症例報告

SCHWANNOMA OF THE MAXILLA : REPORT OF A CASE

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Abstract: The patient, a 14-year-old female, underwent oral and maxillofacial surgery for a swelling in her left anterior maxilla. Radiographs showed an ill-defined radiolucency involving the alveolar bone between the roots of the left upper lateral central incisor and second premolar. CT scans demonstrated a solid mass enclosing cystic lesions, diagnosed as schwannoma with both Antoni type A and B patterns in examination biopsy specimens. Immunohistochemically, S-100 proteins were strongly positive in most tumor cells. Electron microscopic study showed the cells to be surrounded by a basal lamina with many cytoplasmic processes and Luse body consisting of long-spacing collagen.
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Key words : schwannoma, maxilla, intraosseous tumor

INTRODUCTION

Schwannomas arise from Schwann cells of the cranial, intraspinal, peripheral and autonomic nerve sheaths. Although intra-oral lesions are relatively unusual, the tongue is occasionally involved[1]. However, intraosseous cases, most often in the mandible arising from the inferior alveolar nerve, are rare. Only four cases have been described in the literature[2-5]. We here report a rare case of central schwannoma of the maxilla with an unusual presentation.

CASE REPORT

A 14-year-old female suffering from a swelling in her left anterior maxilla demonstrated marked facial asymmetry for over one year. Clinical examination revealed expansion of palatal and alveolar bones in the left central incisor to premolar region. The palatal cortical bone was perforated, with downward displacement of the palate. All the teeth were vital and immobile to an electric pulp tester, but were insensitive to heat and cold or percussion. Her past medical history and physical examination were noncontributory. Radiographs showed an ill-defined radiolucency involving the alveolar bone between the roots of the left central upper incisor and sccond premolar (Fig. 1). CT scans demonstrated a solid mass enclosing cystic lesions. Examination of biopsy specimens resulted in diagnose of a schwannoma with both Antoni type A and B patterns (Fig. 2). Under general anesthesia, an operation was performed.

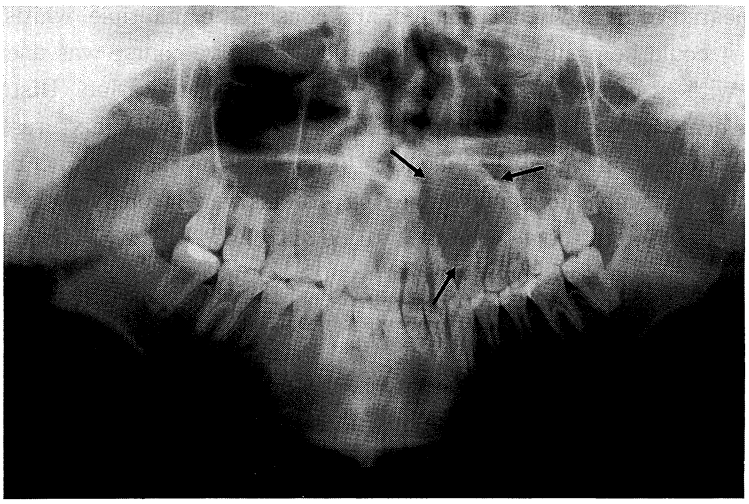

Fig. 1. A radiograph demonstrates an ill-defined radiolucency involving the alveolar bone between the roots of the left upper lateral central incisor and second premolar (arrows).

