Auris Nasus Larynx xxx (2015) xxx–xxx

Contents lists available at ScienceDirect

Auris Nasus Larynx

journal homepage: www.elsevier.com/locate/anl

Pre-operative effects of the administration of systemic corticosteroids combined with antibiotics on a lobular capillary hemangioma in the nasal cavity

Toyoyuki Hanazawa *, Shuji Yonekura, Hiroko Nakamura, Akira Fujikawa, Yoshitaka Okamoto

Department of Otorhinolaryngology/Head and Neck Surgery, Graduate School of Medicine, Chiba University, Inohana 1-8-1, Chuo-ku, Chiba City, Chiba 260-8670, Japan

ARTICLE INFO

Article history:
Received 19 May 2015
Accepted 3 August 2015
Available online xxx

Keywords:
Lobular capillary hemangioma
Pyogenic granuloma
Nasal cavity
Corticosteroids
Antibiotics

ABSTRACT

Lobular capillary hemangiomas (LCHs), also known as pyogenic granulomas, are benign, rapidly growing hemorrhagic lesions that usually develop in the oral or nasal cavities. In adults, LCHs occur in <5% of all pregnant women. A 30-year-old woman presented with a 4-month history of right-sided nasal obstruction and recurrent epistaxis 2 months post-partum. A fragile, pink-red lobulated tumor existed in the anterior portion of the right inferior turbinate; the biopsy revealed a LCH. Although the patient declined surgery using an external approach, treatment with systemic corticosteroids combined with antibiotics resulted in tumor regression and an endoscopic *en bloc* resection was possible. No recurrence has been noted to date (>1 year after surgery). Pre-operative treatment with systemic corticosteroids combined with antibiotics may be useful to induce tumor regression and to excise the lesion completely with an endoscopic approach.

1. Introduction

Lobular capillary hemangiomas (LCHs), also known as pyogenic granulomas (PGs), are rapidly growing, benign lesions that usually develop in the oral or nasal cavities and are often observed in pregnant women (hence, the popular term "pregnancy tumor") [1,2]. LCHs bleed easily with little manipulation (trauma) because of the excessive vascularity. Nasal LCHs arise mainly from the soft tissues of the nasal cavity, and are most often located on the anterior portion of the nasal septum (Little's area) and less frequently on the anterior aspect of the inferior turbinate [1,3,4].

The management of a pregnant woman with a LCH may be complex, and depends on the severity of symptoms and the status of the pregnancy [2]. The standard treatment is complete surgical excision and desiccation of the base with or without pre-operative embolization [1,5,6]. In pregnant women, surgical treatment is usually deferred until after childbirth and is reserved for lesions that fail to regress completely [7].

We present a case of a pregnant woman with a rapidly growing mass in the nasal cavity, which did not regress 2 months after delivery. The patient was treated with systemic corticosteroids combined with antibiotics preoperatively, and the regressed tumor was easily resected endoscopically.

2. Case report

A 30-year-old woman presented with a 4-month history of right-sided nasal obstruction and recurrent epistaxis in 2 months post-partum. Anterior rhinoscopic evaluation revealed a fragile, pink-red lobulated mass occupying the right nostril (Fig. 1A). Contrast computer tomography (CT) and magnetic resonance imaging (MRI) of the nose and sinuses revealed a soft tissue mass existing at the anterior portion of the inferior turbinate (Figs. 1B, C and 3A, B). There was no bony destruction noted on CT. Biopsy of the intranasal mass was performed in the office with no significant bleeding. The histopathology demonstrated a dense network of capillary-sized vessels consistent with a LCH. The biopsy revealed acutely and dramatically inflamed granulation tissue. The patient declined a resection with an external approach and chose treatment with systemic corticosteroids and antibiotics to shrink the tumor. Systemic prednisolone (30 mg/body orally) and

* Corresponding author. Tel.: +81 432227171.
E-mail address: thanazawa@faculty.chiba-u.jp (T. Hanazawa).

http://dx.doi.org/10.1016/j.anl.2015.08.001
0385-8146/

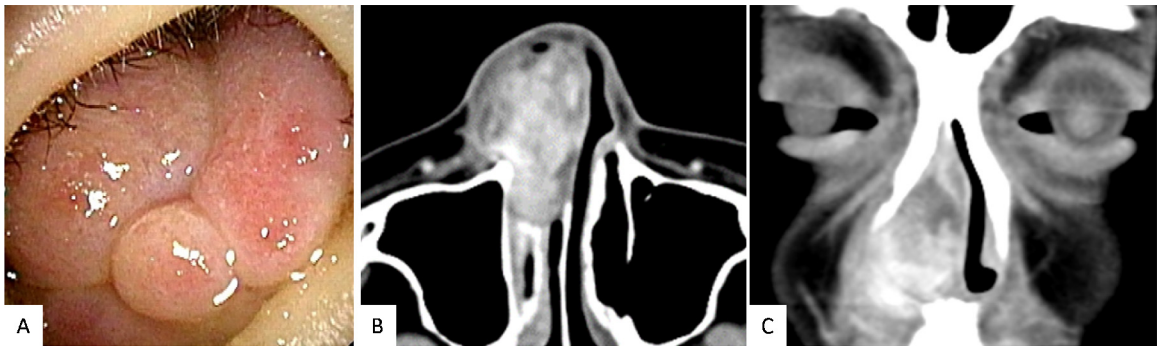

Fig. 1. Clinical findings at the first visit. Anterior rhinoscopic evaluation revealed a fragile, pink-red lobulated mass occupying the right nostril (A), and contrast CT findings showed a soft tissue mass existing in the anterior portion of the right inferior turbinate (B and C).

