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Metastatic small cell carcinoma presenting as a polyp ias the external auditory canal.

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Abstract: Metastatic carcinoma presenting as an aural polyp is a rare tumor. A review of the literature revealed less than 140 reported cases. The common primary sites are the breast, the lung, and the kidney. A case of small-cell carcinoma of the cervix that metastasized to the external auditory canal, producing facial paralysis in a 74-years-old woman is described.

INTRODUCTION

Malignancies affecting the temporal bone are uncommon conditions and metastatic tumors of this region are less frequent. To date less than 140 cases were reported¹. However, this number will be probably overpassed due to the aggressive therapy used on many primary tumors which permits longer survival times thus allowing more opportunity for unusual metastatic manifestation². A case of small cell carcinoma (SCC) of the cervix with metastases to the external auditory canal (EAC) with a brief review of the literature are presented here. To our knowledge, only five cases originating from the cervix and uterus have been reported and this is the first of SCC of the cervix metastatic to the EAC.

CASE REPORT

A 74-years-old white woman had the diagnosis of stage III B cervical poorly differentiated squamous cell carcinoma in January 1988 at another institution. On gynecological examination, the uterine cervix had a destructive vegetating tumor reaching the middle third of the front wall of the vagina. Rectal examination revealed extension of the mass to the pelvic wall. She was submitted to radiotherapy from February to April of the same year, and an apparently total regression of the tumor was obtained. In January 1989, when she returned to control, she presented with right-sided facial paralysis. An audiogram was not performed. Otological examination revealed a hemorrhagic tumoral mass protruding in the right auditory canal, without aural discharge. A biopsy of this mass disposed a neoplasm consisting of small cells with round to oval and spindle-shaped nuclei with scant cytoplasm disposed in a trabecular pattern, with high mitotic activity, and extensive necrotic areas (Fig. 1). Tissue for electron microscopic examination was fixed in 2.5% glutaraldehyde, postfixed in 1% cacodylate-buffered osmium tetroxide, and embedded in Epon 812. Thin sections were examined with an electron microscope Zeiss Emm-9. Immunohistochemical investigation was performed in both cervical and ear biopsies and primary antibodies were localized using the avidin-biotin-complex method. Microscopic examination of the slides from the cervical biopsy revealed groups of malignant small cells, clustered around small vessels, and embedded in a necrotic background (Fig. 2). Grimelius stain was negative. Neoplastic cells were positive for keratin (AE1/AE3) and for epithelial membrane antigen (EMA), with many of them weakly positive for neuron-specific enolase (NSE), and negative for myoglobin, for carcinoembryonic antigen (CEA), and for protein S 100. Electron microscopy revealed cells closely apposed and occasionally attached by small cell junctions with nuclei surrounded by very irregular membranes (Fig. 3). Their cytoplasm contained few organelles and scattered membrane-bound neurosecretory granules (Fig. 3, inset). Chest roentgenograms showed no evidence of primary or secondary lung tumor. No further treatment was performed and the patient died at home within some weeks. Postmortem examination was not performed.

