Original paper

Haemangioma of the Nose and Paranasal Sinuses

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Abstract

Background: Haemangiomas, are rapidly growing benign vascular tumors rarely seen in paranasal sinuses. They are of two major types, capillary and cavernous depending on the dominant vessel size on microscopy. The sinonasal cavity is an uncommon site of haemangiomas of the head and neck. Most nasal haemangiomas arise from the nasal septum or vestibule and are of lobular capillary type. Only a few arise from lateral wall of the nose or the inferior turbinate and these are usually cavernous.
Objective: To assess the sinonasal haemangioma and to increase awareness about its clinical presentation and management.
Methods: A retrospective study was conducted in the Department of ENT at Al-Hussein Teaching Hospital, Karbala, from December 2013 to December 2015. Ten cases of sinonasal haemangiomas were collected. Evaluation of the patients done according to age, sex, occupation, complaints regarding headache, nasal obstruction, epistaxis, nasal discharge, feeling of nasal mass ,radiologic assessment and pathologic diagnosis . Endoscopic sinus surgery was performed under general anesthesia for all patients, the masses excised completely and sent for histopathological study.
Results: Ten patients were collected. Four patients were males and six patient females with female to male ratio 1.5:1. The age range was 14 to 50 years with a mean age of 32 years. Nine patients (6 females) and (3 males) presented with nasal obstruction and epistaxis. Four patients with left sided nasal obstruction, five patients with right sided nasal obstruction, and only one patient with absolute bilateral nasal obstruction without epistaxis**.**
Conclusion: Sinonasal haemangiomas are extremely rare especially cavernous type. Sinonasal tumors with bone erosion should not always be presumed to be malignant .Endoscopic sinus surgery with complete removal is the treatment of choice.
Keywords: Nasal lobular capillary haemangioma, paranasal sinuses, cavernous haemangioma,

Introduction

Haemangiomas, the commonest vascular lesions of the head and neck, are rapidly growing benign vascular tumors. Although soft-tissue haemangiomas are relatively common in the head and neck, they occur infrequently in the sinonasal cavity [(1)]. They are of two major histopathology types, lobular capillary and cavernous depending on the dominant vessel size on microscopy [(2,3)]. The exact etiopathogenesis is unknown, but are commonly seen during pregnancy, in patients on oral contraceptive pills or patients with a history of trauma [(4)]. Most common location is the head and neck region. Nearly 76.9% of cases seen in children occur in this region with the gingiva, lips, and tongue being the most common sites and nasal cavity a rare site of origin [(5)]. Nasal lobular capillary haemangioma occurs in children 10 months of age to adults in their 7th decade with a mean age of occurrence being around the 4th decade and has no sex predilection. Most nasal haemangiomas

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arise from the nasal septum or vestibule and are of lobular capillary type. These lesions show benign capillary proliferation with distinct lobular architecture and the stroma may be fibro-myxoid/oedematous with acute or chronic inflammation [6, 7].

Cavernous haemangiomas are extremely rare so, they cause diagnostic problem [8] and rarely involve the nose and paranasal sinuses, with a very little data that describe them especially in relation to the maxillary sinus and lateral nasal wall[9,10,11].

Haemangiomas are often asymptomatic, [12] or present as reddish, polypoid or sessile mass causing nasal obstruction or recurrent epistaxis [9].

Differential diagnosis should include neuroma, inverted papilloma, mucoceles, angiofibroma and other benign or malignant vascular tumors [12]. Complete excision of the tumor is the treatment of choice and no recurrence has been reported following paranasal haemangiomas surgery [8].

Intraoperative hemorrhage related to haemangiomas is variable and it presents with minimal or massive bleeding [13]. Indeed, sudden loss of large quantities of blood is more with cavernous haemangiomas than with capillary type [14].

The aim of this study is to assess sinonasal haemangioma and to increase awareness about its clinical presentation and management.

Methods

A descriptive case series study was conducted in the Department of ENT at Al-Hussien Teaching Hospital, Karbala, from December 2013 to December 2015. Ten cases of sinonasal haemangiomas were collected. Evaluation of the patients done according to age, gender, occupation, complaints regarding headache, nasal obstruction, epistaxis, nasal discharge and feeling of nasal mass. Otolaryngolgical examination was carried out for all patients including anterior and posterior rhinoscopy and nasal endoscopy.

