

Endobronchial capillary hemangioma a rare cause of hemoptysis

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ABSTRACT

Endobronchial capillary hemangioma is a very rare benign tumor in adults. The clinical presentation and management of adult capillary hemangiomas involving the tracheobronchial tree are not yet established. We present a case of an isolated capillary hemangioma of the right main bronchus detected during the evaluation of an adult male presented with hemoptysis.

KEY WORDS: Endobronchial, capillary hemangioma, hemoptysis

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Submitted: 09-Nov-2019

Accepted: 26-Jan-2020

Published: 31-Aug-2020

INTRODUCTION

A capillary hemangioma (also known as an infantile hemangioma, strawberry hemangioma, and strawberry nevus) is the most common variant of hemangioma which appears as a raised, red, lumpy area of flesh anywhere on the body.

Capillary hemangioma is an exceptionally rare histologically benign lesion in the adult tracheobronchial tree, which can present as hemoptysis, and it should be considered as a possible cause.

CASE REPORT

A 44-year-old male patient presented to Jaipur Golden Hospital casualty who was referred from Government Medical College with complaint of cough and hemoptysis ON/OFF for 10 days. Cough was sometimes associated with sudden shortness of breath. There was no history of tuberculosis, asthma,

diabetes, and hypertension. The patient is a smoker (1–2 cigarettes per day), nonalcoholic, and vegetarian by diet. Family history is also insignificant. On examination, Of respiratory system breath sound were heard bilaterally symmetrical. Routine investigations showed s/o thin-layer chromatography– 7900/mm³, hemoglobin, differential leukocyte count, erythrocyte sedimentation rate, LFT, KFT, and CBNAAT were normal. A chest X-ray was essentially normal [Figure 1]. Contrast-enhanced computed tomography (CT) of the thorax was done, which revealed a smoothly margined 15 mm × 14 mm size well-defined solitary pulmonary nodule in the right main bronchus [Figure 2]. Bronchoscopy was done, which showed a 3 × 2 cm pedunculated benign polypoid mass in the right main bronchus [Figure 3]. The patient was then referred to Jaipur Golden Hospital for further evaluation and treatment. Here, the patient was taken up for interventional video bronchoscopy, in which bronchoscopic resection of the polypoid mass was done with snare followed by cryo cauterization of

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How to cite this article: Chawla AK, Chaudhary G, Aggarwal M, Chawla MK, Chawla RK. Endobronchial capillary hemangioma a rare cause of hemoptysis. Lung India 2020;37:445-8.

Access this article online	
Quick Response Code: 	Website: www.lungindia.com
	DOI: 10.4103/lungindia.lungindia_508_19



Figure 1: Chest skiagram of the patient before the procedure

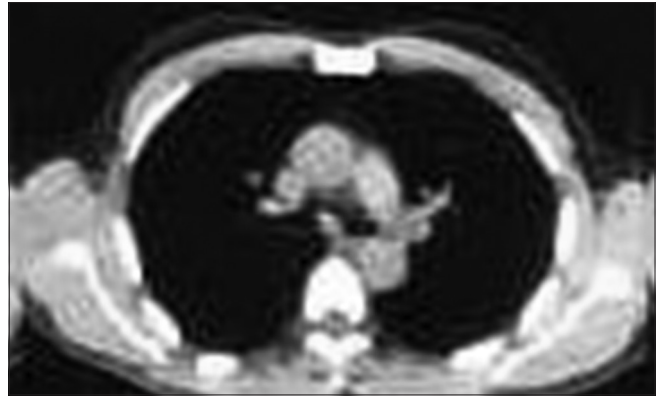


Figure 2: Computed tomography image of the patient before the procedure



Figure 3: Fibreoptic bronchoscopy showing mass in the right main bronchus

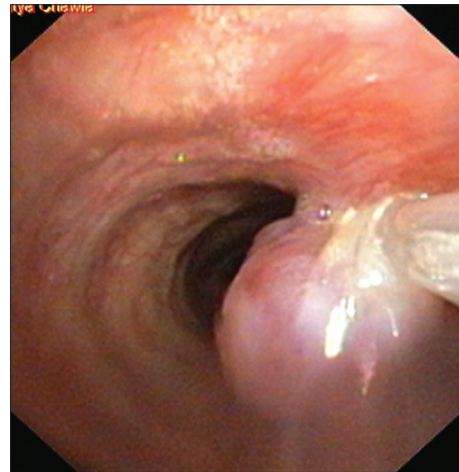


Figure 4: Mass in electrocautery snare

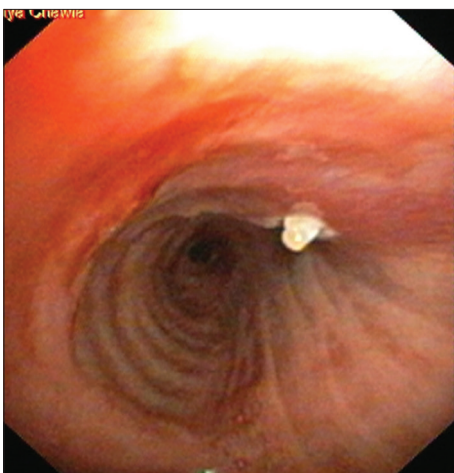


Figure 5: Residual mass post snare



Figure 6: Coagulation of residual mass with cryoprobe

the base [Figures 4-6]. Tissue was taken out and sent for histopathological examination, which revealed capillary hemangioma [Figure 7]. The patient was discharged in stable condition after 3 h with advice to follow-up.

