Research Article ISSN: 2833-0382

International Journal of Family Medicine & Healthcare

A Review of 50 Cases of Nasal Septal Hemangiomas

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Received: 30 Jul 2026; **Accepted:** 01 Sep 2026; **Published:** 14 Sep 2026

Citation: Smail Kharoubi. A Review of 50 Cases of Nasal Septal Hemangiomas. Int J Family Med Healthcare. 2026; 5(1): 1-7.

ABSTRACT

Introduction: *Lobular capillary hemangiomas (LCH) are acquired benign vascular lesions of the skin and mucous membranes mostly affecting the head and neck region. Involvement of the nasal cavity is extremely rare and can manifest as epistaxis and nasal obstruction.*

Case Series: *In this case series, we present 50 cases of nasal septal hemangiomas. Epistaxis and nasal obstruction were the principal presenting symptoms. The median age was 32 years, with 33 females and 17 males. Three cases occurred in pregnant women. Nasal endoscopy revealed 43 lesions located on the anterior nasal septum (Kiesselbach's area) and 7 hemangiomas on the posterior part of the septum. CT scans were performed and showed well-defined, enhancing, soft-tissue density lesions without bone erosion. Treatment was surgical, consisting of hemangioma excision and hemostasis. Radiofrequency ablation was performed in 12 cases. Three recurrences were recorded at 12, 20, and 24 months, all of which were successfully re-operated. Histopathological examination confirmed the capillary hemangioma variety.*

Conclusion: *LCH are rare tumors of the nasal cavity. Treatment of these lesions is surgical with or without pre operative embolization.*

Keywords
Epistaxis, Nasal obstruction, Capillary hemangioma, Nasosinusal CT scan.

Introduction
Hemangiomas are categorized to capillary, cavernous and mixed types according to the histopathological features. Lobular capillary hemangioma, also known as pyogenic granuloma, is uncommonly seen localized in the nasal cavity.

Lobular capillary hemangioma was first described as human botryomycosis by Poncet and Dor in 1897 [1].

In 1904, Hartzell introduced the term "pyogenic granuloma", suggesting a bacterial origin in its pathogenesis [2]. However, Bhattacharyya et al. refuted these data, questioning both its infectious nature and its truly granulomatous character [3]. A`fter 1980, Mills et al. proposed the term "lobular capillary hemangioma" to replace "botryomycoma" [4].
In nasal septum capillary hemangioma or lobular capillary hemangioma (LCH) is the most frequent variety.

Recurrent epistaxis and nasal obstruction constituted the primary initial symptoms. CT scans and MRI facilitated the diagnosis of these apparently "benign lesions" and allowed for the assessment of tumor characteristics, such as origin, dimensions, extension, and vascular specificity.

The treatment for nasal septal hemangioma is surgery, which consists of wide removal of the lesion with clear mucosal margins. Recurrence is rare

Materiel and Methods
This study is a retrospective analysis conducted between January 1998 and December 2025, evaluating medical records of patients diagnosed with nasal septum hemangiomas.

Patient assessment included a detailed clinical history, specifying symptom onset (diagnostic delay), primary inaugural symptoms, past medical history, and ongoing treatments.

Nasal endoscopy was performed using either a rigid endoscope or a flexible fibroscopy, along with a comprehensive head and neck examination and a full skin assessment to search for associated cutaneous hemangiomas.

Contrast-enhanced computed tomography (CT) scans in both axial and coronal views were obtained for lesions larger than 10 mm.

Magnetic resonance imaging (MRI) was not routinely performed due to limited accessibility.

Treatment was exclusively surgical and consisted of hemangioma resection via an endonasal endoscopic approach following mucosal vasoconstriction (with naphazoline-xylocaine 5%) and perilesional infiltration.

Nasal packing was maintained for 48 hours postoperatively.

Radiofrequency ablation (using an ELLMAN generator) was performed in Cut-Coag mode at 35 to 45 W.

Finally, the surgical specimens were examined histopathologically to identify the specific histological variant of the hemangioma.

