CASE REPORT

Unusual head metastasis of kidney cancer

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SUMMARY

Renal cell carcinoma (RCC) metastasis can involve any organ. Head metastasis are rare, namely tongue, scalp and nose and only a few cases have been described. The authors describe three cases of unusual presentation of head metastasis of RCC. In case 1, a 50-year-old man with RCC underwent left nephrectomy, and presented 16 months later with nasal metastasis. In case 2, a 64-year-old woman with RCC operated 12 years ago, relapsed at multiple sites including scalp, which was treated surgically. In case 3, a 47-year-old man with RCC developed metastasis in multiple organs including a mass on the tongue that was operated and was compatible with primary tumour metastasis. These cases show the importance of correct diagnosis of rare presentations and local treatment of metastasis of RCC.

BACKGROUND

Renal cell carcinoma (RCC) can spread by direct extension or by lymphatic or venous routes. The surrounding structures such as liver, colon, adrenal gland and pancreas may become involved.¹

At initial examination, 25–30% of patients with RCC have overt metastases. The most common sites are lung parenchyma (50–60%), bone (30–40%), liver (30–40%) and brain (5%). The soft tissues can also be a site of involvement; the skin and the central nervous system are rarer sites of metastasis.¹

Notwithstanding, RCC can have metastases at unusual sites. Metastases from RCC can involve any organ, including the pancreas, adrenal gland, thyroid, skeletal muscle, skin and underlying soft tissue.¹ Head metastasis of renal cancer are rare, namely tongue, scalp and nose and only a few cases have been described in the literature to date.^{2–8}

The authors describe three cases of unusual head metastasis of RCC.

By describing these, the authors evidence the importance of correct diagnosis of rare presentations and local treatment of metastasis of RCC whenever possible.⁹

CASE PRESENTATION

The clinical records of the three patients with unusual head metastasis were reviewed.

Case 1

A 50-year-old man underwent left nephrectomy in July 2010 for a 4.3 cm, well differentiated, clear cell carcinoma, limited to the kidney, staged by TNM classification as stage I (pT1bN0M0). The patient remained under surveillance with no evidence of local or distance recurrence until November 2011, when he had nasal pain and obstruction. He underwent an otorhinolaryngology (ORL) examination,

which revealed a nasal lesion. The cervical CT scan showed a 20 mm mass on the left nasal vestibule (figures 1 and 2).

The nasal lesion was excised. Histology revealed clear cell carcinoma, with immunohistochemistry (IHC) positive for vimentin and CD10 and negative for CK7, CK20, p63, smooth muscle actin and S100, thus compatible for metastasis from primary RCC.

He was referred to the oncology department and underwent several restaging examinations. The cervical CT scan showed only alterations secondary to surgery. The ORL observation and the chest, abdominal and pelvic CT scan did not reveal significant alterations. The bone scintigraphy revealed a lytic lesion on the left knee and a CT scan confirmed a lesion on the right femoral condyle. A biopsy of the right femoral condyle was performed and revealed metastasis of a clear cell tumour with positivity of IHC for vimentin, EMA, CK8/18 and CD10 compatible with renal origin. The patient was submitted to surgery and the pathological examination confirmed metastasis of RCC. He underwent palliative radiotherapy later.

Case 2

A 64-year-old woman with a history of a left acromion plasmacytoma diagnosed in 1996 was treated with radiotherapy with complete response. In 1999, she underwent a right radical nephrectomy

Figure 1 Left nasal vestibular metastasis of renal cell carcinoma (case 1).

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Figure 2 Left nasal vestibular metastasis of renal cell carcinoma (case 1).

for a clear cell carcinoma staged as pT2pN0cM0. She was referred to the oncology department and remained under surveillance.

In November 2005, she was submitted to a parieto-occipital craniotomy due to the appearance of two left intraventricular masses (figures 3 and 4). The pathological examination revealed RCC metastasis. The chest, abdominal and pelvic CT scan did not show any evidence of tumour in other locations and she started treatment with hydantine. In April 2006, she underwent stereotactic radiosurgery for two other lesions (left thalamus and right cerebellum lesions) with 25 and 22.5 Gy, respectively.

In May 2007, she underwent a left proximal femoral resection and the pathological examination showed RCC metastasis.

In August 2008, the CT scan revealed a caudal pancreatic lesion that was biopsied and was compatible with an RCC metastasis. She started treatment with sunitinib 50 mg/day 4 weeks on/2 weeks off. She maintained treatment with sunitinib

Figure 3 Intraventricular metastasis of renal cell carcinoma (case 2).