Appropriate radiological and laboratory investigations were performed for these patients as part of preparations for surgical intervention. CT and MRI images performed for patients to evaluate the site, size and extent of the pathology. A trial of medical treatment for some patients was performed (xylometazoline nasal spray, propranolol and steroids) to prepare patients for endoscopic sinus surgery.

Endoscopic sinus surgery was achieved under general anesthesia for all patients, the masses excised completely and sent for histopathological study. Cautery of the base done to control bleeding which varied from moderate to severe bleeding. Merocel packing done for some patients. All the patients followed up for about one year and all are doing well. Embolization of feeding vessels wasn't used.

During surgery, all masses were easily removed, except the cavernous one, found a swelling in bony nasal septum with a cavity filled by blood and surrounded by spongy thick bone so removal of the wall of a mass then mass removed gradually and good control of the severe bleeding by cautery of nasaoplatine, sphenoplatine vessels and edges of the mass.

Results

Ten patients were collected. Four patients were males and six patient females with female to male ratio 1.5:1. Figure 1.

The age range was 14 years to 50 years with a mean age of 32 years. Nine patients 90% (6 females 60%) and (3 males 30%) presented with nasal obstruction and epistaxis and only one male patient 10% presented with absolute bilateral nasal obstruction without epistaxis. Table 2. Four patients 40% with left sided nasal obstruction, five patients 50% with right sided nasal obstruction. Figure 2. And figure 3.

Regarding the site of origin of the masses, one patient presented with centrally located mass from the bony nasal septum causing complete nasal obstruction and the

histopathological result was intraosseous cavernous haemangioma. Figure 4and figure 5.

Five patients 50% presented with right sided nasal mass in three patients 30% originating from (the lateral wall, maxillary sinus, middle meatus) and in the other two 20% from the nasal septum.

The last four patients presented with left sided nasal mass, in three patients originating from the lateral nasal wall and in one patient originating from the nasal septum, the histopathological result in the nine patients was lobular capillary haemangioma. Table 2.

Figure 6 and figure 7 show the gross appearance of lobular capillary haemangioma.

Figure 8 and figure 9 show the microscopic appearance of lobular capillary haemangioma.

Discussion

In our study 40% of cases, the origin of haemangioma is from the nasal septum which is the common site of nasal haemangioma, a finding which agrees with M. N. Akiner, M. T. Akturk, M. Demirtas, and E. O. Atmis study, K. Akiyama, M. Karaki, Y. Osaki, J. Takeda, and N. Mori, study in that haemangiomas of the head and neck are common but those of the nasal cavity and paranasal sinuses are rare. The most common site for nasal haemangiomas is the nasal septum followed by the lateral wall and vestibule and they generally arise from the mucosa. (16, 17)

The two most common clinical findings of nasal haemangiomas in our study were recurrent epistaxis and nasal obstruction, the clinical presentation is thought to result primarily from the mass effect but varies by lesion site and size. The most common symptom for intraosseous haemangiomas is not epistaxis but nasal obstruction due to mass effect. This agrees with N. Iwata, K. Hattori, T. Nakagawa, and T. Tsujimura study. (18)

In our study, one of the cases of capillary haemangioma was pregnant lady and we waited for delivery to perform surgery which means that pregnancy may be a predisposing factor in the development of capillary haemangioma, this agrees with Yildirim D, Saglam O, Gurpinar B, Ilica T. study.(19)

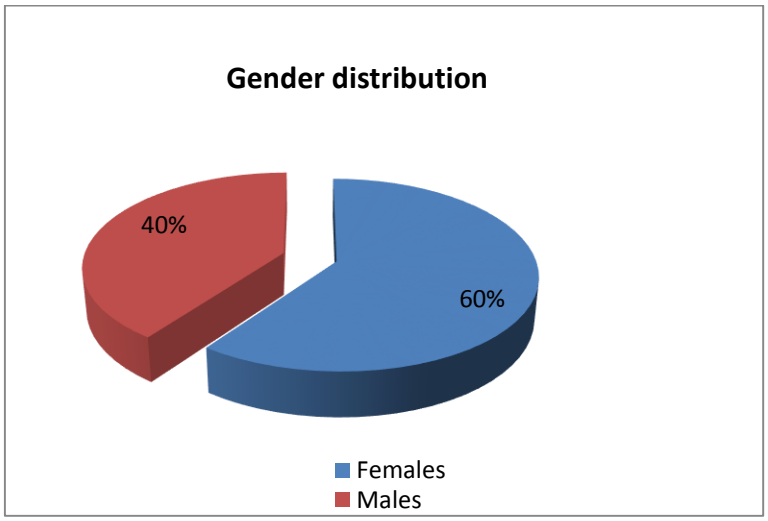

Figure 1. Gender distribution.