In the postoperative phase, antibiotic therapy (amoxicillin for 7 days) and etamsylate for 5 days were administered. Following pack removal, topical application of HEC ointment was prescribed for 2 weeks.

Clinical follow-up was scheduled at 1, 3, 6, and 12 months postoperatively.

Results

A retrospective review of patient medical records (archives and consultation registries) yielded 50 cases of nasal hemangiomas.

The mean time to consultation was 8.2 months (range: 1 to 24 months). This delay depended on the nature of the symptoms (epistaxis being the most alarming) as well as their intensity, frequency, or persistence.

Regarding age distribution, the median age was 32 years (range: 12 to 78 years).

Patients aged 20 years or younger accounted for 9 cases (18.0%), while those aged between 21 and 50 years represented 32 cases (64.0%). The remaining 18.0% (9 cases) were older than 50 years.

Our series included 33 females and 17 males, representing a female-to-male sex ratio of 1.94.

Three patients were pregnant at the time of presentation, at 1, 5, and 7 months of gestation, respectively.

Regarding medical history, comorbidities included hypertension in 11 cases, antithrombotic therapy in 7 cases, type 2 diabetes mellitus in 5 cases, and one patient with chronic kidney disease on hemodialysis.

Clinical and endoscopic examination revealed 43 lesions (86%) located on the nasal septum (anteriorly in Kiesselbach's area) and 7 hemangiomas (14%) of the posterior septal part.

Furthermore, the clinical examination identified 5 associated cutaneous angiomas: 2 on the face (one on the forehead, one on the cheek), 1 on the upper limbs, and 2 on the back.

Imaging studies, primarily consisting of maxillofacial CT scans, showed the lesion as a homogeneous, well-circumscribed tumor, most frequently arising from the septum, displaying mild contrast enhancement with no involvement of adjacent structures or bone lysis (Figures 1, 2).

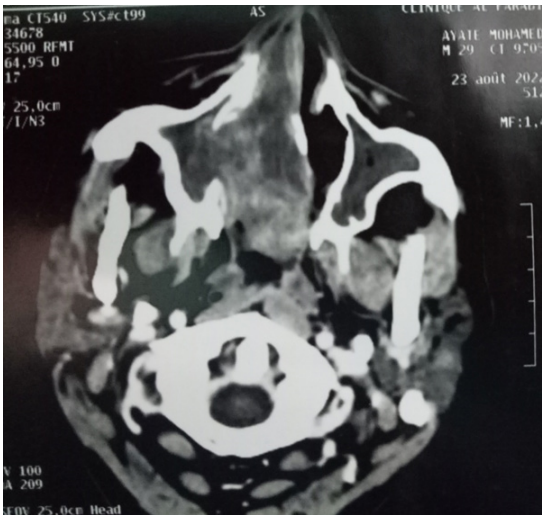

Figure 1: Nasosinusal Axial CT scan: large hemangioma of the right nasal cavity.

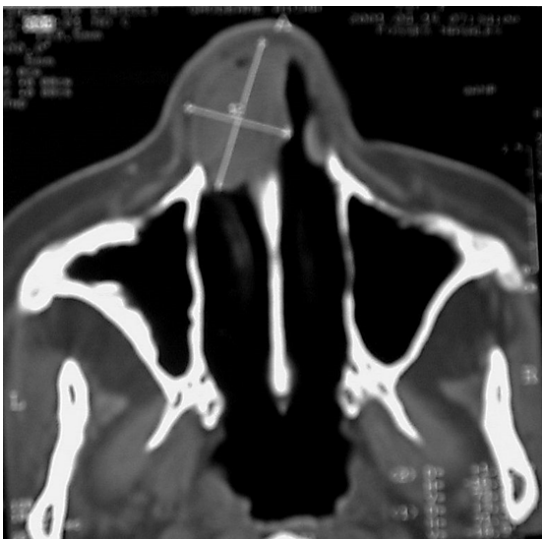

Figure 2: Nasosinusal Axial CT scan: right septal hemangioma (Little's area).

