Sir,

Pulmonary hamartoma is a rare tumor and has a 0.25% incidence in the population. They are the most common benign tumors of the lung but are uncommon causes of hemoptysis. They could be endobronchial or extrabronchial in location. The endobronchial hamartoma is the uncommon cause of hemoptysis, while extrabronchial hamartoma is not the known cause of hemoptysis.[1] Only 10% of the hamartomas are endobronchial and rest are peripheral.[2] These are more common in males of sixth to seventh decade age group.[3] We discuss a case of peripheral hamartoma which caused hemoptysis in a middle-aged group female. Hemoptysis was successfully treated by bronchial artery embolization (BAE). The patient was followed up for 6 months and was completely symptom free during that period.

A 40-year-old female presented to the emergency department with a history of major hemoptysis during the past 24 h. She gave a history of on–off hemoptysis from the past 2–3 months which was much lesser in amount compared to the present episode. General physical examination revealed pallor and tachycardia. Her hemoglobin was 7 g/dl, while rests of the laboratory parameters were unremarkable.

Chest X-ray revealed a patchy opacity in the right paracardiac region with eccentric calcification [arrow in Figure 1a]. Contrast-enhanced computed tomography (CT) of the chest was done which revealed an approximately 2 cm × 3 cm-sized round mass with eccentric clumped calcification in the posterobasal segment of the right lower lobe [arrow in Figure 1b and c]. Since it was believed that peripheral hamartoma does not cause hemoptysis, so it was decided to do bronchoscopy to look for any intrabronchial mass. Bronchoscopy was negative and no mass was seen [Figure 1d].

As no cause could be found on bronchoscopy, she was taken for emergency BAE with prior due informed and written consent. The possible benefits and adverse effects of the procedure were also explained to the patient. Digital subtraction angiography revealed tortuous right intercostobronchial trunk with deep parenchymal staining displaying a rounded appearance which was confirming to the location of the hamartoma [arrow in Figure 2a]. No other abnormal bronchial artery was identified. In view of these findings, BAE of the bronchial artery staining the hamartoma was done with polyvinyl alcohol of 300 µm size till complete stasis of flow [arrow in Figure 2b and c]. There was cessation of hemoptysis postprocedure.

The patient was discharged after 48 h and was completely asymptomatic. Follow-up till 6 months postprocedure did not reveal any recurrence of symptoms.

Histologically, hamartomas originate from the mesenchymal tissue and contain adipose tissue, cartilage, fibrous tissue,

Figure 1: Chest X-ray (a) showing rounded opacity with calcific shadow in the right paracardiac region (arrow). Coronal (b) and axial (c) contrast-enhanced computed tomography showing rounded lesion with eccentric “Popcorn” calcifications (arrows). Bronchoscopy (d) from right lower lobe reveals normal bronchi without any mass

Figure 2: Digital subtraction angiography (a) showing hypertrophic right intercostobronchial trunk with tumor staining in the right lower lobe. Embolization with the polyvinyl alcohol particles showing staining of the tumor (arrow in b). Postprocedure angiography displaying complete embolization of the abnormal arteries (arrow in c) with complete nonvisualization of the tumor blush
and epithelial elements.[3] They are more common in males with a peak incidence in the sixth to the seventh decade.[1] Most of the hamartomas are peripheral in location, are known to be asymptomatic, and are frequently diagnosed as an incidental finding on chest X-ray.[4]

Endobronchial hamartomas are known to be symptomatic. They can cause a variety of symptoms such as fever, cough, dyspnea, and uncommonly hemoptysis.[4] Massive hemoptysis due to endobronchial hamartoma has been reported in only three patients.[1] However, no case of peripheral/extrabronchial hamartoma causing severe hemoptysis has been reported.

Hamartomas appear as well-defined calcified masses on chest X-ray which may be associated with collapse and pneumonia. CT shows a well-defined calcified mass with or without fat component. The calcification is classically described as “Popcorn” calcification.[1]

The endobronchial mass may be poorly visualized on radiography. They appear as lesions with fat and calcification on CT, in addition to features of collapse and pneumonia. Bronchoscopy can be used to visualize the endobronchial masses and further helps in definitive diagnosis as it can be easily followed by biopsy. Bronchoscopy may be curative as various bronchoscopic techniques such as YAG laser, electrocautery, cryotherapy, and argon plasma coagulation may be used for the treatment of tumor.[5] Endobronchial electrosurgery is inexpensive and easy to perform for the complete resection.

BAE involves the identification of abnormal bronchial and systemic arteries, feeding the diseased lung and thereafter embolizing them with embolic agents.[6] The value of BAE in controlling massive hemoptysis is well documented.[6]

Our case had severe hemoptysis with peripheral hamartoma on CT and no other mass on bronchoscopy and CT. Therefore, BAE was done which was curative for hemoptysis.

We want to highlight the fact that our case had a peripheral hamartoma with hemoptysis which was treated with BAE. Therefore, there must be awareness of the fact that peripheral hamartoma can be a cause of severe hemoptysis which can be treated with BAE.

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.

Udit Chauhan, Subodh Kumar1, Khanak K Nandolia, Rahul Dev, Sudhir Saxena

Departments of Intervention and Diagnostic Radiology and 1Trauma and Emergency Medicine, All India Institute of Medical Sciences, Rishikesh, Uttarakhand, India
E-mail: drudit.chauhan@gmail.com

REFERENCES
1. Sarioglu N, Susur A, Goksel T, Paksoy S, Erel F. An unexpected cause of hemoptysis: Endobronchial lipomatous hamartoma. Med Arch 2014;68:65-6.
2. David O, Beasley MB, Minardi AJ Jr., Malek F, Kovitz KL. Management of endobronchial hamartoma. J La State Med Soc 2003;155:110-2.
3. Karabulut N, Bir F, Yuncu G, Kiter G. Endobronchial lipomatous hamartoma: An unusual cause of bronchial obstruction (2007: 7b). Eur Radiol 2007;17:2687-90.
4. Kim MH, Lee KH, Kim KU, Park HK, Kim YD, Lee MK, et al. Patient with positional wheezing due to endobronchial lipomatous hamartoma. Thorac Cardiovasc Surg 2011;59:188-90.
5. Miller SM, Bellinger CR, Chatterjee A. Argon plasma coagulation and electrosurgery for benign endobronchial tumors. J Bronchology Interv Pulmonol 2013;20:38-40.
6. Fujita T, Tanabe M, Moritani K, Matsunaga N, Matsumoto T. Immediate and late outcomes of bronchial and systemic artery embolization for palliative treatment of patients with nonsmall-cell lung cancer having hemoptysis. Am J Hosp Palliat Care 2014;31:602-7.