

## CASE REPORT

## Cervical lymph node metastasis in renal cell carcinoma

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**ABSTRACT**

Renal cell carcinoma represents 3% of all adult malignant tumors. It occurs more frequently in the fifth and sixth decade of life and in a male–female ratio of 1.5 : 1. Among all the primary tumors that arise below the level of the clavicle, renal cell carcinoma is the third most common neoplasm that metastasizes to the head and neck region, but rarely has it been described as the presenting symptom of this tumor. In 7.5% of the patients with renal cell carcinoma, head and neck metastasis is the presenting complaint. However, only 1% of the patients with renal cell carcinoma have metastases confined only to the head and neck; and a solitary cervical metastatic mass, as in the case of our patient, is rare. It seems that head and neck metastasis of renal cell carcinoma should preferentially be treated with surgical excision because of the associated morbidity and quality-of-life issues. Renal cell carcinoma should be considered in the differential diagnosis of any growing lesion in the head and neck.

**Key words:** Lymph node, metastase, renal cell carcinoma

### CASE PRESENTATION

A 56-year-old female was admitted to our clinic with a complaint of multiple masses in her left neck region. The past medical history of the patient included a left nephrectomy for renal cell carcinoma (the pathological analysis revealed clear cell + chromophob cell carcinoma) in 2000, otherwise normal. A physical examination of the patient revealed multiple painless cervical masses at different lymphatic levels in the left cervical region [Figure 1].

Laboratory findings were as follows, hemoglobin:14 gr/dl, hematocrit: 41,1%, erythrocyte count: 5.180.000/mm<sup>3</sup>, leucocyte count: 6.390 / mm<sup>3</sup> (66.4% neutrophils, 23.9% lymphocytes, and 7.2% monocytes), and erythrocyte sedimentation rate 31 mm / 1 hour. Urine analysis was normal. The Brucella agglutination test, and the MONO, VDRL, ANA, ANTI-DNA, ASMA, AMA, ASO, and CRP tests were normal. The thyroid function tests were normal. The scintigraphic bone scan imaging was negative for metastatic lesions. Thyroid ultrasonographic examination and high resolution Pulmonary imaging were also found to

be negative for metastasis. An abdominal ultrasonographic examination showed a nephrectomy scar on the left side, but was otherwise normal. Ultrasonographic examination of the neck detected five lymphadenopathies of different sizes with the greatest dimension of 3 × 3 cm. The magnetic resonance imaging (MRI) scan also confirmed the ultrasonographic findings, and post contrast scanning showed heterogen and nodular contrast. Pathological examination of the fine needle aspiration biopsy (FNAB) of the lymphadenopathy that was greatest in dimension showed renal cell carcinoma (RCC), clear cell type.

In December 2006, left functional neck dissection was performed. Totally 23 lymphadenopathies were counted in the surgical specimen. The greatest lymph-node metastasis appeared as a thick, irregularly walled cystic mass, with a minimally enhancing or dense surrounding reaction that effaced the adjacent tissue planes [Figure 2]. In the pathological examination of the dissected lymphadenopathies, it was found that a third of them in the jugulodigastric region were metastatic renal cell carcinoma [Figure 3]. Postoperative radiotherapy to the neck region was performed. In the second and fourth months after the second operation, she has no evidence of recurrence in the neck region.

### DISCUSSION

Hypernephroma represents 3% of all adult malignancies.<sup>[1]</sup> Distant metastasis commonly occurs.<sup>[2]</sup> The more frequent sites are the lungs (76%), the bones (42%), and the liver (41%).<sup>[3]</sup> When the incidence of metastatic renal carcinoma

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to the head and neck region was reviewed, it was found that this type of tumor had been responsible for 14.3% of the metastases.<sup>[4]</sup>

For eight percent of the patients, the presenting clinical manifestation of the tumor is disease in the head and neck.<sup>[5,6]</sup> Only 1% of the patients with hypernephroma have no other obvious metastasis except than in the head and neck.<sup>[5]</sup> The clinical behavior of renal cell carcinoma is often unpredictable in its rate of growth, in the timing of metastasis, and in the variability of patterns of metastatic spread.<sup>[7,8]</sup> Some hypernephromas have been reported to regress spontaneously, whereas, others demonstrate metastasis many years after a supposedly curative nephrectomy. These metastases are usually vascular and may either clinically precede the diagnosis of the renal primary tumor or occur as long as 15 to 20 years after an apparently successful surgical excision of the primary tumor.