On MRI, the lesion appeared isointense on T1-weighted images and hyperintense on T2-weighted images, with homogeneous contrast enhancement. MRI provided optimal characterization of the lesion's tissue properties, which were highly suggestive of a vascular or hyper vascularized nature (Figure 3).

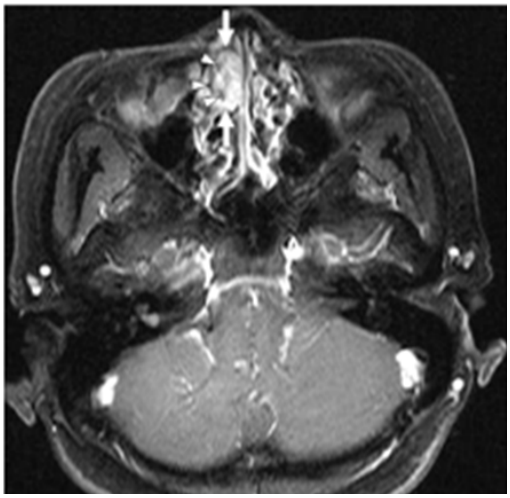

Figure 3: MRI T1W1 Lobular intensely enhancing mass (arrow). Capillary hemangioma of nasal septum (right side).

Regarding management, all patients underwent surgical treatment, which was performed under local anesthesia in 12 cases (24%) and general anesthesia in 38 cases (76%).

Radiofrequency ablation was utilized in 12 cases (those performed under local anesthesia), while the remaining tumor resections were carried out via an exclusive endonasal endoscopic approach.

The mean tumor size was 12 mm (range: 5 to 30 mm). Histopathological examination confirmed a capillary hemangiomas variety (lobular capillary hemangioma) in all series (Figure 4).

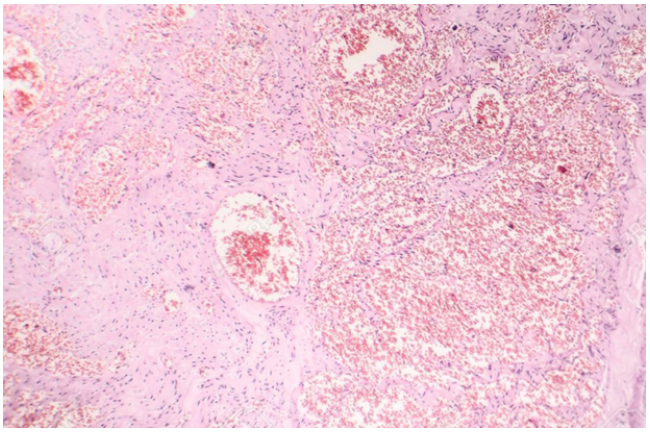

Figure 4: Nasal capillary hemangioma- histological section. (hematoxylin and eosin stained tissue HSE X10).

Regarding postoperative outcomes, pain was reported in 9 cases between the 3rd and 5th postoperative days, which resolved with analgesic therapy using paracetamol alone or combined with niflumic acid.

Additionally, epistaxis occurred following pack removal in 8 cases (16%), requiring repacking for 48 to 72 hours.

Local infection occurred in 3 cases (6%), requiring broad-spectrum antibiotic therapy and local care (nasal douching). Mild crusting rhinitis was reported in 5 cases (10%), which was managed with local care and topical treatments, leading to complete resolution within 6 months.

Furthermore, 3 recurrences were recorded: one after 12 months, one at 20 months, and one at 24 months. All recurrences were successfully re-operated via an endonasal endoscopic approach under general anesthesia.

Discussion

Lobular capillary hemangioma (LCH) of nasal septum is a rare entity commonly occurring in the skin and mucosa of the oral cavity. LCH is a rapidly growing benign vascular lesion which should now be considered in the differential diagnosis of a unilateral bleeding lesion in the nasal cavity.

The actual incidence of this condition is may not be known.

Puxeddu reported that the most common site of a nasal lobular capillary hemangioma is the nasal septum (55.0%), followed by the nasal vestibule (17.5%), inferior turbinate (12.5%), middle turbinate (7.5%), and uncinate process (7.5%) [2].

