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### **Case Report**

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# Septal pyogenic granuloma: a continuing riddle

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#### **ABSTRACT**

Pyogenic granuloma (PG) is a benign vascular lesion of the skin and mucous membranes commonly affecting the head and neck but less common in the nasal septum. Septal PG and can present with epistaxis and nasal obstruction. It is also called a lobular capillary hemangiomas (LCH) as histologically, pyogenic granuloma consists of circumscribed aggregates of capillaries arranged in lobules. Granulomatous lesions like Wegners granulomatosis, sarcoidosis and also tumours like squamous cell carcinoma, malignant melanoma can all mimic a septal PG. Surgical excision is the treatment of choice and diagnosis can be confirmed by histopathological examination. Complete resection can decrease the rates of recurrence. Here we reported a case of pyogenic granuloma of the nasal septum in a young female patient.

**Keywords:** PG, Nasal septum, LCH

#### INTRODUCTION

The inflammatory capillary hemangioma of the nasal septum are uncommon vascular lesions of the adults. They are also known as the as bleeding polyp, pyogenic granuloma, lobular capillary hemangioma, which is seen on skin and mucosal surfaces that are prone to bleed on touch or probing.1 The most common sites are the oral mucosal surfaces and other areas of exposure like the fingers, face and nasal cavities and tongue. The most common presenting symptom is epistaxis followed by nasal obstruction.<sup>2</sup> Complete surgical excision with removal of the base is sufficient and recurrence is rare. The other differential diagnosis for septal pyogenic granuloma include other vascular lesions like hamartomas, venous hemangioma, arteriovenous malformation, granulomatous lesions like Wegners granulomatosis, sarcoidosis and tumours likes squamaous cell carcinoma and malignant melanoma.<sup>3</sup>

### **CASE REPORT**

A 24 year old female came to our OPD with 1 month history of recurrent anterior epistaxis and mass in the right nasal cavity. History of nose picking present which led to 2-3 episodes of profuse bleeding. Patient had no other medical condition and was not on any other medications. Anterior rhinoscopic examination of the right nasal cavity showed a 1×0.5×1 cm sized pinkish, polypoidal haemorrhagic pedunculated mass arising from the anterior aspect of the septum which bled easily when touched, suggestive of pyogenic granuloma (Figure 1). Diagnostic nasal endoscopy showed no other lesions in the nasal cavity and blood investigations were normal. The lesion was excised under general anesthesia with complete removal and cauterization of the base, haemostasis achieved. The post operative period was uneventful. The excised lesion was sent for histopathological examination (HPE) which showed lobular mass closed by stratified squamous epithelium with stroma showing fibroconnective tissue with capillaries (Figure 2 and 3).



Figure 1: Right nasal cavity-pinkish, polypoidal, haemorrhagic, pedunculated mass arising from the anterior aspect of the septum.



Figure 2: Excised septal pyogenic granuloma.

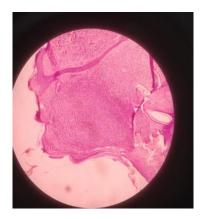


Figure 3: Histopathological examination showing vascular thinned lesion composed of small capillaries arranged in lobular fashion, consistent with pyogenic granuloma.

The patient presented no complications and remains asymptomatic on follow up with no recurrence three months after surgery.

#### **DISCUSSION**

The term, pyogenic granuloma, first coined in 1974 by Haetzell, is a misnomer, as there is no infective etiology associated with it and HPE shows abnormal proliferation of capillaries in lobular pattern.<sup>4</sup> Hence, the term LCH as described by Mills et al was more appropriate.<sup>5</sup> The clinical variants of PG were mucosal PG, disseminated/multiple PG and congenital PG.

