Case report

Spinal cord metastasis of squamous cell carcinoma of the maxillary sinus

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A R T I C L E   I N F O

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A B S T R A C T

Introduction: Squamous cell carcinomas arising from the maxillary sinus have been rarely reported. The authors report the original case of a patient with squamous cell carcinoma of this site with an unusual clinical course.

Case report: A woman presented with squamous cell carcinoma of the maxillary sinus that was only diagnosed 6 months after onset of symptoms. At the time of diagnosis, the tumour had spread to the brain via the maxillary nerve and to the skin. The patient was treated by chemotherapy and radiotherapy. Four months after stopping treatment, the patient presented Brown-Sequard syndrome, for which imaging examinations were performed, demonstrating a spinal cord metastasis from her squamous cell carcinoma.

Discussion: This case of squamous cell carcinoma presents several unusual features: the maxillary sinus is a rare site of squamous cell carcinoma and progression and distant metastasis have been only exceptionally described in the literature.

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1. Introduction

Squamous cell carcinomas of the maxillary sinus are rare. We report the original case of a woman with squamous cell carcinoma of the maxillary sinus, in whom the diagnosis was delayed by six months due to the initially non-specific clinical features. The diagnosis was finally established in a context of skin extension.

2. Case report

A 69-year-old woman, living in Saint-Pierre-et-Miquelon, consulted her general practitioner for right hemifacial pain. The proposed diagnosis was that of sinusitis for which antibiotic therapy was instituted with no clinical improvement. In the context of worsening pain, CT scan of the sinuses was performed and interpreted as normal by the radiologist. This CT scan was performed in Saint-Pierre-et-Miquelon and was not available for review. Six months later, following the appearance of a granulating skin lesion of the right nostril (Fig. 1a), another CT scan was performed, revealing osteolysis of the anterior wall of the maxillary sinus. The patient was then referred to our outpatients department. In addition to the skin lesion which had doubled in size in two weeks (Fig. 1b), we also observed right ophthalmic nerve paralysis and right maxillary nerve anaesthesia. Skin biopsy of the right nostril demonstrated moderately well differentiated invasive squamous cell carcinoma. Subsequent imaging demonstrated, in addition to osteolysis of the maxillary sinus, invasion of the skull base (Fig. 2) due to perineural dissemination via the maxillary nerve through the oval foramen.

Review of the initial CT revealed thickening of the premaxillary tissues and a small mass located in the anterior wall of the maxillary sinus.

Following multidisciplinary consultation, it was decided to manage this squamous cell carcinoma of the maxillary sinus with skin and intracerebral extension at diagnosis by chemotherapy with 5-fluorouracil and cisplatin and concomitant radiotherapy.

A favourable outcome was observed in response to this treatment, with resolution of the skin nodule and greater than 75% reduction of the tumour on imaging. This case was then reviewed at a multidisciplinary consultation meeting and it was decided that surgical treatment was still not indicated in this patient.

The patient then returned to Saint-Pierre-et-Miquelon with strict follow-up instructions for her general practitioner as well as an appointment for a long-term follow-up visit.

The patient was again referred to us 4 months after completion of her treatment following sudden onset of a motor deficit of the right lower limb. Clinical examination on admission demonstrated an incomplete right Brown-Sequard syndrome, which was documented by spinal cord MRI showing a spinal cord lesion at
the levels of the 1st, 2nd and 3rd thoracic vertebrae, highly suggestive of spinal cord metastasis from the maxillary squamous cell carcinoma (Fig. 3).

The spinal cord lesion was biopsied by the neurosurgical team via open surgery with laminectomies from the 7th cervical vertebra to the 2nd thoracic vertebra, and the diagnosis of spinal cord metastasis from squamous cell carcinoma of the maxillary sinus was confirmed by histological examination.

Histological examination of this biopsy was completed by immunohistochemistry comparing the initial biopsy and the spinal cord biopsy, which confirmed metastasis of a squamous cell carcinoma expressing squamous cell differentiation markers.

The neurosurgical team excluded any possibility of surgical treatment of this spinal cord metastasis and palliative local radiotherapy was proposed to the patient, who died one month after completion of radiotherapy.

3. Discussion

Maxillary sinus tumours are rare, representing only 1% of all human cancers [1].

According to Wang [2], squamous cell carcinomas are the most common form of maxillary sinus tumour, followed by adenoid cystic carcinoma and adenocarcinoma.

This case report illustrates that sometimes non-specific clinical signs must not be neglected. For example, headache or maxillary neuralgia with an atypical course must be investigated by appropriate imaging examinations, which must be interpreted by specialists in the management of head and neck diseases. MRI should probably have been performed earlier in this patient.

The delayed diagnosis in this case can be explained by the initially slow course followed by rapid growth of the tumour. The clinical course of this squamous cell carcinoma was atypical in terms of its chronology and anterior invasion of the skin and posterior invasion via perineural propagation.

The diagnosis of spinal cord metastasis from squamous cell carcinoma of the maxillary sinus only 4 months after completion of concomitant chemoradiotherapy illustrates the highly aggressive nature of this tumour.

Metastases from squamous cell carcinomas of the head and neck usually involve the lungs, mediastinum, liver or bone [3].

Some authors [3–6] have reported rare cases of spinal cord metastases from squamous cell carcinomas of the head and neck, in which the primary sites were the tongue, vocal cords and pyriform sinus, but no case of spinal cord metastasis complicating squamous cell carcinoma of the maxillary sinus has been previously reported.

Squamous cell carcinomas of the nasopharynx are known to be frequently associated with intracranial invasion via direct local
extension, but central nervous system metastases also appear to be very rare, as Ngan reported only five cases of spinal cord metastases complicating nasopharyngeal carcinoma in the English language literature between 1974 and 2001 [7].

In the case reported here, the aggressive nature of the tumour and the presence of intracerebral invasion of the skull base at the time of diagnosis probably explain the rapid onset of this unusual site of metastasis.

The presence of perineural invasion on the initial histological examination should have been considered to be a predictive factor of this progression. However, as the patient was not eligible for primary surgical management, histological examination was only performed on the skin biopsy.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

References