multiple AV shunts and a propensity for high metastasis.

The interval between the initial diagnosis and Parotid metastasis ranges from a few months to 10 years. The swelling is insidious in onset with pain in the parotid gland [3]. Our patient presented with a swelling

in the Parotid gland five years after undergoing a Radical nephrectomy for RCC. It was insidious in onset but painless.

In patients presenting with parotid swelling, one should maintain a high index of suspicion, as the unsuspected disease may be completely overlooked. Fine needle aspiration cytology (FNAC) is usually performed as part of the initial workup, but false-positive and false-negative cases have been reported [4]. FNAC was performed twice in our case, which did not pick up the disease. It was followed up by a Tru-cut biopsy of Parotid, which confirmed the diagnosis.

Once carcinoma is identified on parotid biopsy in a patient with a history of renal cell carcinoma, re-staging is mandatory. Computed tomography (CT) is preferred for the staging of the tumor. When combined with multi-slice CT, positron emission tomography (PET) increases lesion localization and diagnostic accuracy. Fluoro deoxyglucose (FDG) PET-CT accurately shows the presence of a recurrence or metastasis [5]. MRI is also done and is superior to CT in defining tumor characteristics and extension. FDG-PET was done in our case along with CECT and MRI for accurate staging of the disease. Depending upon the extension of the disease, treatment varies accordingly. Treatment of diffuse metastatic disease combines chemotherapy, immunotherapy, hormone therapy and radiation therapy, but the results are dismal [6]. In the case of clinically solitary metastasis, treatment is aggressive surgical resection, as in solitary metastasis amenable to surgical resection, the five-year survival rate is 53% [7]. The long interval between the curative treatment of primary and solitary parotid metastasis are associated with good prognosis. Depending upon the extent of parotid involvement, surgical treatment varies from superficial parotidectomy with preservation of the facial nerve to total parotidectomy with neck dissection [3,8]. In our case parotid gland was massively involved by the tumor with extension into the skull base and was not amenable to surgical resection.

CONCLUSION:

Solitary metastasis in Renal cell carcinoma should be subjected to resection whenever feasible. In the case of small parotid metastasis, consideration of superficial parotidectomy with facial nerve preservation should be given, whereas total parotidectomy with lymph node dissection should be reserved for larger resectable cases. Unresectable disease should be treated with radiotherapy, targeted therapy and hormonal therapy. The outcome is generally very poor due to its resistance to chemotherapy.

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