Acta Otorrinolaringol Esp. 2009;**60(6):**428-431

Acta Otorrinolaringológica Española

www.elsevier.es/otorrino

BRIEF REPORT

Metastasis to the sinonasal region☆

Carlos S. Duque-Fisher,[a,*] Roy Casiano,[b] Alejandro Vélez-Hoyos,[c] and Andrés F. Londoño-Bustamente[d]

[a]*Unidad de Cancerología, Hospital Pablo Tobon Uribe, Medellin, Colombia*
[b]*Division Sinus, Voice and Speech Disorders, Department of Otolaryngology, University of Miami Leonard M. Miller School of Medicine, Miami, USA*
[c]*Laboratorio de Patología, Hospital Pablo Tobon Uribe, Medellín, Colombia*
[d]*Departamento de Otorrinolaringología, Universidad CES, Medellín, Colombia*

Received May 6, 2009; accepted June 15, 2009
Available online September 2, 2009

KEYWORDS
Metastasis;
Paranasal sinuses biopsy;
Epistaxis

Abstract
Metastases to the sinonasal region do appear, but are rare. Depending on the anatomical area affected, patients might have symptoms similar to the ones presented with a primary tumour of the area. On many occasions, only a biopsy will give a final diagnosis and provide the treating physician with a pathway to follow.
We present 2 patients with metastatic carcinoma to the sphenoid from the thyroid and pancreas and 2 patients with metastatic renal cell carcinoma to the left nasal vestibule.

PALABRAS CLAVE
Metástasis;
Biopsia de senos paranasales;
Epistaxis

Metástasis a la región nasosinusal

Resumen
Las metástasis a los senos paranasales, aunque se presentan, son raras; dependiendo del área anatómica afectada, los pacientes refirieron sintomatología similar a la que se presenta por tumores primarios propios del sitio. En muchas ocasiones, solamente la biopsia podrá ilustrar al médico tratante y permitirle tomar una conducta acorde con el estado del paciente.
Presentamos 2 pacientes con tumores metastásicos al seno esfenoidal provenientes de la glándula tiroides y del páncreas, y 2 pacientes con carcinoma renal metastásicos a fosa nasal derecha.

☆Work presented as a Poster at the 7th International Congress on Head and Neck in San Francisco, California, USA, July 19-23, 2008

*Corresponding author.
E-mail address: casiduque@hotmail.com (C.S. Duque-Fisher).

0001-6519/$ - see front matter

Introduction

The maxillary sinuses are the paranasal sinuses most commonly affected by metastatic tumours to the sinonasal region, followed in frequency by the ethmoid, frontal, and sphenoid. Unless the treating physician knows in advance the patient's history of previous or current treatment of malignant tumour injuries, it is very likely that the symptoms will be similar to those presented in cases of primary tumour of paranasal sinuses.[1,2]

Any malignant tumour originating in the various organs of the human body could potentially lead to a metastasis that may eventually compromise the paranasal sinuses; however, in their order, kidney, breast, prostate, and lung tumours are described as the most frequent in global medical literature.[3]

Methods

This is a retrospective descriptive study of the database of the Rhinology Service of the Department of Otolaryngology of the Faculty of Medicine at the University of Miami, USA and the Department of Surgery, Head and Neck Section of Hospital Pablo Tobon Uribe in Medellin, Colombia.

Results

We found 4 patients with metastatic lesions to the sinonasal region, described in Table.

Description of patients

Patient No. 1

Sixty-year-old woman who, 7 years earlier, had undergone total thyroidectomy and complementary treatment with radioactive iodine for thyroid follicular carcinoma. At the time of consultation, she was considered free of disease. The patient consulted due to progressive nasal obstruction, which did not improve after treatment with conventional antihistamines. Nasal endoscopic examination was performed, which showed a reddish lesion occupying most of the nasopharynx; the cervical examination showed no abnormalities.

The patient was taken to surgery and resection of the polypoid lesion occupying the right choana and part of the left was carried out under general anaesthesia. Using the microdebrider, the necrotic distal portion of the mass was reduced in size, thus becoming evident that it originated from the tail of the right inferior cornet. This was then resected as a block and the specimen was sent to the pathology service, which confirmed it as a follicular thyroid metastatic carcinoma. The patient was referred to the Head and Neck service for monitoring and control.

