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Case Report

Nasal Granuloma Gravidum

Smail Kharoubi*

Ent Head and Neck Surgery, university baji mokhtar, Annaba, Algeria

***Corresponding author:** Smail Kharoubi, Ent Head and Neck Surgery, university baji mokhtar, Annaba, Algeria

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Abstract

This study reports on three pregnant women. Two cases presented during the third trimester (at 34 and 35 weeks of gestation), and one case presented postpartum. Clinical findings included recurrent epistaxis caused by a red septal nasal mass. Imaging (CT scan), performed in two cases, showed a well-circumscribed mass with no bone destruction. Surgical excision was performed, including one case managed via radiofrequency ablation under local anesthesia. No recurrence was observed at the 9-month follow-up.

Keywords: Nasal bleeding; nasal endoscopy; nasal granular gravidum; pyogenic granuloma

Introduction

Nasal granuloma is a benign fibrovascular proliferation lesion with an unknown etiology. During pregnancy,hormonal changes and anup to50% increased blood volume led to vasodilation and mucosal swelling, particularly affecting the nasal vessels. This causes vascular congestion and heightened fragility of the nasal mucosa, which may also be amplified by increased levels of progesterone [1]. Epistaxis during pregnancy is common. It may be due to increased vascularity of the nasal mucosa due to effects of estrogen, which is also associated with the development of giant cell reparative granulomas of the maxilla and mandible or granuloma gravidarum lobular capillary hemangiomas or pregnancy tumor or nasal hemangiomas. Nasal granuloma gravidarum typically appears during the second or third trimester of pregnancy, and patient tolerance varies depending on the status of the parturient and the characteristics of the lesion. Nasal endoscopy and CT scans can precisely define the disease and facilitate its management.

Surgery is the primary treatment, although the lesion can regress spontaneously postpartum.

Clinical Cases

Three cases of nasal granuloma gravidarum were included in our study. The patients' ages were 32, 36, and 34 years, respectively. One case presented postpartum, while the other two presented at 34 and 35 weeks of gestation. The primary clinical sign was epistaxis. Nasal endoscopy revealed a red septal nasal mass (either pedunculated or sessile) measuring between 15 and 20 mm (Figure 1).

Figure 1: Hémangiome du septum nasal chez une femme enceinte. Aspect macroscopique.

A CT scan was performed in two cases, showing a well-limited mass without bone destruction. Treatment was surgical (surgical endoscopy in general anesthesia), which included nasal radiofrequency ablation under local anesthesia in one case. No recurrence was observed after a 9-month follow-up period (Figure 2).

Figure 2: Scanner en coupe axiale du massif facial : hémangiome septal droit (tache vasculaire).

Histologic exam confirmed the diagnosis of lobular capillary hemangioma (Figure 3) (Table1).

Table 1: Summary of the three cases.

N	Age	Pregnancy	Signs	Site	Clinic	Size(mm)	Treatment	FOLLOW UP 3,6 and 9 Months
1	32	(1 PAR) Post partum	Nose bleeding Nasal obstruction	septal	-Red mass pendulected	20X15	Endoscopy A/G	No relapse

2	36	(2PARS) 34 weeks	Nose bleeding Mass nostril	septal	-Red mass sessile. -CTscan.	20X20	Radiofrequency A/L	No relapse
3	34	(1 PAR) 35 weeks	Nose bleeding	septal	-Red mass pendulated. -CTscan.	15X15	Endoscopy A/G	No relapse

A/G: General Anesthesia.

A/L: Local Anesthesia.

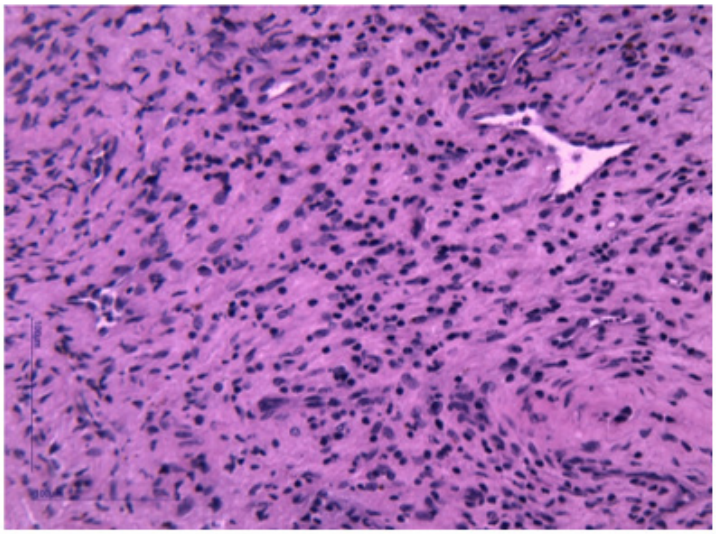

Figure 3: Tumor proliferation composed of endothelial cells without atypia forming vascular structures without lumens. HE stain ×400.

Discussion

Lobular capillary hemangiomas, initially described as botryomycoma, are the most common type. Indeed, Poncet and Dor first coined the term "human botryomycoma" in 1897 [2]. Later, in 1904, Hartzell introduced the term "pyogenic granuloma," suggesting a bacterial origin in its pathogenesis [3]. However, Bhattacharyya et al. rejected these findings, questioning its infectious nature and expressing reservations regarding its granulomatous character [4]. Ultimately, after 1980, Mills et al. proposed the term "capillary hemangioma" to replace botryomycoma [5]. Lobular capillary haemangioma (pyogenic granuloma) is benign fibrovascular proliferative tumour occurring in both children and adults. The prevalence has been reported as 0.5%–5% of all pregnancies [6]. According to the literature, the prevalence of granular gravidum ranges from 0.5 to 5 % in pregnancy with only 7 to 10 % of these cases involving the nasal fossa. The vast majority of granular gravidum cases arise in the oral cavity, especially in the gingivae [7]. Most of these lesions are small and involute spontaneously after delivery.