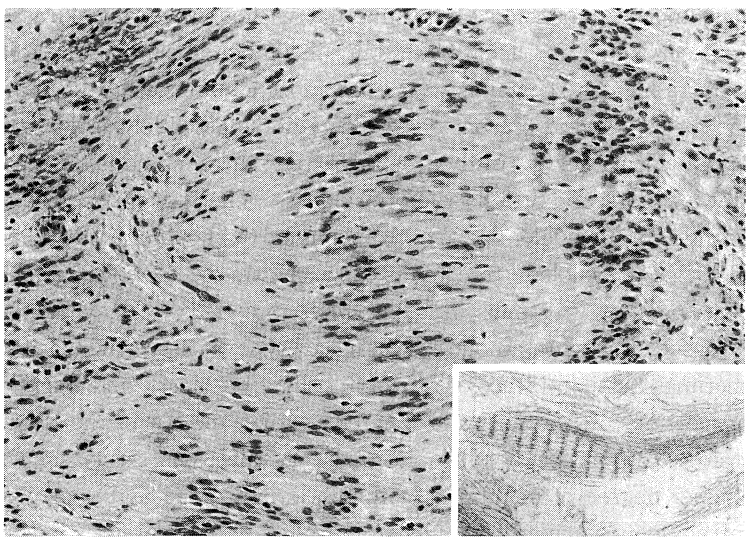

Fig. 2. Histological findings, such as palisading nuclei, Verocay bodies with mixture of spindle cells, fibroblasts and fiber are characteristic of a schwannoma. (×100)
Electron micrograph illustrating cells surrounded by a basal lamina with many cytoplasmic processes and Luse body consisting of long-spacing collagen. (Insertion)

The lesion appeared to be well encapsulated, and consisted of multiple, whitish to gray, solid tissue, so that it could be easily removed. The postoperative course was uneventful and the patient is well without evidence of recurrence 1 year after the operation. Histopathologically, the tumor cells demonstrated palisading nuclei, Verocay bodies with mixtures of spindle cells. fibroblasts and fibers, confirming the diagnosis of benign schwannoma with both Antoni type A and B patterns. Immunohistochemically, S-100 proteins were strongly positive in most tumor cells. Electron microscopy showed the cells to be surrounded by a basal lamina with many cytoplasmic processes and Luse body consisting of long-spacing collagen (Fig. 2 Insertion).

DISCUSSION

Schwannomas and neurofibromas both originate from schwann cells, but they differ considerably regarding their biological and clinical significance. The schwannoma is well encapsulated, and usually solitary without malignant potential on any association with von Recklinghausen's disease. On the other hand, the neurofibroma is often a non-encapsulated, multiple tumor demonstrating malignant change when linked with neurofibromatosis and von Recklinghausen's disease[6]. The incidence of malignant transformation has been reported to be as high as 13 %. Radiographically, schwannomas tend to present as well-circumscribed, unilocular radiolucencies. In contrast, the neurofibroma exhibits more radiographic variation, presenting as either well or poorly circumscribed, unilocular or multilocular radiolucencies[7]

Central schwannomas are rare, comprising less than 1 %, of all primary central osseous lesions. This low incidence is somewhat difficult to explain when one considers that bone is richly endowed with both peripheral sensory nerves and nerve fibers of the autonomic nervous system. Most of the five reported cases involving the maxillary bone presented with a chief complaint of swelling or expansion of the maxilla without pain and paresthesia. Surgical therapy is the best choice for treatment, but, incomplete removal is followed by slow recurrence[2~5]. Intraosseous schwannomas, arise most commonly in the mandible from the inferior alveolar nerve. In the present case, the tumor most likely originated from a small branch of the nasopalatine nerve. Microscopically, the schwannoma is an encapsulated tumor consisting of schwann cells and proliferating fibroblasts. The cells form twisted bundles or line up in such a way that their nuclei are arrayed shoulder to shoulder (palisading or regimentation). Rows of nuclei and nucleus-free bands of cytoplasm are therefore typical. Numbers of schwann cells lie together in groups, forming what is called Verocay bodies and so-called Antony type A tissue. Varying amounts of Antony type B tissue, which is merely a loose, haphazard, sometimes cystic mixture of schwann cells, fibroblasts, and fibers are also characteristic. The proportions of Antoni A and B patterns vary, and one or the other may dominate. The main histologic difference between intraosseous and soft-tissue schwannomas is the presence of a higher degree of cellularity with subtle palisading and poorly formed Verocay bodies in the intraosseous variant[8]. Immunostaining for S-100 protein is nearly always observed in schwannomas as an important diagnostic tool[9].

The present findings thus in line with this case being a rare intraosseous benign schwannoma, which might have originated from a small nerve branch in the maxilla.

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