Patient No. 2

Seventy-eight-year-old female who had previously been treated for breast carcinoma, and who was, at the time, free of disease after nearly 10 years of monitoring. In addition, she had been treated by chemotherapy and radiotherapy for pancreatic cancer eight months before the consultation. She was first evaluated by the Ophthalmology service due to right diplopia and mild changes in visual acuity. She was referred to the rhinology service after the completion of a simple computed tomography (CT) with contrast of the paranasal sinuses, in which a mass eroding the roof of the sphenoid apex on the right orbit was observed (Figure 1).

With these studies, the patient was taken to surgery and a right spheno-ethmoidal sinusotomy with excision of the lesion observed in the sphenoid roof was performed. The anatomical pathology report revealed that it was a metastasis of pancreatic adenocarcinoma. The patient developed multiple metastases to different organs and died two months after the sphenoid sinus metastasis was documented (Figure 2).

Patient No. 3

Eighty-seven-year-old woman who presented a rapidly growing mass in the left nostril accompanied by epistaxis and nasal obstruction. A paranasal sinuses CT revealed a

Table Metastasis to paranasal sinuses

Patient/ age/ gender	Anatomical site	Symptom	Surgery	Pathology
1-60-F	Right inferior turbinate/ choana	Progressive nasal obstruction	Endoscopic resection	Metastasis of follicular carcinoma of the thyroid
2-78-F	Right sphenoid	Diplopia, paralysis of the 6th cranial pair	Right endoscopic spheno-ethmoidectomy	Metastasis of pancreatic adenocarcinoma
3-87-F	Left nasal fossa	Epistaxis, nasal obstruction	Left middle maxillectomy by lateral rhinotomy	Metastasis of renal carcinoma
4-71-M	Left nasal fossa	Epistaxis, nasal obstruction	Endoscopic resection	Metastasis of renal carcinoma

Figure 1 Patient No. 2. Contrasted CT. Mass eroding the roof of the right sphenoid sinus.

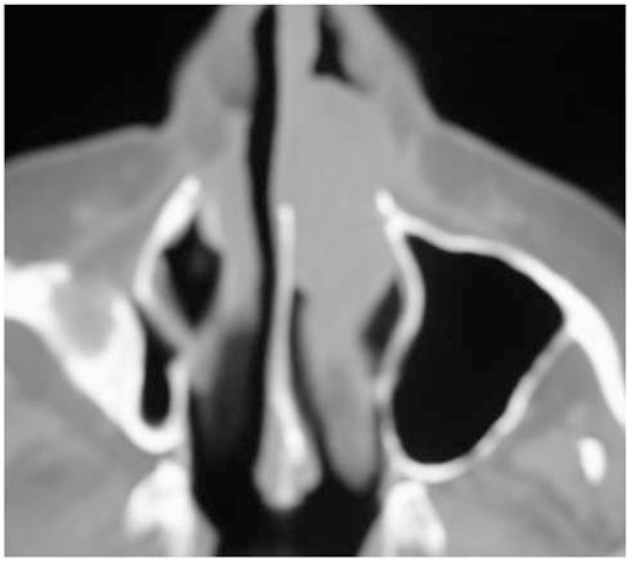

Figure 3 Patient No. 2. Endoscopic view of pancreatic adenocarcinoma to the sphenoid sinus.

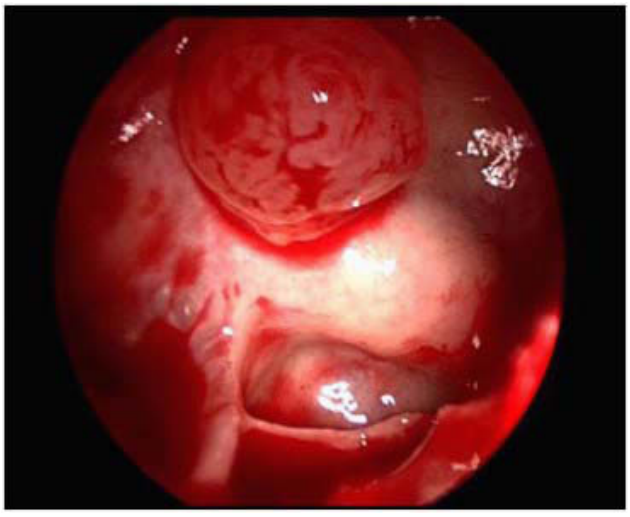

Figure 2 Patient No. 3. CT scan showing metastatic renal lesion occupying the left nostril.

mass in the left nostril, which eroded the inner wall of the maxillary sinus (Figure 3).

