CASE STUDY

A Rare Case of Renal Cell Carcinoma Metastasis in the Parotid Gland Eleven Years After the Initial Diagnosis

Raro caso de metástasis parotidea por carcinoma renal de células claras 11 años después del diagnóstico inicial

Samir Aboul Hosn-Centenero, Manel Coll-Anglada,∗ Alba Pradillos-Garcés, David Salinas-Duffo

Departamento de Cirugía Oral y Maxilofacial, Hospital Plató, Barcelona, Spain

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A 63 year old man presented at the Maxillofacial Surgery in October 2012 with a tumour of 2 months’ evolution in the left preauricular region. On physical examination he had a homogeneous tumour of approximately 2 cm in diameter which was hard, adhering to the deeper tissue layers, and painful to the touch. There were no skin alterations near the tumour or functional alterations of the seventh cranial nerve. No swollen lymph nodes were found on palpation.

Of note in the patient’s medical history were a left nephrectomy in 1999 due to clear cell renal cell carcinoma (CCRCC) (pT3, N0, G2) and a prostate adenocarcinoma diagnosed and treated with radiotherapy in 2008. The patient had been monitored with regular medical controls and to date had shown no sign of recurrence.

The following additional tests were performed:

- Fine-needle aspiration (FNA) of the left preauricular lesion which showed the presence of possible clear cell renal cell carcinoma metastasis in the left parotid gland.

- Nuclear magnetic resonance (NMR) which revealed a polylobbled cystic tumour in the anterior and superficial left parotid gland (Fig. 1).

The patient was referred to the Oncology Committee in the hospital where 2 further tests were performed to complete the study:

- Computerised tomography (CT) imaging of the thorax and abdomen which did not suggest the presence of distant disease.

- Positron emission tomography (PET), with observation of hypermetabolic activity in the soft tissues located in the left preauricular area.

Finally, in November 2010 the patient underwent surgery under general anaesthesia. A complete left parotidectomy was performed, sacrificing the ophthalmic and buccal branch of the facial nerve as they were adhering to the tumour.

Histopathological results of the surgical specimen confirmed the presence of a tumour in the left parotid gland, 2.6 × 1.7 cm in diameter, corresponding to CCRCC metastasis (Fig. 2) with focal involvement of the posterior margin which had spread to the dermis and periglandular tissues. We therefore decided to administer 50 Gy of adjuvant radiotherapy.

There were no post-operative complications and the patient was discharged from hospital 72h after surgery.


∗ Corresponding author.
E-mail address: mcollang@yahoo.es (M. Coll-Anglada).

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Figure 1  Axial view of the magnetic resonance (MR) which shows the left parotid gland tumour.

No signs of clinical or radiological recurrence have been reported to date during subsequent check-ups.

Discussion

Clear cell tumours in the maxillofacial area may correspond to salivary gland neoplasms, odontogenic tumours, or in rare cases, to localised distant tumour metastasis, including clear cell renal cell carcinoma (CCRCC). The CCRCC may metastasise in practically any organ, the following being the most frequently affected: lung, bone, liver, adrenal glands and brain. In rare cases it may metastasise in the parotid glands and may, on some occasions, even be the first symptom of the disease.

Figure 2  Image characteristic of clear cell renal cell carcinoma, showing neoplastic cells with clear cytoplasms around the capillary nerves (H& E 40×).
Parotid metastases usually originate in head and neck skin cancer, such as squamous melanoma or carcinoma which represent 45% and 37% of gland metastases respectively. Melanoma usually affects the peripheral lymph nodes (70%), whilst squamous carcinoma more frequently metastasises in the intraglandular lymph nodes (47%).

CCRCC metastases in the parotid gland are extremely rare.\(^3,6\)

The lymphatic spread through the thoracic duct could be connected to the high incidence of lymph node disease in the head and neck.\(^1\) An alternative theory, however, could be that the tumour may spread through the paraspinal Batson’s venous plexus.\(^7\) In fact CCRCC is a haemodynamic tumour associated with multiple arteriovenous fistulas. This type of tumour therefore presents a high level of haematogenous spread.\(^3,5\)

The most frequent symptom is a preauricular tumour and for some patients this may be accompanied by pain or hypersensitivity in the area.\(^4\)

The treatment requires complete resection of the gland with preservation of the facial nerve provided it is not adhering to the tumour. According to published articles, only 13% of patients survive for 5 years after the resection of a solitary metastasis.\(^8\)

The time lapse between CCRCC diagnosis and metastasis in the parotid gland may vary from months to years.\(^2,3,5\)

A case has been reported in literature with a time interval of 10 years\(^6\) (from nephrectomy to the appearance of metastasis). In our case, this time interval is 11 years, which confirms the possibility of long term metastasis.

**Conclusion**

In cases of patients with a parotid tumour and a previous history of CCRCC it is important to include CCRCC parotid metastasis in the differential diagnosis, even if the primary tumour has been treated some years previously. The case presented confirms the possibility that this rare event may present even 11 years after nephrectomy has been performed.

**Conflict of Interests**

The authors have no conflict of interest to declare.

**References**