Metastatic endometrial cancer of the paranasal sinuses

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ABSTRACT

Endometrial carcinoma is the fourth most common cancer affecting women in the UK. Its most frequent sites of spread are to the pelvic and para-aortic lymph nodes, vagina and peritoneum. We report a case of a 63-year-old woman with known endometrial cancer who presented with left facial swelling and eye displacement. Investigations revealed an expansile soft-tissue density mass arising within the bone, centred on the left zygoma, with exophytic extension into the left maxillary antrum, infratemporal fossa and inferiorly into the orbit. Endoscopic biopsies were taken and histology confirmed metastatic deposits of endometrial cancer. Clinicians should be aware that distant spread of endometrial cancer is linked with advanced disseminated disease and palliative treatments should be considered.

KEYWORDS

Endometrial cancer – Paranasal tumour – Sinus tumour – Metastasis

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Introduction

Endometrial carcinoma is the fourth most common cancer affecting women in the UK.¹ Its most frequent sites of spread are to the pelvic and para-aortic lymph nodes, vagina and peritoneum. We report a rare case of distant metastasis of an endometrioid endometrial adenocarcinoma to the paranasal sinuses.

Case history

A 63-year-old woman presented with a three-week history of left facial pain and a change in the appearance of her left eye with upward displacement of the globe. This was associated with a new swelling over the left side of her face. She did not have any sinonasal symptoms. Prior to her otolaryngology referral she was seen by ophthalmology who confirmed the eye findings and ruled out any abnormalities to her visual acuity.

The patient was known to have metastatic endometrial adenocarcinoma after presenting four years earlier with postmenopausal bleeding and an adnexal mass. Initial treatment involved a total abdominal hysterectomy, bilateral salpingo-oophorectomy and lymph node sampling. The tumour was staged at International Federation of Gynecology and

Obstetrics stage 3C and pathology confirmed endometrioid endometrial adenocarcinoma. She received six cycles of adjuvant chemotherapy (carboplatin/paclitaxel) with pelvic radiotherapy withheld due to the development of a postoperative ureterovaginal fistula.

Radiotherapy to the pelvis (50.4 Gy in 28 fractions) was performed one year later, with vaginal vault brachytherapy (15 Gy in 3 fractions) due to vaginal and common iliac lymph node recurrence. At post-radiotherapy staging computed tomography (CT), she was found to have liver metastases. Six cycles of chemotherapy (carboplatin/liposomal doxorubicin) were given, with a complete response on follow-up CT imaging. Following on from this, a further recurrence was discovered in the liver. Since the disease was controlled elsewhere and chemotherapy options were limited, a right hepatectomy was undertaken and she was commenced on letrozole hormonal therapy. A subsequent CT showed further metastases in the liver and peritoneum. An additional six cycles of chemotherapy (carboplatin/liposomal doxorubicin) were administered and selective internal radiation therapy was performed.

Her other past medical history includes hypothyroidism, for which she takes levothyroxine. She is a non-smoker and drinks no alcohol. Examination findings revealed a deep soft-tissue swelling in the region of her left zygoma and left

globe displacement. Flexible nasoendoscopy showed a normal nasal cavity.

CT of the paranasal sinuses showed an expansile soft-tissue density mass arising within the bone, centred on the left zygoma, with exophytic extension into the left maxillary antrum, infratemporal fossa and inferiorly into the orbit. A bony rim can be seen over the maxillary antral component (Fig 1) and infra-orbital component (Fig 2). Soft-tissue extension was also noted posterolaterally, superficial to the zygomatic process (Fig 3).

Figure 1 Bony rim over maxillary antral component of mass

Figure 2 Bony rim over infraorbital component of mass

Figure 3 Soft-tissue extension over the zygomatic process

An endoscopic biopsy via a left medial maxillectomy was arranged and a large discrete bone-lined mass was found to be taking up most of the maxillary sinus. The bony shell was removed from the medial aspect to enter the mass and remove the soft tissue within it (Figs 4–6). This was sent for histologic analysis. Histological examination displayed metastatic deposits of grade 2 endometrioid adenocarcinoma (Figs 7–8). The tumour cells were positive for estrogen receptors (Fig 9), progesterone receptors, vimentin and paired-box gene 8 (Fig 10); p16 expression was mosaic type and p53 expression was occasional wild type.

The patient underwent palliative radiotherapy (20 Gy in 5 fractions) to the left sinus mass using arc-based intensity modulated radiotherapy to spare the contralateral orbit. Over the following two weeks, her eye gradually returned to its usual appearance. Further chemotherapy is being considered.

Discussion

The most frequently occurring histological subtype of endometrial cancer is endometrioid adenocarcinoma, which makes up approximately 75–80% of cases.¹ Clear cell, papillary serous, squamous cell carcinoma and mixed are less common, more aggressive and have a higher risk of metastases. Endometrial cancer typically metastasises locally to the pelvic and para-aortic lymph nodes, vagina, and peritoneum. More uncommon areas that may be affected are the lungs, liver and bone. The spread is usually via the lymphovascular route or direct invasion.

Paranasal sinus tumours are not common and are usually benign in origin. Metastases are rare and the majority of the time will only involve one of the paranasal sinuses, with the maxillary sinus being the most likely site. Renal

Figure 4 Mass extending into antrum

Figure 6 Mass spread and debulked

Figure 5 Mass within left maxillary sinus

Figure 7 Haemotoxylin and eosin stain (40x magnification)

carcinoma is the most frequently occurring primary to metastasise to the paranasal sinuses. This is thought to spread via the vertebral vein plexus. Other common metastases to the paranasal sinuses are breast, lung and prostate.²

Only two cases have reported metastases from endometrial primaries to the paranasal sinuses. Scott *et al.*⁵

reported the first case of a stage 2A endometrioid-type endometrial adenocarcinoma spreading to the ethmoid sinus. This was shortly after hysterectomy and prior to any adjuvant chemotherapy.⁵ Ilvan *et al.*⁴ also presented a stage 2B metastatic endometrial clear cell carcinoma to the ethmoid and sphenoid sinus. Interestingly, this patient was found to have metastases in both the liver and lung, which were only discovered following their sinus presentation. Distant spread was thought to be associated with disseminated disease. In our patient, at the time of diagnosis of her paranasal metastasis, she had already had multiple

Figure 8 Haematoxylin and eosin stain (200x magnification)

Figure 10 Paired-box gene 8 (200x magnification)

Figure 9 Estrogen receptors (200x magnification)

recurrences including in the liver. As this is most likely a reflection of advanced disease, palliative treatments should be considered. This will normally involve radiotherapy with or without surgical excision for symptom control.⁵

Other gynaecological cancers have been found to spread to the paranasal sinuses. These include uterine

leiomyosarcoma, cervical carcinoma, fallopian tube adenocarcinoma and an ovarian Sertoli/Leydig cell tumour.⁴

Conclusion

Paranasal sinus metastases are rare and can present with symptoms similar to those of any sinonasal tumour, which include epistaxis, facial pain, facial swelling, eye involvement and nasal obstruction. Distant spread from malignancies is related to disseminated disease and therefore clinicians should be aware of the possibility of metastatic spread in any patient with known endometrial carcinoma presenting with those symptoms. The diagnosis of such metastases will considerably change a patient's outcome and the focus for further management.

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