

Case Report

Submandibular Lump: A Rare Presentation of Metastatic Renal Cell Carcinoma

Anton Wong^{1*}, Ming-Te Lee², Yih Chyn Phan¹, Alex Yuen Hua Loh³, Mehmood Akhtar¹

¹Hereford County Hospital, Stonebow Road, Hereford, Herefordshire, UK

²Bradford Royal Infirmary, Duckworth Lane, Bradford, West Yorkshire, UK

³Royal Stoke University Hospital, Newcastle Road, Stoke-on-Trent, Staffordshire, UK

***Corresponding author:** Anton Wong, Department of Urology, Hereford County Hospital, Stonebow Road, Hereford, Herefordshire, HR1 2ER, United Kingdom

Citation: Wong A, Lee MT, Phan YC, Loh AYH, Akhtar M. (2020) Submandibular Lump: A Rare Presentation of Metastatic Renal Cell Carcinoma. Ann Case Report 5: 522. DOI: 10.29011/2574-7754.100522

Received Date: 29 November 2020; **Accepted Date:** 04 December 2020; **Published Date:** 10 December 2020

Abstract

We present an extremely rare case of metastatic renal cell carcinoma presenting as a neck lump. A 60 year old gentleman presented to the otorhinolaryngology team with 2 weeks history of swelling around his right submandibular gland. He has a past medical history of malignant melanoma, renal cell carcinoma for which he had a left radical nephrectomy, and a metastatic nodule on his right adrenal gland for which he had an adrenalectomy. A subsequent excision biopsy of the lymph node near his right mandibular gland revealed a metastatic Grade 3 renal clear cell carcinoma. The patient had a metastasectomy of the submandibular lymph node and subsequently started on targeted therapy with Sunitinib by the oncology team. Metastasis of renal cell carcinoma to the lymph nodes in the neck is rare.

Introduction

In the UK, renal cancer is the seventh most common cancer. It is the fifth most common cancer in males and the tenth most common cancer in females in the UK [1]. Classically, renal carcinoma presents with a triad of palpable mass, loin pain and haematuria. Owing to the advancement of medical imaging and easy access to medical imaging such as CT and ultrasound scans, renal tumours are often picked up incidentally.

There are several types of renal cancer. The most common type is renal cell carcinoma which include clear cell, papillary, chromophobe and Bellini duct (collecting duct) tumors. Other renal cancer includes Wilm's tumour and sarcoma. Common sites for renal cell carcinoma metastasis are lung, bones, liver, adrenal gland, contralateral kidney, retroperitoneum, and brain [2]. Although uncommon, there have been reported cases of renal cell carcinoma to have metastasise to the head and neck [3]. We present a rare case of renal cell carcinoma metastasis to a lymph node in the neck 1.5 years after his radical nephrectomy and adrenalectomy.

Case Presentation

A 60 year old gentleman presented to the otorhinolaryngology team with 2 weeks history of swelling around his right submandibular gland. His past medical history included a 5cm left renal tumour and 3.5cm metastatic right adrenal nodule that was picked up incidentally 2 years ago. The patient subsequently had a radical left nephrectomy followed by a right adrenalectomy; and the histology showed renal clear cell carcinoma with clear margins. His surveillance CT scan did not pick up any recurrence.

Following his first consultation with the otorhinolaryngology team, an urgent ultrasound scan with fine needle aspiration cytology was arranged. The ultrasound scan revealed a suspicious solitary enlarged lymph nodal mass measuring 1.6 cm deep to the right submandibular gland (Figure 1). A fine needle aspiration was attempted by a radiologist. However, only two passes could be made as the patient developed haemorrhage around the submandibular gland. The procedure was hence abandoned. The fine needle aspirate samples were sent for cytology evaluation.

Unfortunately, the fine needle aspirate samples only contained peripheral blood and was not diagnostic.

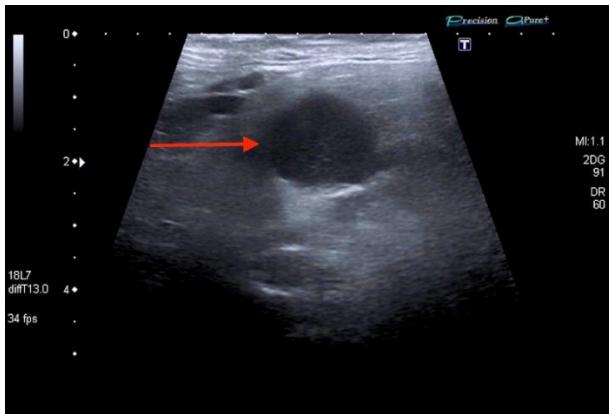


Figure 1: Ultrasound showing a suspicious solitary enlarged lymph nodal mass measuring 1.6 cm deep to the right submandibular gland.

He underwent a subsequent excision biopsy of the suspicious lymph node and the histology revealed metastatic Grade 3 clear cell carcinoma which was consistent with previous left kidney and right adrenal histology. Following metastasectomy of the submandibular lymph node, the patient was referred to the oncology team and they have started him on Sunitinib 50 mg once daily to be given 4 weeks on and 2 weeks off.

Discussion/Conclusion

Among all the urological malignancies, renal carcinoma is the most common with renal cell carcinomas accounting for more than 90% of all of renal cancers. Risk factors for renal cell carcinoma include smoking, obesity, hypertension, chronic kidney disease, and dialysis. Genetic causes for renal cell carcinoma include Von-Hippel Lindau disease, Birt-Hogg-Dube syndrome, hereditary leiomyomatosis renal cell cancer, and hereditary papillary renal carcinoma [4].

