

Cytological Diagnosis Of Renal Cell Carcinoma In Cervical Lymphnode: A Case Of Unusual Metastasis

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Abstract

A 60 year old male presented with a progressive painless swelling in the left cervical region, he had a past history of Right Renal cell carcinoma given as? Clear cell /? Papillary variant on core biopsy, FNAC from the cervical swelling confirmed metastatic renal cell carcinoma deposits. Further follow up patient revealed that no treatment done after the diagnosis of metastatic disease, got bed ridden and eventually died.

A solitary cervical metastatic mass, such as the one described in this case, is an exceptionally rare occurrence. Given the associated morbidity and quality-of-life implications, surgical excision is generally considered the preferred treatment approach for head and neck metastasis ^[1].

Keywords: Renal cell carcinoma (RCC), Metastasis, Cervical lymphnode.

Date of Submission: 24-10-2025

Date of Acceptance: 04-11-2025

I. Introduction

Renal Cell Carcinoma (RCC) is a relatively rare but significant malignancy, accounting for approximately 3% of all adult malignant tumors^[1]. It predominantly affects individuals in their fifth and sixth decades of life, with a slight male predominance and male : female ratio is 1.5:1 ^[1].

Renal cell carcinoma is the 3rd most common neoplasm below clavicle which metastasize to head and neck region^[2]. However, among 7.5% of patients with renal cell carcinoma, head neck metastasis is the primary presenting symptom but about 1% of these cases confined to only head and neck region ^[6].

II. Case History

A 60 year old male patient, presented with painless swelling over left side of neck, gradually progressive. Past history reveals patient is a known case of retroviral disease, diagnosed as RCC ? papillary variant / ? Clear cell variant in Right kidney by core biopsy in the year 2022 otherwise normal.

On examination, a single swelling noted in the left cervical region, measuring 4x4 cms, firm, non tender. Aspirated blood mixed material.

FNAC revealed metastatic deposits of Renal cell carcinoma in left cervical lymphnode.



Figure 1 - 60yr /Male patient, with single swelling in the left cervical region measuring approximately 4 x 4 cms.

Microscopy

Cytological Smears studied are cellular showing sheets, clusters of polyhedral cells showing hyperchromasia, nuclear pleomorphism, abundant granular and foamy cytoplasm some of these cells showing prominent nucleoli admixed with inflammatory cells comprising of lymphocytes in the background.

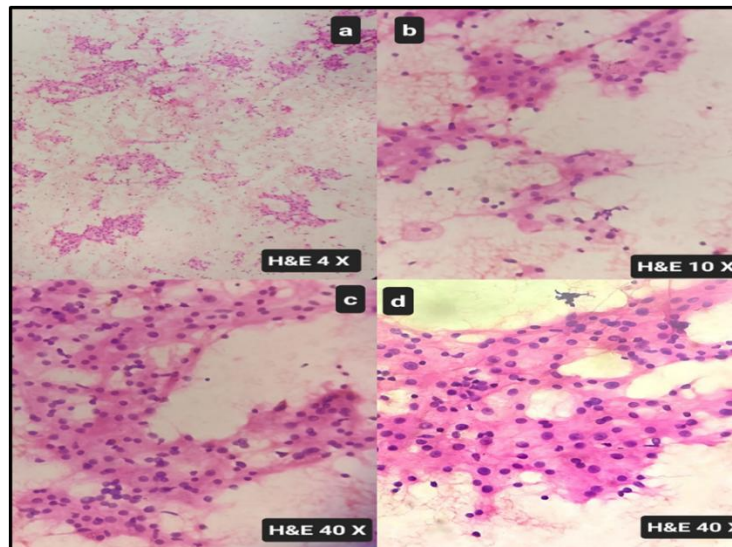


Figure 2 - Photomicrographs - Direct FNAC from the left cervical swelling.

- (a) sheets of polyhedral cells showing hyperchromasia against background of lymphocytes [hematoxylin and eosin (H&E), 4X]
- (b) Tumor cells showing hyperchromasia and pleomorphism with abundant granular foamy cytoplasm [hematoxylin and eosin (H&E), 10 X]
- (c & d) Individual tumor cells showing hyperchromasia few cells showing prominent nucleoli admixed with inflammatory cells [hematoxylin and eosin (H&E), 40 X]

III. Discussion

Renal cell carcinoma, also known as hypernephroma accounting for 3% of adult cancers^[3]. It has propensity to metastasize to lungs (76%), bones(42%), and liver(41%) are the most common sites^[4]. The incidence of metastatic renal cell carcinoma to head and neck region was reviewed and it was found to be 14.3%^[5]. In a striking 7.5 % of patients, the initial clinical manifestation is disease in the head and neck, while a mere 1% have isolated metastasis to this region^[6], underscoring the importance of vigilant monitoring. Thyroid gland is the most common site of metastasis in the head and neck region, followed by cervical lymphatics, mandible, sinonasal tract, and facial skin^[9].

The clinical behavior of renal cell carcinoma is remarkably unpredictable, characterized by variable growth rates, timing of metastasis, and patterns of spread^[8-9]. Some cases of renal cell carcinoma reported to regress spontaneously, while others show metastasis years after curative nephrectomy, highlighting the need for long-term follow-up^[1].

Several mechanisms have been proposed to explain the metastasis of renal cell carcinoma to the head and neck, including tumor embolization via Batson's plexus of extensive anastomoses between the avascular vertebral and epidural venous system, hematogenous spread through the lungs, and lymphatic spread through the thoracic duct and retrograde flow^[1]. Surgeons must exercise caution due to the tumor's vascularity, as epistaxis is a common symptom, occurring in 70% of patients with sinonasal tract metastasis^[12]. Diagnostic challenges arise from the diverse histological appearances of renal cell carcinoma, including papillary, solid, and spindle cell variants with clear or granular cytoplasm^[13], hence to diagnose from frozen section is extremely difficult^[13]. The complex nature of renal cell carcinoma necessitates a multidisciplinary approach, incorporating surgery, radiotherapy, and careful monitoring to optimize patient outcomes. Further research into the molecular mechanisms driving this tumor's behavior may uncover new therapeutic targets and improve prognosis.

Despite these challenges, accurate diagnosis is crucial, as renal cell carcinoma is traditionally considered radioresistant^[14-16]. However, recent studies have demonstrated the effectiveness of radiotherapy in treating metastatic disease, with palliative responses reported in 86% of patients^[17]. When encountering a clear cell metastatic lesion in the head and neck, clinicians must consider the possibility of a primary kidney tumor, as renal cell carcinoma metastasis to the neck is not uncommon.

IV. Conclusion

Early detection and appropriate management can significantly impact patient outcomes hence it is essential to include Renal cell carcinoma (RCC) in the differential diagnosis for any progressively growing lesion in the head and neck, particularly in older adults^[1].

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