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CASE REPORT

Metastasis of a Poorly Differentiated Endometrioid Carcinoma to the Maxillary Sinus: A Rare Report

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ABSTRACT

In this case report, we present a rare case of an endometrial carcinoma metastasizing to the maxillary sinus. It is the fourth reported case of an uterine malignancy with metastasis to the sinonasal cavities; however, this is the first described in the maxillary sinus. This case demonstrates a rare lesion for a common cancer. Unfortunately, metastatic lesions to the sinonasal cavities are often associated with advanced disease and confer a poor prognosis.

Keywords: Cancer, Endoscopic sinus surgery, Maxillary sinus tumor, Metastatic lesion.

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INTRODUCTION

Metastatic disease to the paranasal sinuses is rare and limited to case reports. We present the fourth published case of a uterine cancer metastasizing to the paranasal sinuses. Specifically, this is the second reported case of an endometrioid carcinoma found within the sinonasal cavity. Although the maxillary sinus is believed to be the most common subsite for metastatic disease, true incidence is not known. Regardless, metastasis to the paranasal sinuses generally reflects advanced disease and is, therefore, associated with a poor prognosis. In the case below, we highlight clinical features that we hope will be useful to the series and expand the differential for sinonasal tumors.

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CASE REPORT

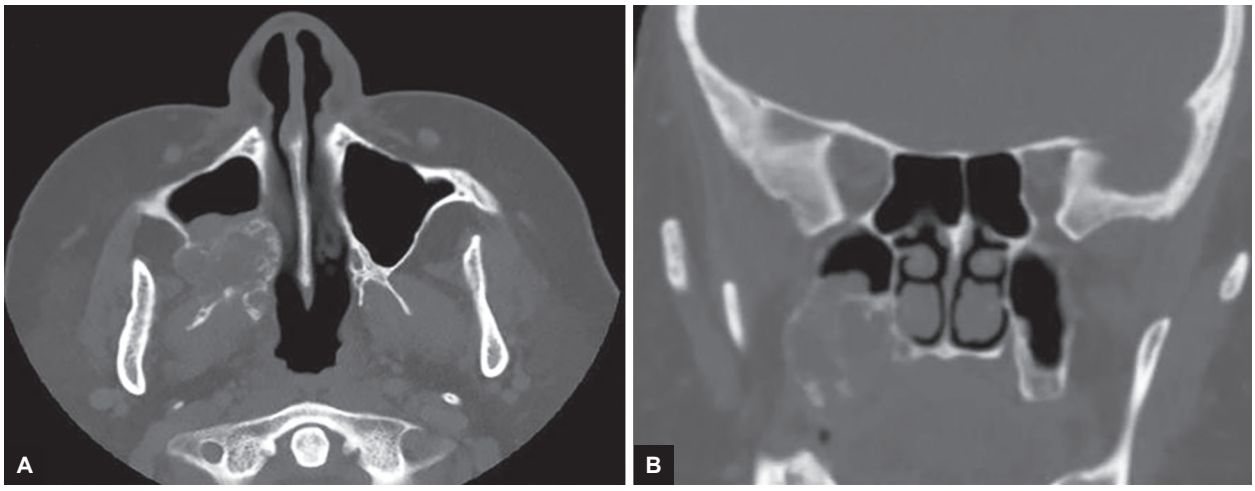
Patient 1 was a 37-year-old female, G2P2, who presented to the emergency department in November 2015 with heavy vaginal bleeding, dizziness, and generalized weakness. Her past medical history was significant for an absence of routine medical care, a 20 pack-year history of smoking, menses at age 12, and first pregnancy at age 19.

Laboratory workup demonstrated hemoglobin of 5.5 g/dL, which ultimately required 12 units of packed red blood cells to stabilize. Initial computed tomography (CT) scan of the abdomen and pelvis revealed a 7.5 cm uterine mass, a 7 cm adnexal mass, and multiple enlarged inguinal and retroperitoneal lymph nodes. Subsequent positron emission tomography/CT demonstrated multiple distant bony signal enhancements in the sternum, spine, and maxilla consistent with metastatic disease.