levofloxacin hydrate (500 mg/body orally) were administrated for 1 week. At follow-up, the lesion had stopped enlarging and regressed dramatically within 1 week (Fig. 2B) compared with pre-treatment (Fig. 2A), and the dose of prednisolone was gradually tapered within 2 months without the administration of levofloxacin hydrate. The lesion responded within 2 months and regression plateaued at the end of steroid treatment (Figs. 2C and 3C, D). It was decided that the patient required surgical intervention with endoscopy. The tumor was resected *en bloc* endoscopically without pre-operative embolization and was confirmed to originate from the head of the right inferior turbinate. The histopathologic examination diagnosis was a LCH, which consisted of two lesions, a highly vascular proliferation area, and an inflammatory granulation area (Fig. 4). No recurrence has been noted to date (>1 year after surgery).

3. Discussion

We report a case of a pregnant woman with a rapidly growing mass in the nasal cavity, which did not regress by 2 months post-partum. In adults, LCHs occur in as many as 5% of all pregnant women [7,8]. LCHs may develop at any point during pregnancy, but most commonly occur during the last two trimesters [2,6]. These clinical features suggest that this tumor may be hormone-sensitive [9]. Although LCHs occurring in pregnant women usually regress in 1–2 months post-partum, surgical excision may be required if the lesion fails to resolve.

Systemic corticosteroids and antibiotics were administrated to the patient in an effort to shrink the lesion pre-operatively. The etiology of LCH remains unknown, although there is some evidence suggesting traumatic and hormonal etiologies. The relative frequency of LCH developing on the anterior nasal septum and the anterior aspect of the inferior turbinate, as well as the increased incidence of LCH in habitual nose pickers (rhinotillexis) or those with a history of nasal packing lends credence to the belief that local trauma plays a role in the genesis of LCH [3,7]. Furthermore, eruptive PGs developing on burned skin are clearly improved after oral erythromycin treatment [10]. It has been theorized that lesions represent an overgrowth of granulation tissue produced by a hyperactive inflammatory response [3,4,11]; a biopsy revealed acute, inflammatory granulation tissue in the case reported herein. We targeted the control of a causative infection and a hyperactive inflammation within the tumor, and induced regression of the lesion by treatment with systemic corticosteroids and antibiotics pre-operatively. This finding suggests the local hyperactive inflammation induced by the infection as a causative etiology.

Corticosteroids are the first-line treatment for nasal hemangiomas, and an additional treatment for recurrent pyogenic granuloma on the face [12]. Systemic corticosteroids give excellent results in 30% of cases and slow growth in a further 40% of cases in the nasal cavity [13]. In the current report, the response to corticosteroids plateaued after 2 months, and the patient required an endoscopic procedure. The histopathologic findings of the resected tumor revealed LCH, which consisted of two lesions (a highly vascular proliferative area and an inflammatory granulation area). Histologically, two areas are distinguished in LCHs (or PGs) according to the criteria of Toida et al. [14] (a lobular area and a superficial usually ulcerative area). The former area is characterized by lobular proliferation of vascular elements forming tiny vascular lumina, and the latter area features inflammatory granulation tissue beneath the ulcers, showing superficial neutrophilic infiltrates, marked stromal edema, and irregular dilation of blood vessels. The effects of corticosteroids may be dependent on the proportion of highly vascular proliferative and inflammatory granulation lesions.

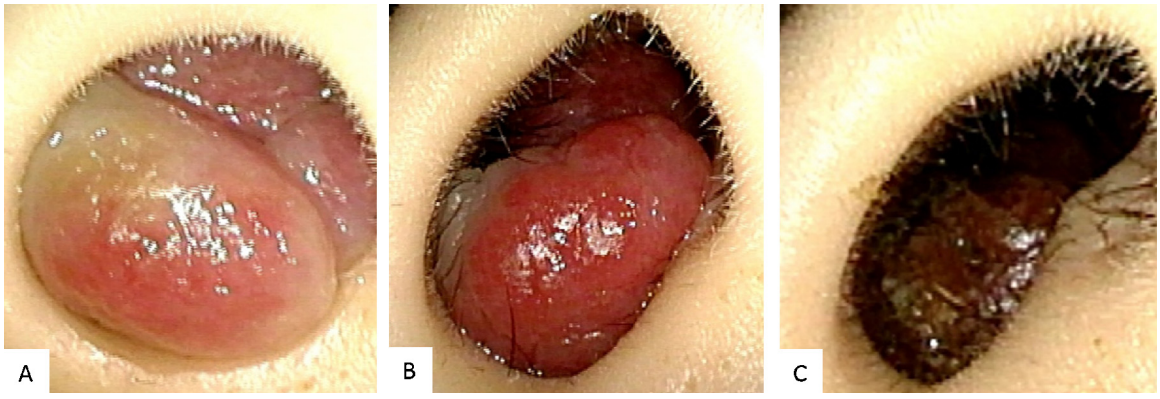

Fig. 2. Anterior rhinoscopic findings in the right nostril pre-operatively (A), 1 week (B), and 2 months after treatment with systemic corticosteroids and antibiotics (C).

Please cite this article in press as: Hanazawa T, et al. Pre-operative effects of the administration of systemic corticosteroids combined with antibiotics on a lobular capillary hemangioma in the nasal cavity. Auris Nasus Larynx (2015), http://dx.doi.org/10.1016/j.anl.2015.08.001