

Pyogenic Granuloma of Nasal Septum: A Case Report and Review of Literature

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Received 7 May 2014; revised 5 June 2014; accepted 3 July 2014

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Abstract

Pyogenic granuloma is a rapidly growing hyperplastic, vascular proliferation of the skin or mucous membrane. A benign lesion of unknown aetiology commonly associated with pregnancy, oral contraceptives and trauma. While lesions occur frequently in oral cavity, occurrence in the nasal septum is rarely reported. We report a case of 38-year-old male (known case of active pulmonary tuberculosis on anti-tubercular therapy) who presented with unilateral pyogenic granuloma of the anterior nasal septum with unilateral nasal obstruction. We emphasize that the rarely seen lobular capillary hemangioma (pyogenic granuloma) must be kept in mind in the differential diagnosis of a rapidly growing mass of the nasal cavity, even without history of epistaxis. Here we report an uncommon case and review current literature regarding aetiology, site and role of rifampicin in pyogenic granuloma.

Keywords

Pyogenic Granuloma, Nasal Obstruction, Vestibule

1. Introduction

Pyogenic granuloma of nasal cavity is also known as lobular capillary hemangioma, epulis gravidarum, eruptive hemangioma, granulation tissue-type hemangioma, granuloma gravidarum, pregnancy tumour, botryomyoma [1] [2]. The various names of this tumour show that the exact pathogenesis continues to be debated. Some theories postulate that it has an association with injury and hormonal factors. In the nasal cavity, anterior septum is the most frequently affected followed by turbinate, but lesions have also been described arising from the maxillary sinus, roof of nasal cavity and floor of nasal vestibule. Pyogenic granuloma usually presents as epistaxis and

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unilateral nasal obstruction. Histologically, these masses are characterized by varying sized capillaries in lobular arrangements and anastomosing networks of capillaries, thus supporting the name lobular capillary hemangioma [3]. Surrounding these lobules is a loose spindle cell proliferation of pericytic cells. Surgical excision is the treatment of choice for pyogenic granuloma [3].

2. Case Report

A 38-year-old male presented with nasal obstruction and a visible mass in the left nasal cavity of two weeks duration. He complained of nasal obstruction due to the increasing size of mass becoming progressively severe over a week period. There was no history of trauma, nasal packing and/or irritation. The patient was on anti-tubercular therapy (ATT) for pulmonary tuberculosis as per RNTCP (Revised National Tuberculosis Control Program) guidelines of a “new case”. He had completed a 2 months intensive phase of ATT which included-Isoniazid (300 mg), Rifampicin (450 mg), Pyrazinamide (1500 mg) and Ethambutol (1200 mg) thrice-weekly. This was to be followed by a continuation phase of Rifampicin (450 mg), and Pyrazinamide (1500 mg) for a period of 6 months thrice-weekly. The patient at the time of presentation was on the 3rd month of continuation phase. Physical examination revealed a large, dark reddish polypoid mass in the left nasal cavity, insensitive to touch and this did not bleed on manipulation. It originated from the anterior portion of the septal mucosa about 3 mm posterior to the left vestibule, extended to the nasal vestibule completely obstructing the nasal orifice (**Figure 1**). Complete removal of nasal mass was done under local anesthesia by cauterization of the base with a unipolar electro-cautery with minimal blood loss. The mucosal defect thus created was 2 mm × 1 mm in size; the defect was left for free epithelialization. On gross examination, a smooth-surfaced, grayish-pink polypoid mass was approximately 10 × 15 × 5 mm in size (**Figure 2**). At histopathology revealed a polypoid mass of angiomatous tissue protruding above the surrounding mucosa. Pseudostratified ciliated epithelium covered the entire lesion, and some parts were eroded. Lobules of dilated and congested capillaries were noted. There was profound inflammatory cell infiltration (**Figure 3(a)** and **Figure 3(b)**). Post-operative period was uneventful.

3. Review of Literature

Pyogenic granuloma was first described as “human botryomycosis” by Poncet and Dor in 1897, and later in 1974 Haetzell coined the term “pyogenic granuloma” [1] [2]. However, the term is not representative of the underlying histopathology. The microscopic findings of pyogenic granuloma consist of proliferation of capillaries, and there are no pyogenic or infectious entities, nor are there macrophage-laden or granulomatous features. Hence, the term “lobular capillary hemangioma” as described by Mills *et al.* [4] is more appropriate. Despite this, the term “pyogenic granuloma” is still commonly used in most scientific literature. Patrice *et al.* in their series of



Figure 1. Arrow showing dark reddish polypoid mass in the left nasal cavity.



Figure 2. A smooth-surfaced, greyish-pink polypoid mass measuring approximately 10 × 15 × 5 mm.