Table 1. Showing the clinical presentation of nasal haemangioma.

Number	Age	Sex	Clinical presentation	Right or left
1	14	F	Epistaxis Nasal obstruction	R
2	18	F	Epistaxis Nasal obstruction	L
3	19	M	Epistaxis Nasal obstruction	R
4	23	F	Epistaxis Nasal obstruction	R
5	30	M	Epistaxis Nasal obstruction	L
6	29	F	Epistaxis Nasal obstruction	R
7	35	F	Epistaxis Nasal obstruction	R
8	50	F	Epistaxis Nasal obstruction	L
9	37	M	Epistaxis Nasal obstruction	L
10	26	M	Nasal obstruction	Both

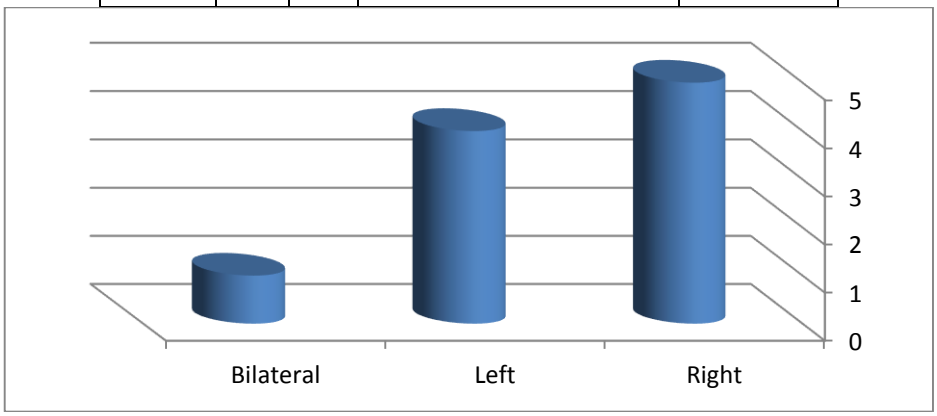

Figure 2. Side of nasal obstruction.

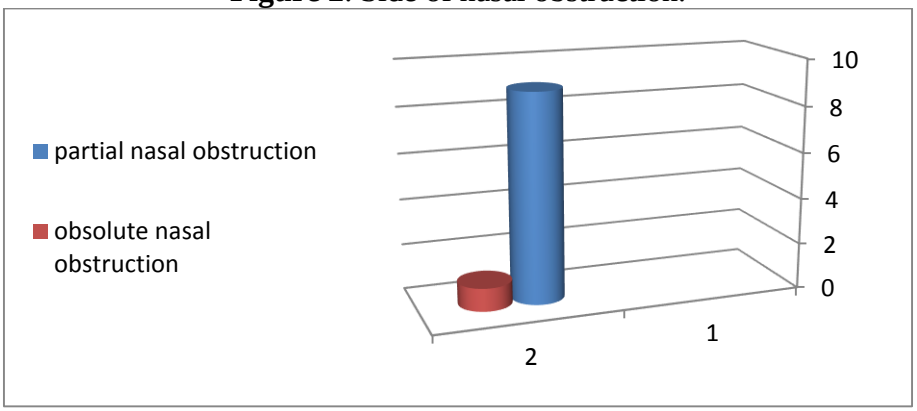

Figure 3. Degree of nasal obstruction.