The past medical history indicated that she had undergone left nephrectomy and subsequent radiotherapy for renal cell carcinoma eight years earlier. Moreover, 2 years before the nasal symptoms, she was diagnosed and treated by chemotherapy for lung metastases, which were in remission at the time of consultation. She was taken to surgery and, through lateral rhinotomy, she underwent left middle maxillectomy with resection of the 3×3 cm mass attached to the left medial maxillary wall. The pathology service confirmed that it was a metastatic renal cell carcinoma.

Discussion

Metastases to the paranasal sinuses are rare, usually diagnosed in patients with known history of tumoural lesion treated in the past. However, some patients may have metastatic tumours to the paranasal sinuses with unknown primary, manifesting as a primary tumour at this level.

Except for our first patient with metastatic follicular carcinoma, in whom the possibility of a tumour at that level was not considered given the unusual behaviour of well-differentiated thyroid tumours, the cancer history was known in the other patients. In fact, the symptoms of these patients with metastatic lesions were similar to those seen with primary tumours: airway obstruction, nasal bleeding, changes in visual acuity, etc. Imaging studies do not differentiate tumour origin and the only method that ultimately determines the diagnosis is biopsy.[4-7]

Although most published cases reported in the literature correspond to urogenital tract lesions, virtually all tissues are susceptible to the development of malignant tumours with metastatic potential to the sinonasal region.

Two of our patients (3 and 4) had previously been treated for renal cell carcinomas; in addition, one of them had previously suffered lung metastases, which were controlled with chemotherapy before showing nasal manifestations.

Patient No. 2 presented a metastatic lesion of pancreatic adenocarcinoma, which has not been reported in the medical literature. However, there are some reports of thyroid carcinoma metastasis to this anatomical region.[8,9]

Conflict of interests

The authors declare no conflict of interests.

References

1. Prescher A, Brors D. Metastases to the paranasal sinuses: case report and review of the literature. Laryngorhinootologie. 2001;80:583-94.
2. Ilvan S, Akyldiz EU, Calay Z, CelikoyarM, Sahinler I. Endometrial clear cell carcinoma metastatic to the paranasal sinuses: a case report and review of the literature. Gynecol Oncol. 2004;94:232-4.
3. Mickel RA, Zimmerman MC. The sphenoid sinus—a site for metastasis. Otolaryngol Head Neck Surg. 1990;102:709-16.
4. El Mejjad A, Jouhadi H, Fekak F, Rabii R, Bennani S, Benider A, et al. Orbital metastasis of prostatic carcinoma. Prog Urol. 2005; 15:85-8.
5. Ikeuchi T, Asai N, Hori T, Hirao N, Tozawa K, Yamada Y, et al. Renal cell carcinoma detected by metastasis to the fontal sinus: a case report. Hinyokika Kiyo. 1998;44:82-92.
6. Koscielny S. The paranasal sinuses as metastatic site or renal cell carcinoma. Laryngorhinootologie. 1999;78:441-4.
7. Peiter R, Allert M, Knuchel R, Strutz J. Sinugenic metastasis of bilateral renal cell carcinoma (hypernephroma). HNO. 2002;50: 165-8.
8. Altman KW, Mirza N, Philippe L. Metastatic follicular thyroid carcinoma to the paranasal sinuses: a case report and review. J Laryngol Otol. 1997;111:647-51.
9. Argibay Vazquez S, Lancha Hernandez C, Martínez Muniz A. Metastases in the sphenoidal sinus in a patient with papillary thyroid cancer. Clinl Transl Oncol. 2005;7:324-7.