Tzu Chi Medical Journal 23 (2011) 131–134

Contents lists available at ScienceDirect

Tzu Chi Medical Journal

journal homepage: www.tzuchimedjnl.com

Case Report

Intranasal endoscopic surgery combined with adjuvant radiation therapy for olfactory neuroblastoma

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ARTICLE INFO

Article history:
Received 23 March 2011
Received in revised form
11 April 2011
Accepted 11 May 2011

Key words:
Endoscopic surgery
Metastasis
Olfactory neuroblastoma
Positron emission tomography
Radiation therapy

ABSTRACT

Olfactory neuroblastoma, also known as esthesioneuroblastoma, is a rare malignant head and neck tumor. Olfactory neuroblastoma accounts for approximately 3–5% of all malignant nasal tumors. We present a case of olfactory neuroblastoma in a 61-year-old man who underwent endoscopic surgery followed by postoperative irradiation. Right neck metastasis was diagnosed about 6 months after endoscopic surgery. Supraomohyoid dissection of the right side of the neck was performed, but right parotid metastasis was identified about 3 months later. Boost radiotherapy was applied to the right metastatic parotid. There was no evidence of recurrence on head and neck magnetic resonance imaging and endoscopic examination during the 2-year follow-up.

1. Introduction

Olfactory neuroblastoma, also called esthesioneuroblastoma, is a rare head and neck malignant tumor. Olfactory neuroblastoma accounts for approximately 3–5% of all malignant nasal tumors [1]. Here we describe a patient with olfactory neuroblastoma who underwent endoscopic surgery followed by postoperative irradiation.

2. Case report

A 61-year-old man had experienced occasional nasal obstruction and epistaxis when sneezing for 2 years. Anosmia was also reported. Physical examination showed a bilateral nasal tumor that bled easily (Figs. 1A and 1B). Computed tomography revealed an infiltrative, enhancing mass lesion in the bilateral nasal meatuses and ethmoid and sphenoid sinuses, with invasion and destruction of the walls of the sinuses (Fig. 2A). The skull base was invaded by the tumor through the left cribriform plate (Fig. 2B). No neck or parotid metastasis was found (Figs. 2C and 2D).

We performed a biopsy under local anesthesia. Histopathological examination revealed clusters of infiltrating small round blue cells with hyperchromatic nuclei, a scanty delicate cytoplasm, and scattered mitoses (Fig. 3). The morphological picture was that of olfactory neuroblastoma. An immunohistochemical study revealed that most of the tumor cells reacted positively for the neuronal markers cytokeratin, synaptophysin, and chromogranin-A. Because the tumor had invaded the cribriform plate and skull base, it was classified as Stage C according to the Kadish classification (Table 1). The tumor was located over the bilateral nasal cavity and through the posterior portion of the nasal septum, and it bled easily on touch. Preoperative evaluation, including an abdominal ultrasound and whole-body bone scan, demonstrated no distant metastasis. Piecemeal excision of the intranasal tumor was performed carefully by a microdebrider. No serious complications, such as leakage of cerebrospinal fluid or intracranial hemorrhage, were observed in this patient. The patient underwent postoperative tumor bed radiotherapy of 6120 cGy for 7 weeks.

About 6 months after endoscopic surgery, a 3-cm × 3-cm mass was noted over the right neck Level II. Supraomohyoid neck dissection of the right side was performed, and pathological examination showed metastatic carcinoma similar to the previous olfactory neuroblastoma. A postoperative examination with whole-body ^{18}F-fluorodeoxy-glucose positron emission tomography performed about 3 weeks after the procedure demonstrated no

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1016-3190/$ – see front matter
doi:10.1016/j.tcmj.2011.06.001

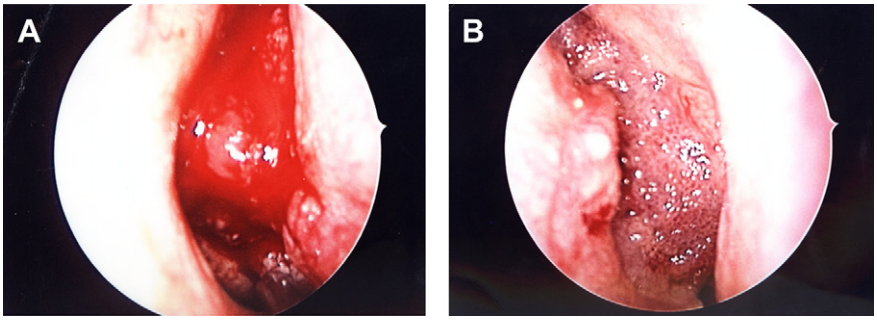

Fig. 1. (A) A nasal tumor that bleeds easily is observed on endoscopy of the right nasal cavity. (B) A nasal tumor is seen over the left nasal cavity through the posterior portion of the nasal septum.