Table 2. Showing the site and origin of nasal haemangioma.

number	pathology	Right or left	origin	location
1	capillary	R	Lateral wall	Anterior nasal cavity
2	capillary	L	Nasal septum	Anterior nasal cavity
3	capillary	R	Lateral wall, maxillary sinus	Maxillary sinus
4	capillary	R	Nasal septum	Anterior nasal cavity
5	capillary	L	Lateral wall	Anterior nasal cavity
6	capillary	R	Lateral wall	Middle meatus
7	capillary	R	Nasal septum	Anterior nasal cavity
8	capillary	L	Lateral wall	Ethmoid, Postnasal space
9	capillary	L	Lateral wall	Inferior meatus
10	cavernous	Both	Nasal septum	Intraosseous nasal septal bone

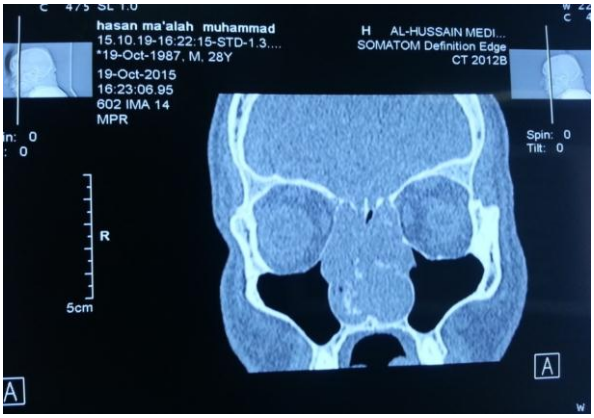

Figure 4. CT scan of a patient showing extensive involvement of nasal bony septum by cavernous haemangioma.

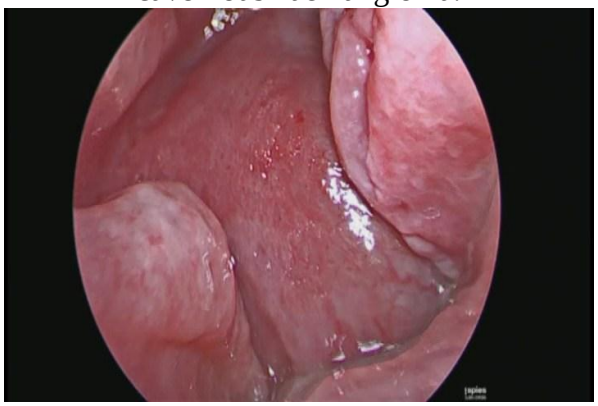

Figure 5. Cavernous haemangioma left nasal cavity with absolute nasal obstruction.

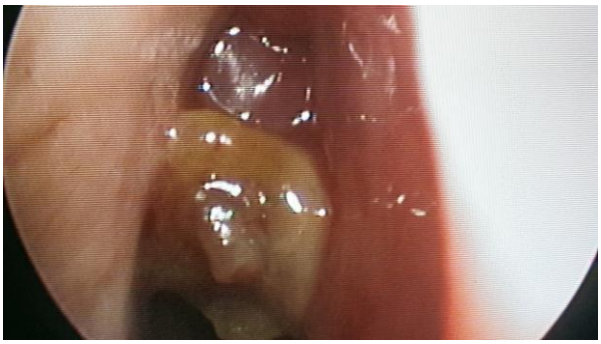

Figure 6. Capillary haemangioma of the nasal septum anterior part.

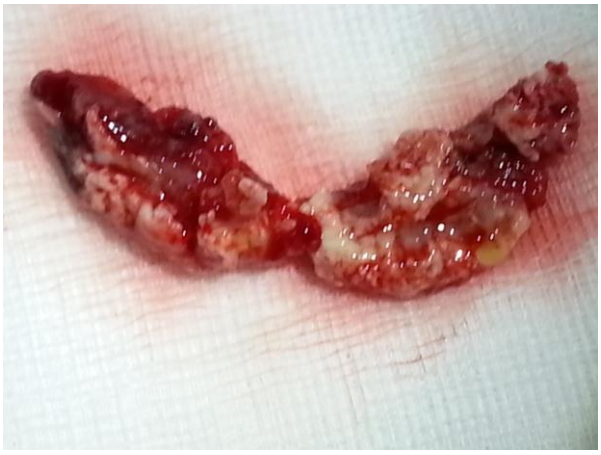

Figure 7. Gross appearance of capillary haemangioma. (One of the cases)