Mucosal PG most commonly affects the head and neck, but less common in the nasal septum. Most common sites of a nasal PG was from the anterior nasal septum (the little area or Kiesselbach plexus), followed by the turbinates. Other sites include the maxillary sinus and the roof of the nasal cavity. It occurred more in adult women than in men, with a ratio of 2:1 and was relatively common in male children. It

The pathogenesis of septal pyogenic granuloma still remained unclear. Traumatic and hormonal (pregnancy or oral contraceptives) factors were the most commonly proposed aetiology of these tumors.7 In adults, LCH occured in as many as 5% of all pregnant women, which suggested growth of PG was promoted by increased levels of estrogen and progesterone during pregnancy.8 These lesions mostly regressed in the post-partum period, correlating with the hormonal theory. Most theories on pathogenesis revolved around PG as a hyperplastic, neovascular response to an angiogenic stimulus with imbalance of promoters and inhibitors.9 Studies showed history of nasal injury such picking/packing/piercing, nasogastric tube insertion, contributed to about 7% to 15% of nasal pyogenic granulomas. When the nasal mucosa was affected, the lesions typically involved the anterior portion of the inferior turbinate or Little's area, which were the most common sites of trauma.2 Other suggested etiologies included viral oncogenes, microscopic arteriovenous malformations and overproduction of angiogenic growth factors like vascular endothelial growth factor, transcription factors (pATF2 and pSTAT3) and decorin.<sup>8</sup>

Symptoms of nasal/septal pyogenic granuloma were commonly unilateral epistaxis (90%) followed by nasal obstruction (35%), rhinorrhoea and facial pain (10%).

Thorough nasal examination with anterior rhinoscopy and diagnostic nasal endoscopy was needed to evaluate septal PG but the confirmatory investigation was HPE of the excised mass to rule out other differential diagnosis. Histologically, the PG consisted of a lobular pattern of capillary proliferation and a superficial ulcerative area. The histologic features of lobular capillary hemangioma were quite similar to those of rapidly involuting infantile hemangioma in that both lesions were composed of lobules of capillaries and surrounding fibrous tissue, but were different from those of venous vascular malformation (also known as cavernous hemangioma), which were composed of dilated blood-filled spaces lined by flattened endothelium. 7,10,11 For atypical lesions, along with HPE, immunohistological markers such as CD31 and CD34 markers can be used to highlight the endothelial cell linings suggesting strong angiogenetic potential of mass, thus narrowing down the diagnosis to PG. 12

Magnetic resonance imaging and computed tomography (CT) were additional investigation of choice to see if there was any bony involvement and to rule out

malignancies. CT features of LCH consisted of an intensely enhancing mass, whereas on a contrast-enhanced CT, an iso or hypoattenuating cap of variable thickness around the intensely enhancing mass noted. CT was useful in identifying the site of origin and the extent of the lesion. Whereas on a MRI, nasal PG appear as T2 hyperintensity and T1 hypointensity mass. In addition, the lesions tended to be highly vascular and demonstrate avid enhancement, but they did not have large draining veins. In rare cases, bony erosion may result from compression. In our case anterior rhinoscopy and endoscopy showed clear evidence of septal pyogenic granuloma, without any bony involvement and hence imaging studies were not necessary.

The recommended treatment of a septal PG was complete local excision of the mass with stripping the muco perichondrium and cauterization of the base, so as to prevent the recurrence and achieve haemostasis. <sup>14</sup> This technique was associated with low rates of recurrence. <sup>1,14</sup> Transnasal endoscopic resection was favoured nowadays as it gave better visualization of anatomical structures and helped in complete removal, thus decreasing the rate of recurrences. Recurrences were uncommon and no malignant transformation had been reported.

Literature showed the other recent developments in the surgical managements for PG included laser therapy, with or without prior embolisation, electro cautery, chemical cautery and cryotherapy. But studies showed that complete surgical excision had been the best method of treating pyogenic granuloma.<sup>15</sup>

#### **CONCLUSION**

Hence we have reported a case of septal pyogenic granuloma in a young female with a review of the literature. Thus septal PG/LCH is a rare lesion of unknown etiology, which should be recognised by its classic clinical and histopathological features and should always be considered a differential diagnosis in a patient presenting with history of recurrent epistaxis or any vascular lesions within the nasal cavity. Complete excision is the recommended treatment option, as spontaneous resolution of these lesion are less common.

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