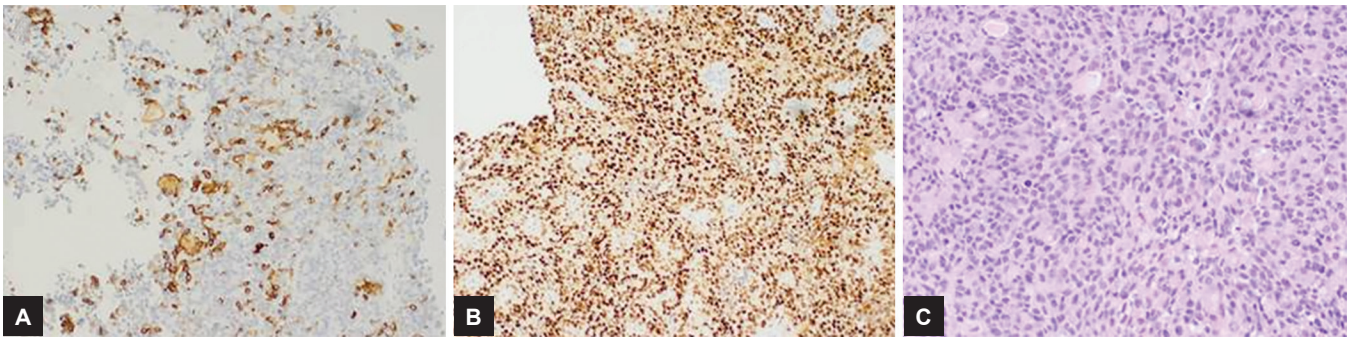
Endometrial biopsy was obtained confirming a poorly differentiated endometrioid carcinoma (International Federation of Gynecology and Obstetrics III). Due to her advanced disease, she was categorized stage 4 and offered palliative chemotherapy and radiation. She immediately began taxol/carboplatin once weekly with concurrent pelvic radiation five times per week for a total of 7 weeks. She completed radiation in January 2016.

In March 2016, she complained of facial pain and underwent a CT of the sinuses (Fig. 1). The mass within her maxilla failed to respond to therapy, which prompted concern for a second primary cancer. In May 2016, she underwent an endoscopic biopsy of the right maxillary sinus mass. Intraoperative findings revealed a large solid tumor within the right maxillary sinus displacing the medial wall into the nasal cavity. A partial medial maxillectomy was performed to gain access to the tumor and a large excisional biopsy was sent for fresh and permanent pathology. Final pathology from this mass was consistent with a metastatic lesion of her known disease (Fig. 2).

In July 2016, she began tamoxifen. Repeat CT of the pelvis in September 2016 showed locoregional improvement. Despite the pelvic response, a right frontal bone mass was noted on clinical exam. By November 2016, she presented to the emergency department with increasing bone pain. In January 2017, she declined an additional round of chemotherapy. In March 2017, she returned to the emergency department with altered mental status and gross metabolic derangements leading to a terminal cardiac arrest.



Figs 1A and B: Axial and coronal CT: There is a mass lesion at the posterior aspect of the right maxillary sinus, which shows an expansile component and remodeling of the bone involving the posterior, lateral, and medial walls of the right maxillary sinus, part of the pterygomaxillary fissure and the pterygoid plate. The mass measures approximately 2.4 cm × 2.3 cm × 3.6 cm and is consistent with a chondroid or fibro-osseous lesion



Figs 2A to C: (A) CD10 immunohistochemical stain shows that a subset of the tumor cells stain positively (10× magnification); (B) estrogen receptor immunohistochemistry stain demonstrates strong and diffuse positive staining (10× magnification); and (C) the tumor shows a diffuse growth pattern with focal glandular structures (20× magnification)