Age and sex distribution shows a female predominance, with the highest incidence occurring during the third decade of life. In fact, there is a distinct predilection for women of reproductive age, and an association with pregnancy has been reported in 2% to 5% of cases, mostly observed during the last two trimesters [5].

Roberto found in their retrospective study that the peak incidence was in the fifth decade of life [2]. In pediatric cases, the majority of the children were older than 5 years old.

In our study the median age was 34 years with range 12 to 78 years. 32 patients (64%) aged between 21 to 50 years and 9 (18%) were older than 50 years.

Therefore, nasal septal capillary hemangioma remains a disease primarily affecting young adults, predominantly between the third and fifth decades of life.

The principal location of lobular capillary hemangioma is the habitual nasal location is the nasal septum. It is due to the important vascularization of this structure especially the Little area. Other locations include also vestibule, inferior turbinate, middle turbinate and uncinate process.

Sinonasal LCH can be pedunculated or sessile, and is typically a solitary lesion; however, multiple sites of origin has also been reported [6].

A bilateral septal location of nasal hemangioma has been reported by Abdulqader [7]. They range in size from several millimeters to two centimeters in diameter [8].

Ma reported a rare case of cavernous hemangioma of nasal septum [9].

Proposed contributing factors for the development of lobular capillary hemangioma include trauma, nasal picking, pregnancy, hormones, oral contraceptive, viral oncogenes, arteriovenous malformations, and angiogenic growth factors

Fountarlis reported a case of septal hemangioma in 9 year old-boy secondary to recurrent nasal swabbing for COVID-19 screening, supporting the role of local trauma in the pathogenesis of these lesions [10].

Specifically, in this case, we consider that continuous trauma in the nasal septum by a nasal swab led to the formation of a hemangioma. This is the first case of LCH formation secondary to nasal swab collection for COVID-19 screening.

The diagnostic delay is variable, ranging from a few weeks to several months. It depends on the initial symptoms (with epistaxis being more alarming than progressive nasal obstruction), as well as the site and diameter of the lesion, and the accessibility of healthcare services.

Epistaxis was the most common presenting symptom in this series, followed by other intra-nasal symptoms including nasal obstruction and rhinorrhea. Extra-nasal symptoms such as facial pain and headache were less commonly ob served.

Endoscopic examination shows polypoidal, hypervascular masses of variable size, which may bleed on palpation.

The head and head examination, as well as a full skin assessment, is essential, as it can reveal single or multiple cutaneous hemangiomas associated with the sinonasal lesion.

In our study, we identified five associated cutaneous hemangiomas (2 on the face, 1 on the upper limbs, and 2 on the back). Similarly, Virbalas reported that patients with head and neck hemangiomas frequently presented with concurrent skin lesions, including 36.1% on the cheek, 12% on the forehead, and 9.6% on the scalp [11].

Our series also included three cases of nasal cavity hemangioma in pregnant patients. Nasal cavity capillary hemangiomas account for 7% to 10% of pregnancy-related pyogenic granulomas, which predominantly affect the oral cavity [6,12].

Computed tomography (CT) features typically include a well-circumscribed soft-tissue mass without calcification, displaying marked enhancement during the early phase and decreased enhancement during the delayed phase on dual-phase imaging.

Remodeling of the surrounding bone may also be observed. Lee analyzed the CT scan findings of six patients with lobular capillary hemangioma (LCH) and reported that bony changes included erosion in three (50%) patients and displacement in two (33.3%).

Specifically, bony erosion occurred at the nasal septum in one case, while it involved the inferior turbinate and the medial wall of the maxillary sinus in the remaining two cases [13].

On magnetic resonance imaging, capillary hemangioma appears hypo intense in T1 and hyperintense in T2 with a hypo intense rim with low voids, and areas of hemorrhage can be depicted [14].

Arteriography is not systematic, and should be performed only if embolization is considered. it reveals several nutrient pedicles and vascular blush.

The safety and indication of biopsy in nasal hemangiomas remain controversial.

