Quiz

Correct answer to the quiz. check your diagnosis

Melanotic oncocytic metaplasia of the nasopharynx

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We report a rare case of melanotic oncocytic metaplasia of the nasopharynx in a 63-year-old man, presenting as several black nodules up to several millimeters at the nasopharynx. It is a benign mimicker of malignant melanoma.

Key words: melanotic, nasopharynx, oncocytic metaplasia.

Introduction

Melanotic oncocytic metaplasia of the nasopharynx (MOMN) is a rare benign lesion, occurring predominantly in Asian men [1]. It is usually diagnosed as melanoma or another malignant tumor in clinical impression. Awareness of this rare lesion is of clinical importance, as it is a benign mimicker of malignant melanoma. There is no recurrence or progression of MOMN in the literature. Herein, we describe a MOMN case with comprehensive studies, including histopathological examination, histochemical stains and immunohistochemistry.

Case report

A 63-year-old Taiwanese man presented to our hospital with epistaxis. He is a heavy smoker of 40 cigarettes per day for 40 years. He had a past history of hypertension under medical treatment. Several black nodules up to several millimeters were discovered at the nasopharynx during nasoscopic examination (Fig. 1). The clinical impression was malignant melanoma or melanosis. This lesion was biopsied and histological examination was performed. Microscopically, there were multiple small nodules composed of clusters of seromucinous glands under the overlying respiratory epithelium (Fig. 2A). The double-layered epithelium of these seromucinous glands showed diffuse oncocytic metaplasia with finely granular brown pigments in their cytoplasm (Fig. 2B). No cytological atypia was noted in the epithelial cells of the glands or the overly-