Figure 4 Intraventricular metastasis of renal cell carcinoma (case 2).

with stable disease until March 2011, when the chest, abdominal and pelvic CT scan showed disease progression with appearance of mediastinal and retroperitoneal adenopathies and hepatic lesions. She started second-line sorafenib 400 mg twice daily, later reduced to 400 mg/day because of cutaneous toxicity. In September 2011, because of disease progression with an increase of pancreatic lesion and appearance of new hepatic lesions, she started third-line systemic therapy with everolimus 10 mg/day. The patient had stable disease until September 2012, when she noticed the appearance of a scalp cutaneous tumour that was surgically removed and the pathological examination was consistent with metastasis of renal primary (figures 5–7).

Case 3

A 47-year-old man was submitted to a left nephrectomy in August 2009 for RCC in Brazil. The chest, abdominal and pelvic CT scan after surgery showed multiple pulmonary metastasis and para-aortic lymphadenopathies. In October 2009, after a first episode of seizures, a brain CT scan was performed which showed brain metastasis. Sunitinib was then prescribed but he never started treatment due to economic reasons.

Figure 5 Scalp metastasis of renal cell carcinoma (case 2).

Figure 6 Cutaneous metastatic renal cell carcinoma. Microscopic aspects of a clear cell carcinoma with extravasation of blood suggestive of renal cell origin (H&E; case 2).

In January 2010, he returned to Portugal and was admitted in the hospital for a new episode of seizures. The brain CT scan showed a single left internal subcortical temporal lesion. He underwent radiosurgery and was referred to the oncology department.

The clinical examination showed a 2 cm swelling on the middle of the superior face of the tongue with elastic consistency (figures 8 and 9) and a palpable mass in the right hypochondrium. The chest, abdominal and pelvic CT scan showed metastasis in the lungs, liver, muscles (abdominal wall, internal to scapula and calf muscles), bone (right costal arch) as well as multiple mediastinal lymphadenopathies and two solid nodular lesions around 2 cm in the left renal bed. The brain and head CT scan showed persistence of the left internal temporal lesion, with less perilesional oedema and the presence of a lytic lesion in the occipital calvaria suggestive of metastasis. The bone scintigraphy evidenced bone metastasis at the right ilium and ribs. A liver biopsy was performed and revealed metastasis of clear RCC.

Owing to three poor prognosis features, according to the current guidelines, he started on temsirolimus in combination with zoledronic acid.

After 12 cycles of temsirolimus, the CT imaging showed progression of disease on the liver, lungs, lymph nodes, muscle and bones, appearance of bilateral adrenal metastasis and local recurrence. He was treated with second-line systemic therapy with sunitinib. During treatment, he had acute lithiasic pancreatitis,

Figure 7 Cutaneous metastatic renal cell carcinoma. Tumour cells expressing CD-10 (Immunohistochemistry for CD-10) (case 2).

Figure 8 Tongue metastasis of renal cell cancer (case 3).

which resolved after medical therapy. The mass on the tongue grew with time and due to difficulty in swallowing, he was operated. The pathological examination revealed metastasis of RCC.

Again due to progressive disease, he was initiated on third-line treatment with sorafenib and died 3 months later.

DISCUSSION

Although it is well known that RCC often presents itself with distant metastasis in unusual places, metastasis to the head are much less frequent, namely to the nasal vestibule, tongue and scalp.

In the first case, besides the unusual presentation of the metastasis on the nasal vestibule, it appeared 16 months after the diagnosis. This is rare, as this patient had a good chance of cure with surgery due to being a well-differentiated tumour and

Figure 9 Tongue metastasis of renal cell cancer (case 3).

TNM classification stage I (pT1bN0M0). The second case illustrates long lifetime survival of a patient with a renal tumour, which is the usual evolution of these tumours. Nevertheless, it is not usual to have isolated cutaneous lesions late in the course of the disease.

As for the last case, with its rapid natural history of an aggressive renal tumour, the tongue lesion was the more indolent, the rarest, but still the most inconvenient for the patient because of the pain caused and the difficulty in speaking and eating.

Learning points

- ▶ Although renal cell carcinoma (RCC) metastasis can involve any organ, head metastases are rare mainly in tongue, cerebral ventricle, nose and scalp.
- ▶ It is important to recognise and diagnose correctly the rare presentations of RCC metastasis.
- ▶ Whenever it is possible, local treatment should be provided as it can change the prognosis in the course of the disease.

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