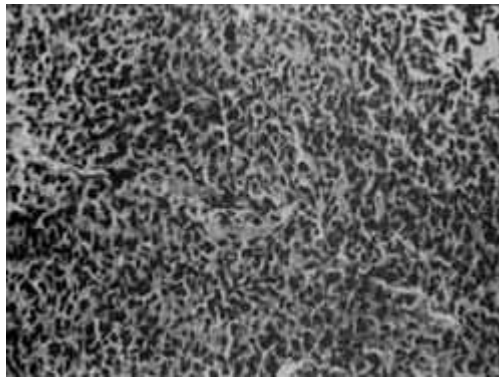


FIGURE 1

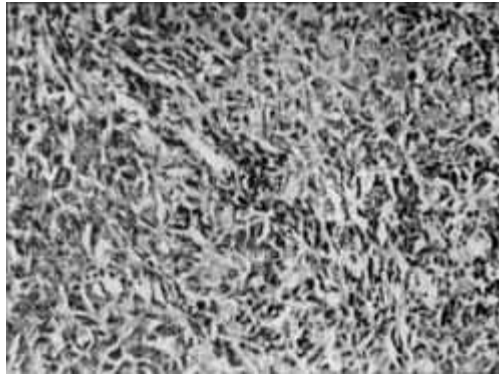


FIGURE 2



FIGURE 3

DISCUSSION

Metastatic tumors of the external auditory canal (EAC) are very rare. One of such unusual cases was found shortly before a sigmoidoscopy revealed a carcinoma of the rectum³. Almost all other cases were associated with signs of facial palsy and probably represent an extensive from the temporal bone metastasis. According to JAHN et al⁴, metastatic tumor in the mastoid air cells reaches the tubotympanic cavity and external canal through vascular subepithelial vessels. FRIEDMAN et al⁵ reported four cases of metastases in the temporal bone, one of them presented as a bleeding mass protruding from the EAC and originating from a primary lung carcinoma. MADOX⁶ reported four additional cases, one of them also presenting as an aural polyp secondary to another lung carcinoma to which he added fine other cases from his review of the literature. Other such case was reported by SCHUKNECHT et al⁷ from a total of ten cases secondarily involving the temporal bone. Amongst 35 malignant tumors of the EAC, CRABTREE et al⁸ described a case of metastatic tumor originating from the kidney. An interesting case appearing as a polyp in the EAC eight years after a nephrectomy by renal carcinoma was reported by FERRON et al⁹ and considered as metastatic from the kidney tumor.

The cases described by HILL et al¹⁰ and by MERRICK¹¹ had their origin in an adenocarcinoma of the large bowel. More recently SALDANHA et al¹² and MORTON et al¹³ added two new cases of metastases to the temporal bone secondary respectively to carcinomas of the bladder and breast, both presenting as a mass in the EAC. Of the nearly 140 published cases, the most common primary tumors are carcinomas of

the breast, lung, and kidney¹.

Cranial nerve palsies in patients with metastatic disease may result from entrapment of the nerve by leptomeningeal carcinomatosis, as it emanates from the cranium, or from increased intracranial pressure. Secondary tumors of facial nerve are not uncommon and facial nerve paralysis may also result from extensive intratemporal tumor involvement¹³. In the latter case, facial nerve may be reached by an expanding tumor which have extend to the middle ear cleft and eroded the facial canal². Tumoral involvement of the facial nerve is estimate to cause about 5 per cent of all cases of peripheral facial paralysis⁴. Isolated facial nerve paralysis was the presenting symptom in one of 27 patients with metastatic temporal bone tumors reviewed by MADDOX⁶. Actually, facial nerve paralysis has a higher incidence in cases of metastatic disease and as many as 34 percent of patients developed it in the course of the disease.

Our patient presented initially with facial paralysis and an aural polyp and these were the only symptoms she mentioned until she was seen for the last time. However, a variety of otologic symptoms can be present in these patients. Aside the symptom triad of otalgia, preauricular swelling, and facial nerve paresis, reported by MADDOX⁶, patients with metastatic disease of the temporal bone can present hearing loss, aural discharge, vertigo, aural mass, or tinnitus. These symptoms are not pathognomonic and are more related to mastoid infection. All polypoid and granulation tissue in the EAC should then be biopsied and submitted to histological examination since differential diagnoses between metastatic disease and a benign destructive lesion or even a second primary malignancy should be established before planning a therapeutical approach.

In the present case neuroendocrine differentiation was manifested by the histological pattern, the ultrastructural finding of neurosecretory granules, and the expression of neuro-specific enolase. As a clinical and pathological entity SCC still constitute a matter of controversy. Some of them arise from the epithelial basal cells or the subcolumnar reserve cell and are of epithelial origin; others contain argyrophil or argentaffin cells and are of neuroendocrine origin or may arise from a stem cell capable of neuroendocrine, epidermoid, and glandular differentiation. Accordingly the widely used old classification scheme of REAGAN et al¹⁶ size of the cell is the most important consideration to name a case as small-cell type. Because of considerable overlap in histologic features other authors do not consider small-cell morphology as the most important criterium. Some cases lack demonstrable neurosecretory granules at electron microscopy but has other features considered as diagnostic, like argyrophilia⁷.

We have used a very limited panel of primary antibodies in our immunohistochemical study. As in case others¹⁷ have found coexpression of neuroendocrine makers and epithelial cytoskeletal proteins in their cases of SCC of the cervix. The distinction between SCC with neuroendocrine differentiation and SCC of epithelial origin is an important problem from a clinicopathological viewpoint since former have a recognized responsiveness to chemotherapy and radiotherapy. The most valuable finding in recognizing SCC with neuroendocrine differentiation is the ultrastructural demonstration of neurosecretory granules, since NSE can be found in some cases of non-SCC¹⁸.

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