Case Report

Endobronchial capillary hemangioma a rare cause of hemoptysis

Aditya Kumar Chawla¹, Gaurav Chaudhary¹, Manish Aggarwal¹, Madhav Kumar Chawla³, Rakesh Kumar Chawla²

¹Jaipur Golden Hospital, New Delhi, India, ²Saroj Super Speciality Hospital, New Delhi, India

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

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 marginated 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 cauterezation of
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 |
|-----------------------------|------------------|-------------------------------------------------|---------------------------------|---------------------------------|
| DeKeratry, 2004[9]          | 72-year-old male | Hemoptysis on coumadin                          | APC and repeated procedure      | No recurrent hemoptysis 3 months after last procedure |
| Zambudio et al., 2003[8]    | 66-year-old female | Massive hemoptysis                              | 1 month later for recurrent hemoptysis | Negative bronchoscopy at 1 year follow-up |
| Irani et al., 2003[7]       | 72-year-old female | Cough, minor hemoptysis                         | IR catheter embolization of branch of the right intercostal artery | Bronchoscopy and forceps biopsy |
| Strausz and Soltész, 1999   | 55-year-old male smoker | Hemothysis                                      | Bronchoscopy with forceps excisional biopsy | Asymptomatic at 1 year follow-up |
| Strausz and Soltész, 1999   | 70-year-old female | Chronic cough                                   | Nd-YAG laser                    | Resolution of cough and normal control bronchoscopy 3 months later |
| Wigton and Rohatgi, 1979    | 74-year-old male smoker | Hemothysis, RUL infiltrate                      | Bronchoscopy and excisional biopsy | No hemoptysis at 1 year follow-up |
| Harding et al., 1978        | 67-year-old female smoker | Chest pain, hemoptysis                          | 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

Lung India • Volume 37 • Issue 5 • September-October 2020
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.

REFERENCES
1. Strausz J, Soltész I. Bronchial capillary hemangioma in adults. Pathol Oncol Res 1999;5:233-4.
2. Sweetser TH. Hemangioma of the larynx. Laryngoscope 1921;31:797-806.
3. Cherez-Ojeda I, Tafur A, Guerrero, Mantilla R. An unusual but important cause of wheezing. Breathe 2007;3:301-3.
4. Harding JR, Williams J, Seal RM. Pedunculated capillary haemangioma of the bronchus. Br J Dis Chest 1978;72:336-42.
5. DeKeratry DR. Argon plasma coagulation for endobronchial hemangioma: A new treatment option for a rare cause of hemoptysis. J Bronchol 2004;11:254-6.
6. Zambudio AR, Calvo MJ, Lanzas JT, Medina JG, Paricio PP. Massive hemoptysis caused by tracheal hemangioma treated with interventional radiology. Ann Thorac Surg 2003;75:1302-4.
7. Irani S, Brack T, Pfaltz M, Russi EW. Tracheal lobular capillary hemangioma: A rare cause of recurrent hemoptysis. Chest 2003;123:2148-9.
8. Strausz J, Soltész I. Bronchial capillary hemangioma in adults. Pathol Oncol Res 1999;5:233-4.
9. Wigton RB, Rohatgi PK. Isolated bronchial capillary hemangioma: A rare benign cause of hemoptysis. South Med J 1979;72:1339-40.
10. Harding JR, Williams J, Seal RM. Pedunculated capillary haemangioma of the bronchus. Br J Dis Chest 1978;72:336-42.