DISCUSSION

Hemangiomas are benign tumors that usually appear a few weeks after birth, grow more rapidly during infancy and undergo spontaneous slow involution later in childhood. A capillary hemangioma is the most common variant of

hemangiomas. Although the pathogenesis is not completely understood, it is known that the rapid proliferation of the endothelial cells is characteristic.

Capillary hemangiomas of the tracheobronchial tree are very rare in both infants and adults. The clinical presentation and management of capillary hemangiomas involving adult tracheobronchial tree have occasionally been documented. According to the previous reports, tracheobronchial capillary hemangiomas may be smooth, lobular, or pedunculated lesions.

In adults, the most frequent causes of cough and hemoptysis are malignant tumors, infectious diseases (pneumonia, chronic bronchitis, and tuberculosis), cardiovascular disorders, and other inflammatory diseases. In cases with negative chest radiographs, bronchoscopy is often indicated; although, this intervention rarely clarifies the cause of these symptoms.

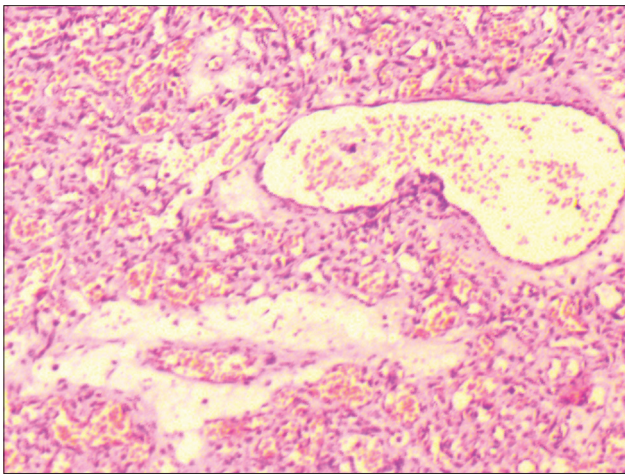


Figure 7: Hematoxylin and eosin staining showing bundles of capillaries, filled with blood, some of them are enlarged and separated by thin fibrous septae

Our patient also had smooth, lobular, and pedunculated lesions and presented with hemoptysis. Although very rare, bronchial capillary hemangiomas may be a cause of hemoptysis in adults. CT of the thorax and fiberoptic bronchoscopy (FOB) are immensely helpful in the management of this condition.

FOB is important in the diagnosis and treatment of hemangiomas located in the trachea and bronchi. While the diagnosis is usually evident after bronchoscopy, dynamic contrast-enhanced CT is a valuable noninvasive method for the evaluation of airway hemangiomas.

Airway capillary hemangiomas respond well to bronchoscopic intervention.

In our case, the patient responded very well to endobronchial electrocautery with snare resection and postresection, we did cryoablation at the root of the lesion.

Previous case reports in adults have described tracheobronchial capillary hemangiomas as smooth,^[1] pedunculated,^[2] or lobular^[3] lesions. In the past 50 years, the English literature [Table 1] has included seven different patients with a singular capillary hemangioma discovered during bronchoscopy; all but one presented with hemoptysis. Two patients presented with abnormal chest radiographs^[2,4] and only one correlated with the anatomic location of the endobronchial lesion. Although rare, capillary hemangioma of the tracheobronchial tree should be considered when observing distinct airway lesions in patients who present with hemoptysis.

CONCLUSION

Capillary hemangioma is a benign, rare, and treatable lesion that can cause hemoptysis in adult patients. The literature suggests that various modalities are

Table 1: Review of case reports detailing tracheobronchial capillary hemangiomas

DeKeraty, 2004 ^[5]	72-year-old male	Hemoptysis on coumadin	4×6 mm slightly raised pigmented lesion	APC and repeated procedure 1 month later for recurrent hemoptysis	No recurrent hemoptysis 3 months after last procedure
Zambudio <i>et al.</i> , 2003 ^[6]	66-year-old female	Massive hemoptysis	Irregular excrecent tracheal mass	IR catheter embolization of branch of the right intercostal artery	Negative bronchoscopy at 1 year follow-up
Irani <i>et al.</i> , 2003 ^[7]	72-year-old female	Cough, minor hemoptysis	Polypoid tracheal tumor 2-3 mm with hyperemic mucosa	Bronchoscopy and forceps biopsy	Asymptomatic at 1 year follow-up
Strausz and Soltész, 1999 ^[8]	55-year-old male smoker	Hemoptysis	2×2 mm reddish lesion with capillarized surface	Bronchoscopy with forceps excisional biopsy	3 months control bronchoscopy
Strausz and Soltész, 1999 ^[8]	70-year-old female	Chronic cough	5×4 mm red smooth surface lesion	Nd-YAG laser	Resolution of cough and normal control bronchoscopy 3 months later
Wigton and Rohatgi, 1979 ^[9]	74-year-old male smoker	Hemoptysis, RUL infiltrate	Tan, sessile rounded lesion	Bronchoscopy and excisional biopsy	No hemoptysis at 1 year follow-up
Harding <i>et al.</i> , 1978 ^[10]	67-year-old female smoker	Chest pain, hemoptysis	Small, red, and pinhead-sized growth	Bronchoscopy and excisional biopsy	4 months control bronchoscopy

RUL: Right upper lobe, APC: Argon plasma coagulation, IR: Interventional radiology, Nd-YAG: Neodymium – doped yttrium aluminium garnet laser

available for treatment; however, most cases have responded favorably to simple forceps excision through flexible fiberoptic bronchoscopy. Bronchial mucosal hemangiomas should be considered in the differential diagnosis of hemoptysis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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