DISCUSSION

Primary cancers of the paranasal sinuses are unusual. They account for less than 5% of all head and neck cancers.[1,2] Metastasis to the paranasal sinuses is a rare event with evidence limited to case reports at this time. True incidence has not yet been reported. A 2001 literature review by Prescher and Brors[3] found 168 cases of metastatic disease to the paranasal sinuses with the most commonly affected sinus to be the maxillary (33%), followed by the sphenoid (22%), ethmoid (14%), and frontal (9%). They also found that multiple cavity disease accounted for 23% of the cases. The maxillary is believed to be the most frequently involved due to the relatively rich vascularization from the pterygoid plexus.[4]

Presentation of paranasal sinus malignancy is often nonspecific due to their insidious growth and inconspicuous location. Epistaxis, obstruction, and pain are most commonly reported. Metastatic disease to the sinuses is usually a reflection of advanced primary disease with gross dissemination and, thus, confers an unfavorable prognosis.[4] The most commonly reported primary cancer with metastatic lesions to the sinonasal cavities are from the kidney, although breast, thyroid, and prostate are also frequently cited.[3] Additionally, lung, hepatocellular carcinoma, Ewing's sarcoma, gastrointestinal tract, and other gynecologic malignancies have been described in case reports.[3-7]

In contrast, gynecologic malignancies are not uncommon. Endometrial carcinoma is the most common gynecologic malignancy in the USA and the fourth most common cancer in women.[8,9] According to the most current Surveillance, Epidemiology, and End Results data, the incidence of endometrial carcinoma is 25.7 per 100,000 women, with an expected 61,380 new cases in 2017.[8] The most common presentation is vaginal bleeding and is diagnosed by dilation and curettage.[10] Endometrioid adenocarcinoma accounts for 75 to 80% of cases and tends to be less aggressive than clear cell or papillary serous subtypes.[9,11]

Metastatic endometrial carcinoma spreads via four routes: direct extension, lymphatic metastases, peritoneal

implants after transtubal spread, and hematogeneous spread. The most common locations for metastatic disease are pelvic nodes, upper abdomen, lung, and liver. Less frequently, metastasis is seen in the brain, bone, and skin.[4,12] Case reports have cited rare metastasis to the paranasal sinuses, iris, and the sphenoid wing causing compression of the orbital apex.[13-15]

The six gynecologic malignancies previously reported with metastasis to the paranasal sinuses involved the ethmoid and sphenoid sinuses. Only three of those were uterine in nature: a clear cell variant, a leiomyosarcoma, and an endometrial carcinoma.[14,16,17] The remaining three gynecologic cancers were a cervical carcinoma, a tubal adenocarcinoma, and an ovarian Sertoli/Leydig cell tumor.[18-20] This case represents the second reported endometrial carcinoma with metastasis to the sinonasal cavity and the first to be reported in the maxillary sinus.

This patient presented with a minimally symptomatic maxillary sinus tumor, which was biopsied to rule out a second primary cancer. Although it did not ultimately change her disease management, the confirmed diagnosis provided the patient with some emotional closure as well as provided clarity to her clinical picture. A secondary benefit of the biopsy was obtaining information about a common cancer with a rare metastatic lesion. We hope that this rare case will further our understanding of metastatic lesions to the sinonasal cavities and expand the differential for sinonasal tumors.

CONCLUSION

Metastatic disease to the paranasal sinuses is an unusual event. When a metastatic lesion is present, the most common cancer is of renal origin and the maxillary sinus is the most affected cavity. Although endometrial cancer is a frequently encountered malignancy, this is only the fourth reported case of metastasis to the sinonasal cavities. Unfortunately, by the time of paranasal involvement, the disease is at an advanced stage and confers a poor prognosis.

CLINICAL SIGNIFICANCE

In this case report, there was concern for a nonresponding metastatic lesion *vs* a second primary. Metastatic lesions to the paranasal sinuses being uncommon, a high level of suspicion should be maintained and biopsy is warranted. Further, this case increases the awareness of the possibility for atypical metastasis and may aid in our understanding of a common cancer.

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