Renal cell carcinoma can metastasise through lymphatic spread, haematogenous spread, transcoelomic spread, and direct invasion. Furthermore, they can return at distant sites even after many disease-free years. In the case report by Gottlieb and Roland, one of their patients had a metastatic mass on his neck 20 years after his radical nephrectomy [5]; while Parada et al. have reported a metastatic bone lesion in the pelvis 33 years after the patient had a radical nephrectomy [6].

Metastasis of renal cell carcinoma to the head and neck is rare. It is reported 15% of patients with renal cell carcinoma have extracranial head and neck metastases [7]. In their case report, Bouadel et al. described a patient with chromophobe renal cell carcinoma metastasising to the left lateral jugular lymph nodes [8]. Ozkiris et al. also reported metastasis of chromophobe type RCC

to different lymph node groups in the left cervical region [9]. In both cases, the time between primary nephrectomy and diagnosis of cervical lymph node metastasis is 5 years or more, which is considerably longer than the interval seen in our patient.

There is no proven theory on how renal cell carcinoma spreads to the head and neck region. One theory suggests that tumour emboli can bypass the pulmonary capillary filtration mechanism through Baston's plexus of extensive anastomoses between the aavalvular vertebral and epidural venous system [10]. Once the tumour emboli reach the head and neck region, they can easily spread to different sites such as lymph nodes, sinuses, skin, salivary glands and thyroid through the extensive anastomoses between cranial vessels. Another theory is that renal cell carcinoma can spread to the head and neck region haematologically through the lungs by leaving micrometastases in the lungs which are not visible on any modern medical imaging [5].

In a study conducted by Lieder et al., out of the 172 patients who had distant metastases, 22 of them have metastases in their neck [11]. In light of this, they have recommended that the neck should be included as part of the patients' staging CT. However, according to European Association of Urology (EAU) guidelines on renal cell cancer, only a CT chest and abdomen scan for staging is recommended [12].

Metastasectomy remains the mainstream treatment for renal cell carcinoma metastases as it has shown to improve patients' outcomes [13]. A systematic review by Liou et al. have shown that complete metastasectomy in the head and neck region for renal cell carcinoma patients was associated with 4-year longer median overall survival than incomplete metastasectomy or no metastasectomy [14]. As our patient was fit, he underwent a complete metastasectomy by the otorhinolaryngology team.

With the use of modern chemotherapy drugs such as vascular endothelial growth factor (VEGF) inhibitors, tyrosine kinase inhibitors, and mechanistic target of rapamycin (mTOR) inhibitors to treat renal cell carcinoma, it is no surprise that renal cell carcinoma patients are now living longer than they used. Therefore, there is now more time for the primary renal cell carcinoma to metastasise to other sites in the body even after many disease-free years.

Renal cell carcinoma metastasis to the cervical lymph nodes is still relatively scarce and our case adds on to the existing literature in various ways. Firstly, it highlights that we need to be vigilant about cervical lymph nodes as potential metastatic sites for primary renal cell carcinoma. Given the unpredictable natural history of renal cell carcinoma, clinicians should always have low threshold for investigating for potential supraclavicular renal cell carcinoma metastases. Besides, it is possible to have further lymph node metastasis even after the initial metastasectomy, as shown in our patient.

Conflicts of Interest

The authors have no conflicts of interest to declare.

References

1. Cancer Research UK. Kidney cancer incidence statistics.
2. Griffin N, Gore ME, Sahaib SA (2007) Imaging in metastatic renal cell carcinoma. *AJR Am J Roentgenol.* 189: 360-370.
3. Liu Y, Vargo RJ, Bilodeau EA (2018) Analytic survey of 57 cases of oral metastases. *J Oral Pathol Med.* 47: 275-280.
4. Low G, Huang G, Fu W, Moloo Z, Grgis S (2016) Review of renal cell carcinoma and its common subtypes in radiology. *World J Radiol.* 8: 484-500.
5. Gottlieb MD, Roland JT (1998) Paradoxical spread of renal cell carcinoma to the head and neck. *Laryngoscope.* 108: 1301-1305.
6. Parada SA, Franklin JM, Uribe PS, Manoso MW (2009) Renal cell carcinoma metastases to bone after a 33-year remission. *Orthopedics.* 32: 446.
7. Boles R, Cerny J (1971) Head and neck metastases from renal carcinomas. *Mich Med.* 70: 616-618.
8. Bouadel N, El Ayoubi F, Bennani-Baiti AA, Benbouzid MA, Essakalli L, Kzadri M, et al. (2013) Cervical lymph node metastasis in chromophobe renal cell carcinoma: a case report and review of the literature. *Case Rep Otolaryngol.* 2013: 814175.
9. Ozkiriş M, Kubilay U, Sezen OS (2011) Cervical lymph node metastasis in renal cell carcinoma. *J Oral Maxillofac Pathol.* 15: 211-213.
10. Nahum AM, Bailey BJ (1963) Malignant tumors metastatic to the paranasal sinuses: case report and review of the literature. *Laryngoscope.* 73: 942-953.
11. Lieder A, Guenzel T, Lebentrau S, Schneider C, Franzen A (2017) Diagnostic relevance of metastatic renal cell carcinoma in the head and neck: An evaluation of 22 cases in 671 patients. *Int Braz J Urol.* 43: 202-208.
12. European Association of Urology. *Renal Cell Carcinoma.*
13. Kwak C, Park YH, Jeong CW, Lee SE, Ku JH (2007) Metastasectomy without systemic therapy in metastatic renal cell carcinoma: comparison with conservative treatment. *Urol Int.* 79: 145-151.
14. Liou T-N, Scott-Wittenborn NR, Kallogjeri D, Lieu JE, Pipkorn P (2018) Survival of renal cell carcinoma metastatic to nonthyroid head and neck region: A systematic review: Survival of RCC Met to H&N. *The Laryngoscope.* 128: 889-895.