This procedure is not routinely recommended due to the significant risk of profuse bleeding. Therefore, imaging studies must always be performed as the first step to accurately determine the lesion's origin, dimensions, extension, and vascular behavior. Small lesions (smaller than 10 mm) can undergo complete excisional biopsy.

Conversely, for larger lesions, a biopsy should only be considered if a malignant tumor is suspected, and must be performed under strict clinical monitoring with post-procedural nasal packing.

The role of preoperative angio-embolization remains controversial, with a notable lack of consensus in the literature. The majority of authors resect hemangiomas without prior embolization, as intraoperative bleeding can be effectively controlled using bipolar cauterization and nasal packing.

Computed tomography (CT) and CT angiography (CTA) are valuable tools to evaluate and predict the risk of significant hemorrhage.

Preoperative embolization is considered justifiable for large, expansile hemangiomas, those presenting with prominent vascular recruitment, or patients with a history of recurrent and intractable epistaxis.

In the nasal septum, all hemangiomas are of the capillary type (lobular capillary hemangioma, or LCH).

Microscopic histopathologic examination of LCH will show extensive endothelial proliferation with prominent vascular

spaces, capillaries in lobular arrangement, epithelial ulceration and a fibrovascular tissue base.

Cavernous hemangioma is uncommon in the septal site. In 1986, Bertrand reported a case of cavernous hemangioma located in Little's area [15]. More recently, Baki (2018) reported a case of septal cavernous hemangioma in a 78-year-old woman, which manifested as nasal obstruction and epistaxis [16].

Mixed hemangiomas are very rare in the nasal septum, combining both capillary and cavernous variants within the same lesion. In this context, Nouri reported a pedunculated mixed (capillary and cavernous) hemangioma of the nasal septum in a 30-year-old woman, arising from the postero superior septal region [17].

Nasal septal Hemangiomas in Child:
Hemangiomas (particularly the capillary variant) account for 7% of all benign head and neck tumors in children, and are predominantly located on the gums, lips, and tongue.

The sinonasal tract represents 15% to 20% of these cases.

More recently (2024), Lee reviewed 17 pediatric cases of sinonasal hemangioma, with ages ranging from 45 days to 14 years (mean: 9 years) [18].

After our research no additional pediatric cases were identified in the literature up to 2026.

The age at presentation varies from 1 month to 15 years, with a male predominance of 60%. The nasal septum remains the most frequent site [19].

Regarding our pediatric cases (aged 0–16 years), we collected 5 cases out of the entire series, accounting for 10.0% of the cohort with a median pediatric age of 14 years.

Epistaxis and nasal obstruction are the most common presenting symptoms. Given the rarity of pediatric hemangiomas, considering differential diagnoses is essential.

These include juvenile angiofibroma, nasal foreign bodies, dermoid cysts, paraganglioma, angiomatous polyps, and angiosarcoma.

Imaging studies and, more definitively, a primary tumor biopsy are crucial to confirm the diagnosis and rule out these alternatives.

We reported minor complications in our series, consisting of infection, epistaxis after nasal packing removal, and transient crusting rhinitis. These complications are non-specific and can be observed in routine nasal surgery.

After surgical removing nasal hemangioma cured without relapse. Authors reported a recurrence rate of 42 % with no malignant transformation potential [20].

In our cohort, three recurrences were observed at 12, 20, and 24 months, respectively. All were diagnosed following recurrent epistaxis, and a history of nose-picking was identified in one case. All patients underwent repeat surgery and have remained relapse-free.

Furthermore nasal hemangiomas can spontaneous or after incompletely excised complete regression particularly in pregnant patients following delivery [21].

Nasal lobular capillary hemangioma associated with pregnancy may regress following childbirth though postpartum lesions that do not regress completely may require surgery patients are generally advised follow-up.
The diagnosis of sinonasal hemangioma (LCH) is established based on a combination of clinical history, nasal endoscopy, and imaging studies, with or without a biopsy when an underlying malignant tumor is suspected.