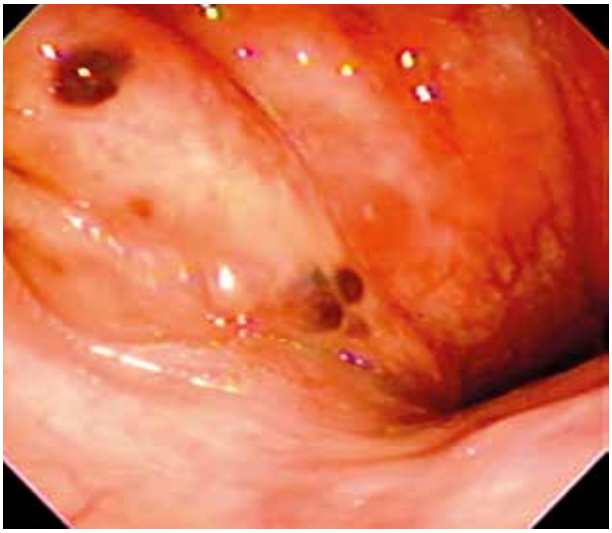

Fig. 1. Nasoscopy revealed several black nodules at the nasopharynx

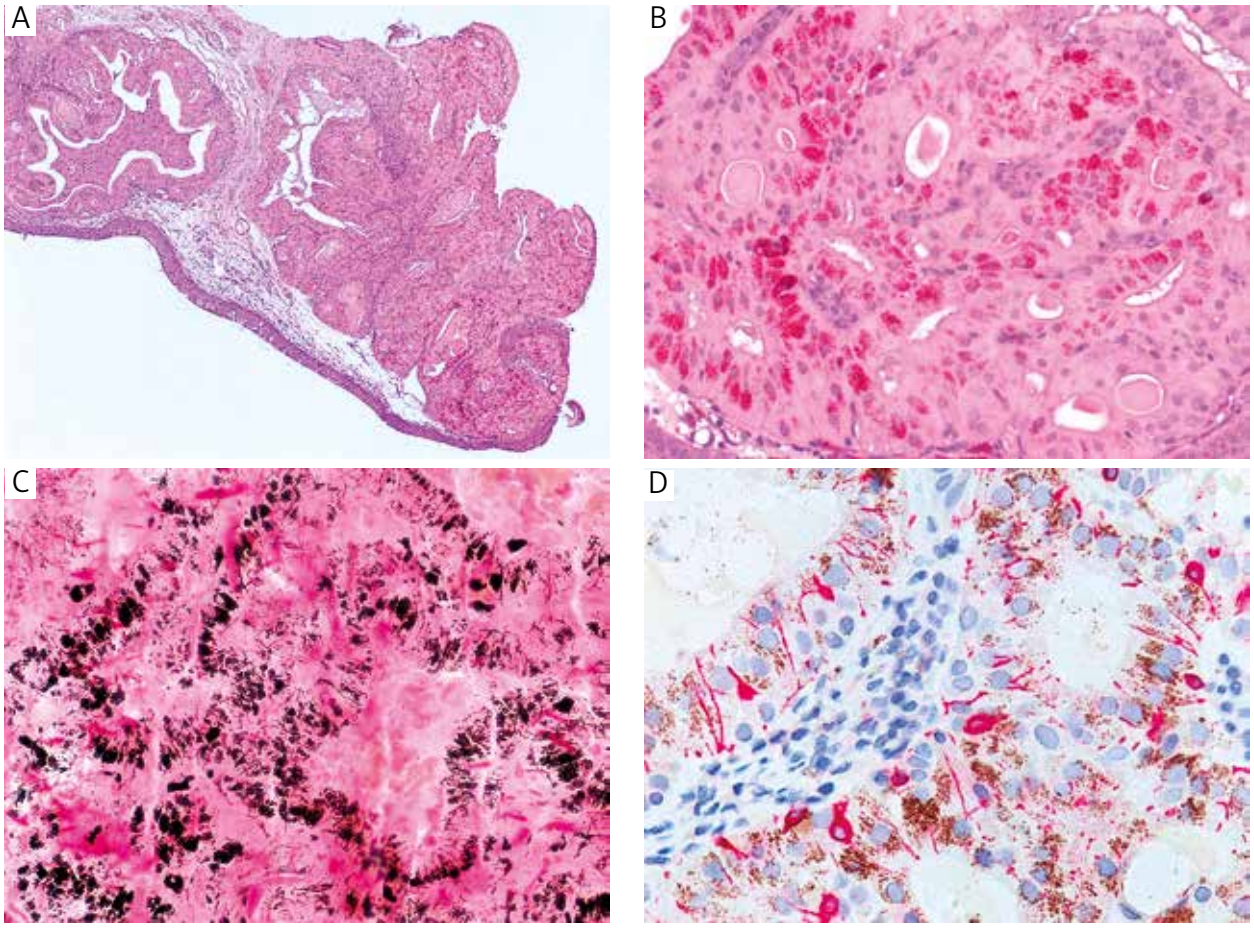

Fig. 2. Microscopic findings. **A)** Low power view showed nodules of seromucinous glands composed of bilayered oncocytic epithelial cells. HE, magnification 40×. **B)** High power view revealed finely granular brown pigments in the cytoplasm of the oncocytic cells. HE, magnification 200×. **C)** The pigments were stained positively for Fontana-Masson stain. Melanocytes with their dendritic processes stretching between the oncocytic epithelial cells were also highlighted. Fontana-Masson stain, magnification 200×. **D)** The melanocytes and their dendritic processes were immunoreactive to Melan-A. Immunostain, magnification 400×

ing respiratory epithelium. Mild chronic inflammatory cell infiltration was also seen in the stroma. The brown pigments were stained positively for Fontana-Masson stain (Fig. 2C) and negative for Prussian blue stain, indicating the melanin nature. In addition, melanocytes with their dendritic processes stretching between the oncocytic epithelial cells were also highlighted by Fontana-Masson stain (Fig. 2C). By immunohistochemistry, the dendritic cells were immunoreactive to S-100 protein and Melan-A (Fig. 2D), but not HMB-45. After pathological diagnosis, the patient is well and the follow-up has been uneventful.

Discussion

Melanotic oncocytic metaplasia of the nasopharynx (MOMN) is an extremely rare lesion, first described by Shek *et al*. in 1995 [2]. There have been only a few case reports and small study series. To date, only 20 cases have been reported in the English literature [2-11]. According to the literature, MOMN occurs predominantly in men (19 men: 1 woman) with a mean age of 68 years (range, 51 to 80 years), and exclusively occurs in East Asians, including Japanese [3, 5, 6, 9], Chinese [2, 4, 10], Taiwanese [8] and Korean [11]. All the cases in the literature pursued a benign clinical course. Neither recurrence nor progression to malignancy was found among these patients during follow-up.

Oncocytic cells are large epithelial cells with voluminous eosinophilic, granular cytoplasm. Ultrastructurally, they contain numerous mitochondria in the cytoplasm [12]. Oncocytic change of epithelial cells is most frequently encountered in the lesions of certain organs, such as the salivary gland, the parathyroid gland, the thyroid gland and the kidney [13]. Oncocytic change in the nasopharynx is an uncommon finding [7] and the melanotic variant of oncocytic metaplasia of the nasopharynx is even rarer. The exact pathogenesis of MOMN is still obscure. Nodular lesions composed of double-layered oncocytic columnar epithelium in the nasopharynx near the native minor salivary glands are reminiscent of War-

thin tumor [14], which is also composed of oncocytic epithelial cells and is strongly associated with smoking. Furthermore, smoking is considered to be related to oral melanin pigmentation [15]. Accordingly, smoking is hypothesized as a predisposing factor for MOMN [1]. However, a positive smoking history was only attainable in six cases [1, 10, 11], including the present case. Ethnic background of East Asian may be another predisposing factor.

The origin of melanin may be attributed to melanocytes, which have been reported to exist in the stroma and epithelium of the upper respiratory tract [16]. The presence of melanocytes with their dendritic processes in MOMN was demonstrated by Fontana-Masson stain as well as S-100 protein and Melan-A immunostains in the present case. The melanin pigments in oncocytic cells may be produced by the melanocytes and transmitted to the epithelial cells via their dendritic processes.

In summary, we have reported a rare case of melanotic oncocytic metaplasia of the nasopharynx with clinicopathological features as well as histochemical stains and immunohistochemical study in detail. It is important for pathologists to recognize this entity, since it might be misdiagnosed as a malignancy, such as malignant melanoma, clinically.

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