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Case Report

Malignant fibrous histiocytoma of the jaws: A report of 3 cases

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ABSTRACT

Malignant fibrous histiocytoma (MFH) of the jaws aggressively invades adjacent tissues with a high local recurrence rate. Although radical excision with adequate tumor-free margins is essential, from the anatomical point of view wide resection is often difficult in the head and neck region. We reported 3 cases of MFH arising in the jaws. All three cases were males with 36–51 years old. One disease occurred in the mandible and the others in the maxilla. All cases underwent wide local excision and followed by adjuvant chemotherapy of 2 cycles consisting ifosfamide (IFO), cisplatin (CDDP) and doxorubicin (DOX). In 2 cases, neither tumor recurrence nor metastasis developed at follow-up of 78 months and 70 months. In one case, the patient died from tumor recurrence at follow-up of 2 months. The effects of combined treatment with surgery and adjuvant chemotherapy for MFH of jaws will be assessed by further follow-up.

1. Introduction

Malignant fibrous histiocytoma (MFH) was first described as a new malignant tumor by O'Brien and Stout in 1964 [1]. In the 1970s, Feldman and Norman [2] proposed the first primary tumor of bone that satisfied the histological criteria of MFH.

The 2002 WHO-Classification considers the alternative name of old nomenclature of MFH as it gives a more accurate description of the origin of the tumor cells. Old nomenclature of MFH is deeply ingrained in surgical pathology and very familiar to surgeons and clinicians. Therefore, it is recommended that when the new name is used, old nomenclature of MFH should be placed alongside [3]. Old nomenclature of MFH has five subtypes. Nomenclature and categorization of MFH subtypes are shown in Table 1. It is common for several morphologic patterns to be observed within one lesion [4–6].

The occurrence of MFH in membranous bones is quite unusual. Involvement of the mandible accounts only 3% of all MFH of bone [7,8]. MFH of head and neck that extend into bony structures are associated with a much more aggressive clinical course than those that are restricted to soft tissues [9].

We report three cases of MFH of the jaw and discuss the clinicopathological characteristics and treatments of this disease on the basis of the existing literature.

2. Case reports

2.1. Case 1

A 51-year-old man had the recurrent swelling mass at the right maxillary molar alveolus since 1997. He had noticed the mass at the same region in June 2003 and MFH was diagnosed by the biopsy of the tumor at other hospital in August 2003. Twelve days after the biopsy, he was referred to our department because of the rapidly growing of the tumor. The patient's medical history was non-contributory, and a general physical examination revealed no other abnormalities.

Oral examination showed a pedunculated tumor at the buccal alveolus of the right maxillary molar region. The tumor was 2.5 cm × 2.3 cm and fixed to the alveolus. Its surface was smooth and partially bright red. No metastatic lymph node was palpable in the cervical region.

Magnetic Resonance Imaging (MRI) demonstrated the tumor with homogeneous moderately high signal intensity on gadolinium (Gd)-enhanced weighted image. The mucosa of the floor of right maxillary sinus revealed to be thickened (Fig. 1). During 2 weeks after the first visit to our department, the tumor grew up rapidly

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Table 1
Nomenclature and categorization of malignant fibrous histiocytoma (MFH) subtypes (2002 World Health Organization Classification).

Old nomenclature of MFH subtype	Current nomenclature	Tumor category
Storiform-pleomorphic type	Undifferentiated high-grade pleomorphic sarcoma	Fibrohistiocytic
Myxoid type	Myxofibrosarcoma	Myofibroblastic
Giant cell type	Undifferentiated pleomorphic sarcoma with giant cells	Fibrohistiocytic
Infammatory type	Undifferentiated pleomorphic sarcoma with prominent inflammation	Fibrohistiocytic
Angiomatoid type	Angiomatoid fibrous histiocytoma	Tumors of uncertain differentiation

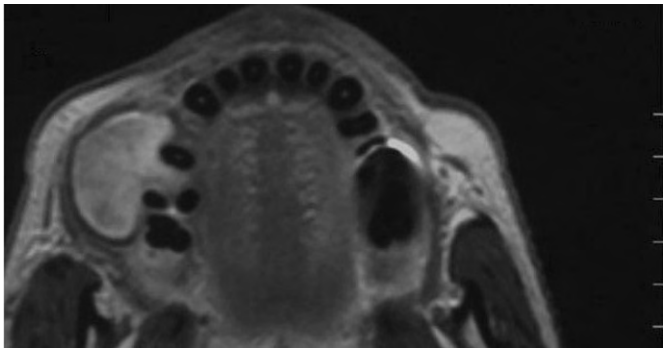

Fig. 1. (Case 1) Gd-enhanced T1-weighted MRI showing exophytic tumor arising in the right maxillary alveolus.

to 5.5 cm × 5.2 cm (Fig. 2). A right subtotal maxillectomy and split-thickness skin graft were performed to resurface of surgical defect. Histologically, tumor was composed of a mixture of spindle cells admixed with polygonal or rounded cells, arranged in a storiform pattern (Fig. 3). The diagnosis was storiform-pleomorphic. All of the margins of surgical specimen were histologically free of tumor. Postoperative course was uneventful. Four weeks after surgery adjuvant chemotherapy was started. The chemotherapy on the standard protocol had 2 cycles of IFO at a dose of 3000 mg/m^2 on day 1, 1500 mg/m^2/day on days 2–7, CDDP at a dose of 100 g/m^2 on day 23 and DOX at a dose of 2.5 g/m^2/day on days 23–24. Cycles were spaced by 24 days interval. The patient received all cycles without any delays or dose reductions. No adverse event occurred. He had no evidence of disease 78 months after surgery.