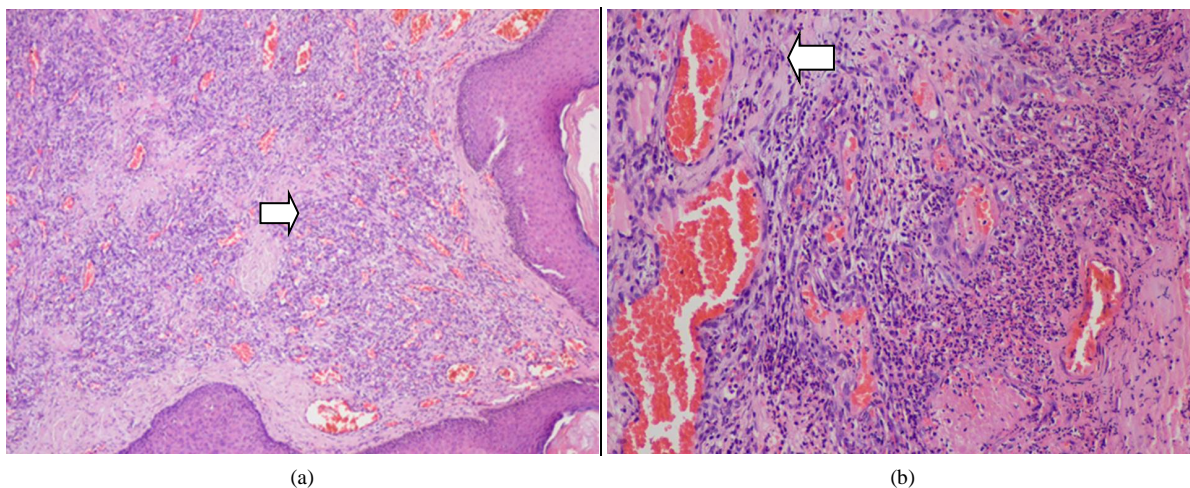


Figure 3. Histology showing lobules of dilated and congested capillaries with profound inflammatory cell infiltration (H & E) in 40× and 100× respectively.

178 patients, reported that the head and neck area, particularly the oral cavity accounted for the most common sites involved (62.4%) [5]. Nasal cavity [4] [5] was involved in only 7% - 10% of their patients; with the anterior portion of the septal mucosa and the tip of the turbinate being the most commonly involved areas.

The pathogenesis of pyogenic granuloma still remains unclear [4]-[6]. While it is accepted that trauma is a common cause of pyogenic granuloma, a series by Patrice *et al.* found that only 7% of patients had preceding history of nasal trauma [4]. Habitual nasal picking, prolonged contact with irritating agents from nasal packing [7] [8], nasogastric tube [9], foreign body or nose piercing [10] have all been reported to induce trauma. Pyogenic granuloma can also occur in association with increased levels of estrogen and progesterone as seen during pregnancy. The reported incidence during pregnancy ranges from less than 2 percent to approximately 5 percent [11]. Development of pyogenic granuloma in our patient could have been probably due to habitual nasal picking.

Pyogenic granuloma occurs at all ages, but more often in the third decade, and is more common in females. In the paediatric age group, pyogenic granuloma commonly affects males [2] [4].

Symptomatic manifestations of pyogenic granuloma include unilateral epistaxis (95%), nasal blockage (35%), rhinorrhoea (10%), facial pain (7.5%), headache and hyposmia (4%) [2]. Pyogenic granuloma commonly presents as a red-purple coloured mass, lobulated, broad-based or pedunculated; <10 mm in diameter, and may become ulcerated due to exposure to trauma, with variation in size. Though insidious in onset, full growth may be

attained in 4 to 6 weeks. Growth seems to be self-limited. It has been observed that if snipped off by the patient, the tumour will recur. It is usually not painful and is non-tender on manipulation.

Complications of pyogenic granuloma are cosmetic and functional. They depend on the location, size or rapid proliferating phase of the neoplasm. Some type of complication is found in 40% of lesions, the commonest being bleeding (75%) and ulceration (21%) [12].

The differential diagnosis of tubercular intranasal pyogenic granuloma which includes nasal polyp, sarcoidosis, Wegener's granulomatosis, simple granulation tissue, papilloma, Kaposi's sarcoma, squamous cell carcinoma, mucosal malignant melanoma and lymphoma.

Radiological evaluation (computed tomography or magnetic resonance imaging) is only indicated has as complementary test to nasal endoscopic examination in large lesions especially those involving the skull base, or rapidly enlarging mass with evidence of bony erosion to exclude malignancy [12]. In our case, as the origin of the mass was clearly identified with endoscopy and limited to the anterior nasal septum, imaging study was deemed unnecessary.

Total excision of the lesion by either classical or endoscopic surgery techniques has been recommended [2] [3]. Endoscopic surgery provides better visualization of the mass and surrounding anatomy, thus allowing the surgeon to remove the mass completely without an external incision. In the very recent literature, all patients with a large lesion have been managed without preoperative embolization and none have experienced blood loss requiring transfusion. Recurrences are uncommon, and no malignant transformations have been reported [2] [3] [6].

Michel Noubom *et al.* [13] presented the possibility of treatment of this disease with the combination of rifampicin and dapsone for countries with limited income or in conditions where patient denies surgery for a period of one month (the authors in this study have not mentioned the dosage of rifampicin and dapsone administered). But in our case the patient in spite of being on rifampicin before and during the course of disease developed pyogenic granuloma. The role of rifampicin as a treatment option, its dosage and interaction with dapsone in the course of treatment of pyogenic granuloma needs further evaluation.

4. Conclusion

We have reviewed the literature of pyogenic granuloma of nasal septum and reported a rare case of nasal septum pyogenic granuloma in an adult male with active pulmonary tuberculosis on anti-tubercular treatment. Failure to recognize the clinical features and histopathological characteristics can lead to confusion with other forms of hemangioma or granulating lesions. Complete excision can be curative. The role of rifampicin and its dosage still requires further study before establishing it as a recognized treatment option. Therefore, pyogenic granuloma should be considered in the differential diagnosis of any anterior nasal septum mass even without associated epistaxis.

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