

Metastatic rectal adenocarcinoma in the external auditory canal

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Abstract

Objectives: To present a rare case of rectal adenocarcinoma metastasising to the external auditory canal, in a patient in whom computed tomography staging of the abdomen, chest and pelvis was clear for metastatic disease.

Methods: Case report and review of the literature.

Conclusions: Metastatic tumours to the external auditory canal are rare, with rectal adenocarcinoma being one of the rarest. However, it is important that the external auditory canal is regarded as a potential site for metastasis, even when computed tomography staging is clear. Metastatic tumour should be included in the differential diagnosis of a patient presenting with an ear mass.

Key words: Ear Canal; Colorectal Carcinoma; Adenocarcinoma; Neoplasm; Metastasis

Introduction

Whilst metastases to the external auditory canal are extremely uncommon, metastatic rectal adenocarcinoma is one of the rarest. Whilst a few cases have been described previously, there are no reports in the literature of a patient presenting with such a metastasis after having had a clear computed tomography (CT) staging scan. We present the case of a male patient who presented with a left external auditory canal mass, having been diagnosed with rectal adenocarcinoma three weeks previously.

Case report

A 61-year-old man was referred to the ear, nose and throat department with a one-month history of a soft mass in his left external auditory canal, associated with a brown discharge and decreased hearing.

Examination revealed a non-tender, 2 × 1 cm, soft tissue mass entirely filling the external auditory meatus. Examination of the canal beyond the lesion was limited, but there were obvious signs of infection.

Three weeks before this consultation, the patient had been diagnosed with poorly differentiated rectal adenocarcinoma. A staging CT scan of his chest, abdomen and pelvis had shown no metastatic disease, and he was therefore due to undergo surgical resection of his rectal tumour.

The lesion in the left ear was biopsied. Histopathological analysis showed a poorly differentiated adenocarcinoma with a 'signet ring' appearance. Comparison of the ear lesion with the recent biopsy of the rectal adenocarcinoma revealed identical histopathological features. Furthermore, immunohistochemical analysis of the ear lesion showed that the malignant cells expressed cytokeratin 20 but not cytokeratin 7. This cytokeratin expression profile is characteristic of colorectal adenocarcinoma. The left ear tumour was therefore diagnosed as metastatic rectal adenocarcinoma.

After discussion with the colorectal surgeon, the patient's planned surgery was cancelled, and he was referred to the oncologists for consideration of chemotherapy.

Discussion

Carcinomas of the external auditory canal are rare and may be either primary or metastatic. The most common primary carcinoma is squamous cell carcinoma.¹ Other primary malignancies include salivary-type carcinomas, ceruminous adenocarcinoma, and skin tumours such as basal cell carcinoma and malignant melanoma.

Rectal adenocarcinoma metastasising to the external auditory canal is extremely rare, with only two previously reported cases, described by Sadek *et al.*² and Carson *et al.*³ The latter authors described a case in which metastasis to the external auditory canal had occurred after the patient had had other metastases for two years, whereas the former authors described no other metastases.

- **Metastasis of rectal adenocarcinoma to the external auditory canal is rare**
- **Metastatic disease should always be considered in a patient with a previously diagnosed carcinoma who presents with otological symptoms, even when imaging suggests that disease is localised to the primary site**

Due to the rarity of metastatic spread to the ear, incidence data are very limited. Cumberworth *et al.* reviewed 165 cases of distant metastases to the ear, including the temporal bone, middle and external ear, and showed that metastatic breast carcinoma was the commonest, followed by lung, prostate and renal carcinoma.⁴ This is comparable to Hill and Kohut's 1976 findings; in a series of 103 cases,

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they found metastatic breast carcinoma to be commonest, followed by lung and renal carcinoma.⁵

Two methods of metastatic spread to the external auditory canal have been identified – vascular and perineural – and these can occur in combination.⁶ Gloria-Cruz *et al.* found that 76 per cent of distant metastases to the temporal bone demonstrated vascular spread, with the most common metastatic site in the temporal bone being the petrous apex.⁷ Vascular spread is the most likely route of the metastasis seen in our case; however, interestingly, there was no radiological evidence of liver metastasis. We hypothesise that, in this case, the carcinoma may have metastasised via the middle or inferior rectal veins into the caval venous system, instead of into the portal venous system and the liver.

Conclusion

The possibility of metastatic disease should always be considered in a patient with previously diagnosed carcinoma who presents with otological symptoms, even when imaging suggests that disease is localised to the primary site.

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