2.2. Case 2

A 42-year-old man had undergone extraction of the left maxillary second molar in January 2004. He was referred to our department in May 2004 because of non-healed wound of the tooth extraction. The patient's medical history and a general physical examination revealed no abnormalities.

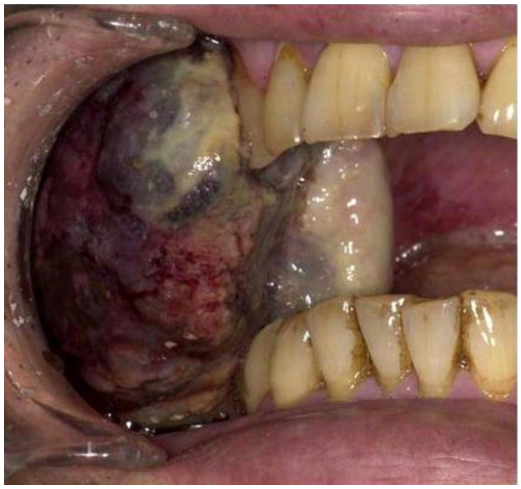

Fig. 2. (Case 1) Intraoral photographs taken at 2 weeks after the first visit showing the rapidly growing tumor at the right maxilla molar region.

Extraoral examination revealed swelling of the left side of the infraorbital region and slight trismus was present. No metastatic lymph node was palpable in the cervical region. Upon oral examination, a granulomatous tumor with the size of 3.7 cm × 3.5 cm was observed in the left maxillary molar region. The biopsy of the tumor gave a diagnosis of MFH.

MRI demonstrated the tumor with heterogeneous low signal intensity on T2-weighed image and gross bone destruction of the left maxillary alveolus and pterygoid process. The tumor involved the lateral pterygoid muscle. However, it showed well-demarcated margins (Fig. 4).

A left total maxillectomy combined with infratemporal fossa dissection, partial mandiblectomy was performed in April 2004. The surgical defect was reconstructed using the rectus abdominis microvascular free flap. Histopathlogically, tumor cells were

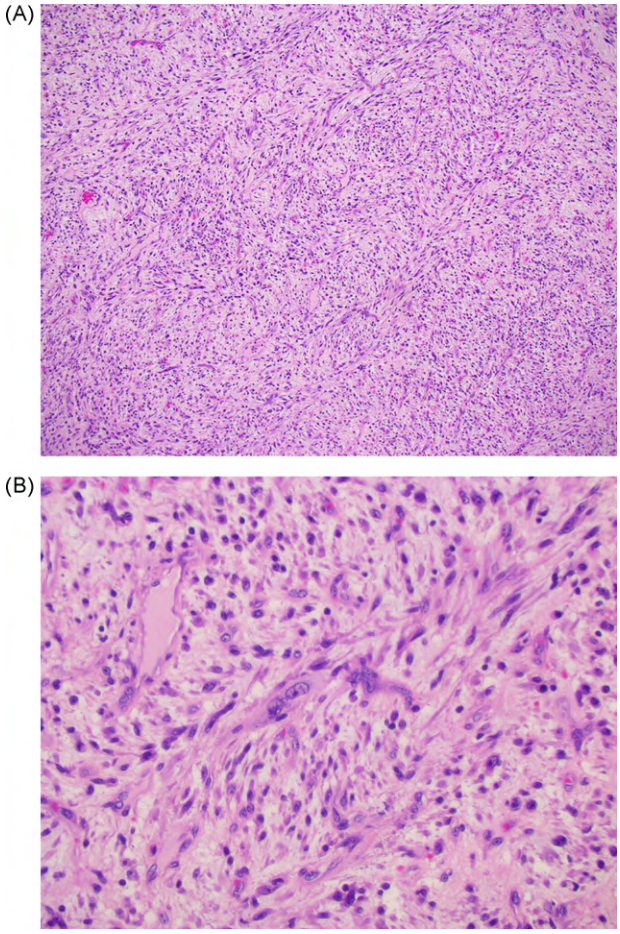

Fig. 3. (Case 1) Photographs of hematoxylin–eosin staining. (A) Rounded or spindled fibroblast-like tumor cells were arranged in a random or haphazard storiform pattern admixed with marked cross-banded collagen fibers (original magnification 100×). (B) (original magnification 200×).