The thyroid gland is the most common site of metastasis for this tumor in the head and neck region.<sup>[9]</sup> The metastases can also occur in the cervical lymphatics, the mandible, the sinonasal tract, and the skin of the face and scalp.<sup>[8]</sup> It has been postulated that some hypernephromas have the ability to bypass the pulmonary capillary filtration mechanism and metastasize directly to the head and neck region. One of the possible explanations for this phenomenon is tumor embolization by way of Batson's plexus of extensive anastomoses between the avascular vertebral and epidural venous systems. Once the tumor emboli reach the head and neck region, they can anastomose with the great veins of the head and spread to the nose and sinuses, cutaneous sites, and thyroid gland.<sup>[5]</sup> It has also been postulated that the metastasis of renal cell carcinoma could also spread to the head and neck region through a normal hematogenous flow through the lungs, leaving microscopic seeding of the lung parenchyma, which would not be visible on a routine chest radiograph.<sup>[10]</sup>

Another theory postulates a lymphatic spread of metastatic embolus flowing to the regional lymphatics into the thoracic duct and arriving in the head and neck region by means of a retrograde flow through the intercostal, mediastinal or supraclavicular lymph vessels to the subglottis and above.<sup>[10]</sup>

Surgeons should be aware of the vascularity of these tumors when performing procedures. The vascular stroma of these metastases accounts for the fact that the most common symptom of these sinonasal lesions is epistaxis (70%).<sup>[11]</sup> However, the vascular nature of these metastases is not always clinically evident, as in our case.

Renal cell carcinoma is difficult to diagnose from a frozen section because of the many clear variants of carcinoma found in the head and neck. This is nowhere more evident than in the parotid gland, where confusion with oncocytomas, acinous



Figure 1: Preoperative figure of the patient (Lateral)

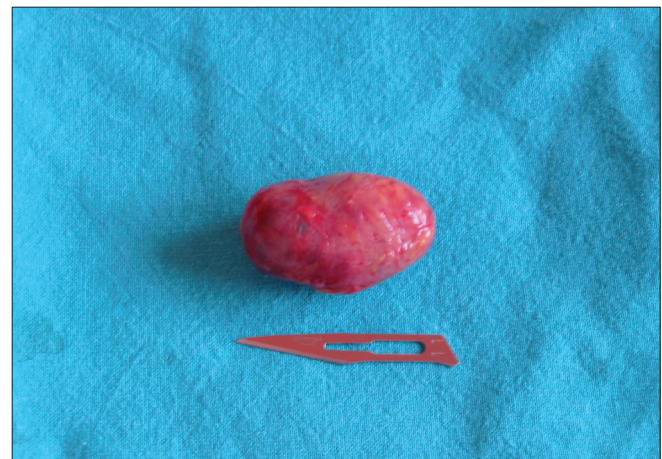


Figure 2: Lymph-node of the patient

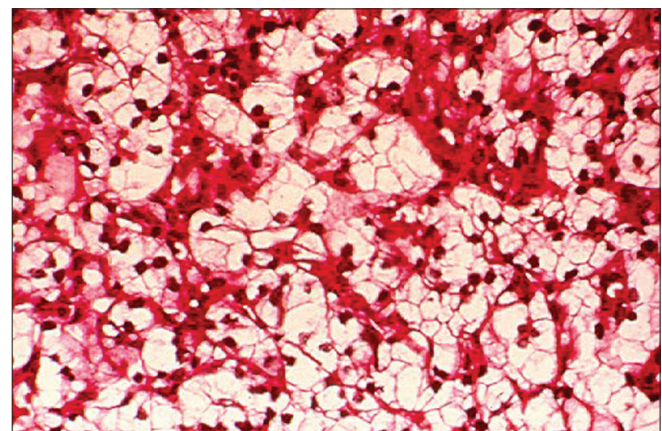


Figure 3: The histologic appearance of the metastatic lymph-node

cell carcinomas, and clear-cell neoplasms has been reported.<sup>[12]</sup>

The histological appearance of the renal cell carcinoma shows differences; some tumors are seen in a papillary pattern, others are in solid nests, and some show spindle cell variants and the cells may have a clear or granular cytoplasm. However, the histological appearance of renal cell carcinoma has no value in determining the prognosis.<sup>[12]</sup>

In our case; the pathological examination of three of the five lymphadenopathies revealed renal cell carcinoma (hypernephroma), clear cell type. The pathological slides of the primary tumor, removed in 2000, were reviewed, and it was found that both the primary tumor and the neck metastases had the same origin.

Renal cell carcinoma is traditionally described as a radioresistant tumor.<sup>[13-15]</sup> This seems to be the case in the treatment of the primary tumor, where the surrounding normal tissue tolerance limits the effectiveness of radiotherapy; however, a number of studies have reported its effectiveness in the treatment of metastatic disease. Di biase *et al.* reported a palliative response in 86% of the patients treated (49% complete response).<sup>[16]</sup>

When a clear cell metastatic lesion is found in the head and neck region, a primary tumor of the kidney must be suspected, because metastasis of the renal cell carcinomas to the neck is not infrequent.

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