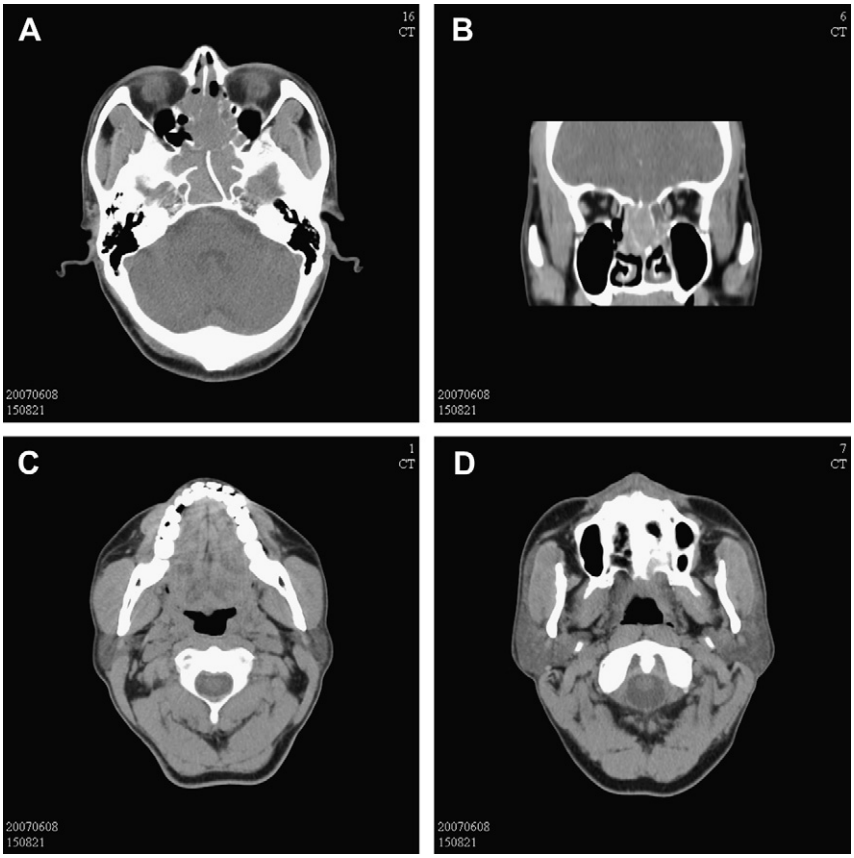

Fig. 2. (A) Axial CT shows an infiltrative, enhancing mass lesion in the bilateral nasal meatuses with invasion and destruction of the sinus walls. (B) Coronal CT shows that the skull base has been invaded by the tumor. (C and D) No neck or parotid metastasis is seen. CT = computed tomography.

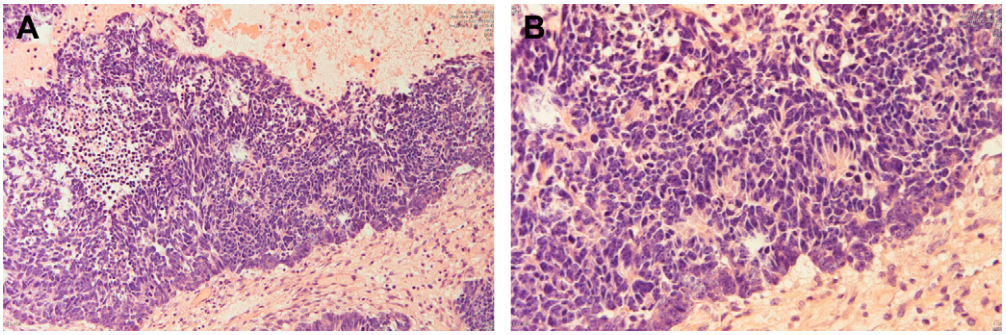

Fig. 3. (A) Microscopic view shows clusters of infiltrating small round blue cells with hyperchromatic nuclei, a scanty delicate cytoplasm, and scattered mitoses (H and E, original magnification: 200×) (B) Many rosette-like structures are seen (H and E, original magnification: 400×). H and E = hematoxylin-eosin stain.