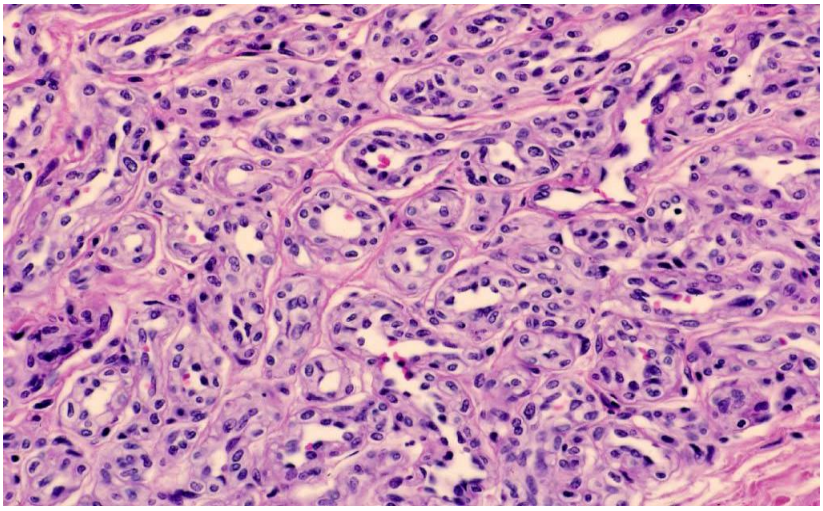

Figure 8. Capillary haemangioma, nasal septum, lobular proliferation of capillary sized vascular channels, H&E x 20x.

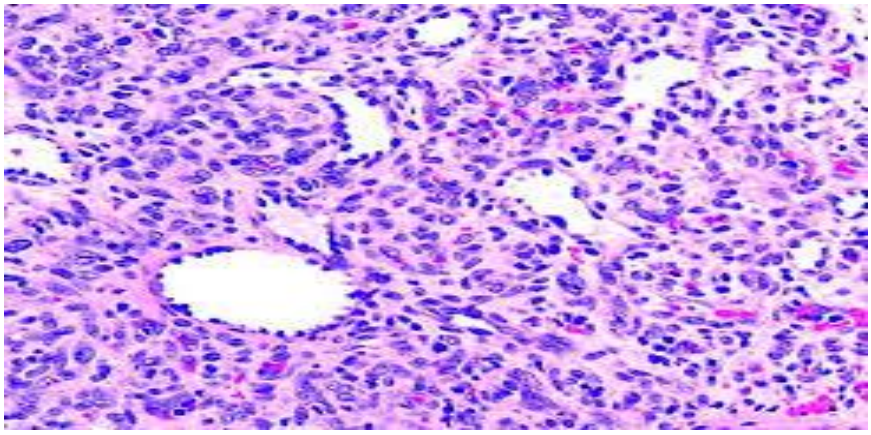

Figure 9. Capillary haemangioma feeding vessles. H&E, 20X.

In our study, the case with intraosseous nasal septal cavernous haemangioma was a male in the third decade and had a previous history of local nasal trauma, which may be a predisposing factor. This agrees with K. Takeda, Y. Takenaka, and M. Hashimoto study in that local trauma may be a cause of intraosseous haemangioma, because many patients with intraosseous haemangiomas have had a history of local trauma. [20]

Intraoperative hemorrhage related to haemangiomas is variable and it presents with minimal or massive bleeding. The expected sudden loss of large quantities of blood is more with cavernous haemangiomas than with capillary type. A finding which agrees with Afshin H, Sharmin R [21] study because the case of cavernous haemangioma in our study was so difficult to control bleeding in theater by endoscopic nasal surgery which is due to extensive involvement of nasal septum and nasal cavity with complete obstruction of the nose. Hemostasis achieved by cautery of the sphenopalatine artery and nasopalatine vessels and no embolization was used because good control achieved by endoscope.

We think that the most effective treatment to prevent recurrence of intraosseous haemangiomas is complete surgical resection because after one year follow up no recurrence documented in agreement with M. N. Akiner, M.T. Akturk, M. Demirtas, and E. O. Atmis study, K. Akiyama, M. Karaki, Y. Osaki, J. Takeda, and N. Mori, study, and K. Takeda, Y. Takenaka, and M. Hashimoto study. [16, 17, 20]

In our study, the sample size was small because of rarity of disease.

Conclusion

Sinonasal haemangiomas are rare benign neoplasms and that of cavernous type being extremely rare. Sinonasal tumors with bone erosion should not always be presumed to be malignant as cavernous haemangiomas can cause substantial bone erosion and should be considered in the differential diagnosis of sinonasal tumors. One of the most difficulties in the surgical management was intraoperative bleeding and in some patients required blood transfusion and the surgery performed in two sessions.

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