The aetiology of granular gradidum is thought to be linked to fluctuating levels of oestrogen and progesterone during pregnancy and parturition [8]. During pregnancy, heightened levels of these hormones may result in an amplified reaction to local trauma or irritation to the nasal mucosa. These lesions have been reported to resolve spontaneously postpartum, suggesting a role for hormones in the development of granular gravidum. Other factors can promote the development of these lesions, including trauma (such as nose picking, nasal packing, or nasal fracture) and medications, particularly epidermal growth factor receptor (EGFR) inhibitors, antiviral drugs, and immunosuppressants. In the nasal cavity, the most common site for these tumors to present is on the anterior nasal septum, followed by the nasal vestibule, inferior turbinate, middle turbinate, and uncinate process. Smith reported that 76% of patients presented with a granuloma gravidarum localized to the nasal septum. In contrast, involvement of the inferior turbinate is rare, ranging between 12% and 20% [9]. Alalula et al. reported a case of nasal granuloma gravidarum with multiple sites of origin in a 33-year-old gravida who presented during her third trimester. Surgical excision was subsequently performed postpartum using bipolar diathermy [10].

The most common symptoms are easily bleeding and nasal obstruction, but the pain is relatively rare. Epistaxis is characteristic, recurrent, and varies in severity. Furthermore, the etiology of epistaxis in pregnancy is variable and can be secondary to chronic rhinosinusitis, pregnancy rhinitis, aspirin treatment, or pyogenic granuloma [11]. Nasal endoscopic exam shows a mass gray-to-pink, red or dark, irregular and friable tumor, often with a pedunculated base or sessile. Lesions may vary in diameter from a few millimeters to 4 cm during the presentation [12,13]. Imaging is habitually occurred and based on CT scan. Granulum gravidia appears as a well-defined tumor of soft tissue density, with marked enhancement but no calcification. The magnetic resonance imaging (MRI) features of nasal PG show high heterogenous T2 signal intensity, with a thin peripheral iso intense or hypo intense ring. T1-weighted images usually demonstrate homogeneous isointensity to grey matter. In histologic examination pregnancy granuloma is a benign vascular tumor caused by excessive granulation tissue reaction, typically characterized by disorderly capillary growth, inflammatory cell infiltration, and increased stromal deposition. Granulum gravidia can regress within 1 to 2 months post-partum [14].

Recurrence rates can be as high as 40%, especially following incomplete resection or for lesions managed with cautery. The diagnosis is validated based on the patient's medical history, ongoing pregnancy, and the endoscopic examination. The CT scan showed benign findings: circumscribed margins of the lesion, coupled with fairly homogeneous enhancement and an absence of bone destruction. The differential diagnosis includes papilloma, leiomyoma, and other vascular tumors (such as glomangiopericytoma, glomus tumors, and angiofibroma). Malignant tumors, including carcinomas (spindle cell carcinoma, adenocarcinoma), lymphomas, melanomas (amelanotic), and inflammatory conditions (such as granulomatosis with polyangiitis and sarcoidosis), must also be considered. Complete surgical excision (with or without pre-operative embolization) is the most effective therapeutic option among others. Two of our patients underwent endoscopic surgery under general anesthesia, while the final case was managed using nasal radiofrequency ablation under local anesthesia.

The protocol consists of peritumoral infiltration followed by submucosal or subperichondral excision of the lesion. Achieving perfect hemostasis is required, followed by nasal packing for 48 to 72 hours. Posteriorly located lesions (such as those on the vomer or the posterior part of the septal cartilage) may cause technical difficulties and must be completely excised down to the periosteum to prevent recurrence [15]. Other methods include electrocautery, laser therapy. Radiofrequency ablation is a viable alternative for small lesions. In a recent publication, Liang reported the use of radiofrequency ablation in 15 patients presenting with lobular capillary hemangiomas of the nasal cavity, with no complications or recurrences observed after a 6- to 48-month follow-up period [16].

Indications

Management of nasal granuloma gravidarum depends on the severity of symptoms and pregnancy status. Conservative treatment can be attempted when the tumor is small. If the lesion does not regress spontaneously after delivery, surgical removal with or without pre-operative embolisation is the accepted therapy.

Conclusion

Nasal granuloma gravidarum is a benign lesion that commonly occurs on the skin and oral mucosa, but rarely in the nasal cavity. Epistaxis is the most frequent clinical presentation; therefore, clinicians must consider this entity in the differential diagnosis, alongside rhinitis, drug-induced etiologies, and hemostatic disorders. Nasal endoscopy facilitates the diagnosis, typically revealing a mass on the nasal septum. Furthermore, imaging can confirm the benign nature of the lesion and help rule out other benign or malignant nasal tumors. The management of this condition varies based on the primary symptoms, symptom severity, tumor volume, and patient preference. While the lesion may regress spontaneously postpartum, surgical excision with or without preoperative embolization remains the accepted definitive therapy [17]. Recurrence following surgical removal is rare if resection is achieved with clear margins. While recurrence during a subsequent pregnancy remains theoretically possible should predisposing pathogenic factors reemerge, it has not yet been reported in the medical literature.

Declaration of Conflicting Interest

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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