When presenting with a nasal mass, epistaxis, and nasal obstruction, a methodical and rigorous diagnostic approach is recommended (medical history, nasal endoscopy, imaging, biopsy).

Therefore, the differential diagnosis should include inflammatory lesions such as sarcoidosis and granulomatosis with polyangiitis (formerly Wegener's granulomatosis); neoplastic lesions such as sinonasal papillomas, hemangiopericytoma, fibrous histiocytoma, leiomyoma, osteoma, squamous cell carcinoma, adenocarcinoma, esthesioneuroblastoma, and angiosarcoma; and even foreign bodies.

Liu reported a case of nasal septal acinic cell carcinoma initially misdiagnosed as an hemangioma following incomplete resection and subsequent pathological examination. In their case, endoscopy revealed a reddish-gray fleshy mass with tiny blood vessels on the surface, which strongly suggested an hemangioma and was initially managed as such [22].

Sinonasal organizing hematoma (SOH) can mimic a hemangioma and must be recognized. Its clinical development is often associated with a history of trauma, fungal infection, radiation therapy, recurrent epistaxis, or the use of antiplatelet agents.

Imaging typically shows an expansile mass with bony erosion and heterogeneous enhancement. Following surgical resection, histopathological examination of SOH reveals a combination of vascular ectasia, recent and old hemorrhage, edema, fibrin exudation, fibrosis, hyalinization, and neovascularization [23].

Surgery is the gold standard of treatment of LCH. Treatment involves surgical excision of the tumor including the mucosa and the underlying perichondrium under general and local anesthesia. Serci recommended resection including the underlying of the bone or cartilage [24].

After nasal mucous retraction and peri tumoral infiltrating the lesion was excised with a margin of healthy mucosa and a base cauterization to prevent recurrence.

Surgery can be performed via an external approach (such as lateral rhinotomy) or an endonasal endoscopic approach.

Endoscopic endonasal excision with complete electrodesication of the tumor base is considered the preferred treatment approach

The integration of modern instrumentation can facilitate this resection, including techniques such as coblation or microdebrider assistance.

The use of harmonic scalpel for surgical excision is possible respectively with less bleeding and less tissue injury [25].

Other technics where possible like electrocoagulation, cryotherapy, LASER (YAG, CO2), radiofrequency.

Radiofrequency ablation represents a valuable alternative for small lesions. In our series, this modality was utilized under local anesthesia in 12 patients presenting with lesions smaller than 10 mm.

Liang have successfully employed radiofrequency ablation in 15 patients with sinonasal hemangiomas, reporting no complications or recurrences after a follow-up period ranging from 6 to 48 months [26].

Postoperatively, an endonasal packing is maintained for 48 to 72 hours, and the administration of broad-spectrum antibiotic therapy along with analgesics is routine. Following pack removal, periodic local care is prescribed, consisting of nasal saline irrigations, topical healing agents, and hemostatic ointments.

Kinginger utilized intralesional injection of 50 mg of bevacizumab for the treatment of a recurrent septal hemangioma in a 67-year-old man who experienced two recurrences after surgery. The lesion measured 1.5 cm after two months and decreased to 3 mm 10 months after the injection with total resolution of initial symptoms. [27].

Conclusion

Hemangioma of the nasal cavity is an uncommon entity in otolaryngology practice, with a higher incidence among females than males. Lobular capillary hemangioma is the most frequent variety, particularly on the nasal septum. Epistaxis and nasal obstruction are the principal presenting symptoms. CT scans typically show well-defined, enhancing, soft-tissue density lesions without bone erosion. MRI provides greater precision, showing intense and homogeneous contrast enhancement. Arteriography with embolization is recommended in a few specific cases, depending on the tumor's origin, dimensions, and vascular supply. Surgery remains the cornerstone of treatment, consisting of lesion removal via endonasal endoscopy with clear mucosal margins.

Hemangiomas can mimic any benign or malignant nasal tumor; therefore, a comprehensive imaging workup and a biopsy (in suspicious cases) are recommended prior to definitive surgery, along with early case discussion within a specialist multidisciplinary team.

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