Sir,

Lung anomalies are mainly encountered as bronchial, vascular, and combined; although, it includes congenital cysts, accessory cardiac bronchus, tracheal or pigs bronchus, agenesis, scimitar syndrome, pulmonary arterio venous malformation, and bronchial atresia.[1] However, tracheobronchial anomaly of pigs bronchus or bronchus suis occurs rarely. Large airways anomalies are mostly found as incidental routine investigations like bronchoscopy. Tracheal bronchus found in 0.1%–2% of general population and usually asymptomatic, but at times often leads to repetitive infections and is kind of rare anomaly which is usually found in the right side and may be associated with other bronchopulmonary anomalies, tracheal stenosis, Down’s syndrome, or DiGeorge syndrome.[2] True tracheal bronchus arises 2 cm distal to the carina and varies up to 6 cm proximal from carina.[3] Although it is a congenital anomaly, the number of reported cases are quite less in recognized data bases till now.[4-6]

I would like to share our experience about an interesting case of 60-year-old female, housewife, hailing from sonapati visited to our OPD with provisionally diagnosed to have ABPA and BA in February (2016) by a general physician and taking treatment for the same. One month back when she presented to us in our OPD with chief complaints of on and off fever, shortness of breath and chest pain which had gradually aggravated over a period of a couple of months. However, she took treatment for the same from various private as well as government hospitals for symptomatic relief though the symptoms partially subsided. During her treatment, she was treated with inhaled corticosteroids with salmeterol and fluticasone 250 μgm along with antifungal itraconazole 200 mg OD for 15 days. Even after the treatment symptoms of the patient did not improve and developed dry cough, sore throat with nasal discharge. Besides this fever was also persisting and not relieved much by the medication. On detailed examination and work up, it was found that she didn’t had any history of any major illness or any surgery before. A sore throat worsened during the winter season and symptoms increased in exposure to dust and smoke. Patient IgE levels were done and were found to be 1051.00 kUA/L; however, serum precipitin was negative. Sputum for AFB, ZN stain was also found to be negative, though contrast-enhanced computed tomography thorax in coronal section revealed anomalous opening of upper lobe bronchus with infiltration [Figure 1], besides this, bronchiectatic changes over bilateral upper zone and emphysematous bulla predominantly over left upper zone also shown in axial section of lung window [Figure 2]. Bronchoscopy was performed to delineate the underlying pathology using fiber optic videobronchoscope manufactured by Pentax Medical, under local anesthesia with cricothyroid block without any sedation, which revealed the abnormal opening of right upper lobe bronchus [shown by the arrow in Figure 3] proximal to normal sharp and central carina. The bronchial opening was clear no stricture or intraluminal growth was found, except bronchial anthracosis, which was seen inside the anomalous upper lobe bronchus. Bronchial washing was taken from all the segments and was sent for the investigation including line probe assay for Mycobacterium tuberculosis. The fungal element was not detected on potassium hydroxide mount of bronchial washing besides this gram staining and culture was also negative. Line probe assay was found to be positive indicating toward tubercular infection of upper zone. The patient was treated with daily regimen of anti-tubercular therapy including rifampicin 450 mg (empty stomach), isoniazid 300 mg, pyrazinamide 1500 mg, ethambutol 800 mg as per weight band with pyridoxine 40 mg once daily. After a month in follow up, patient was improved symptomatically as well as her complaint regarding body ache with mild pyrexia also subsided.

Sandifort was the first one to describe the tracheal bronchus in 1785. Usually, anatomical right upper lobe bronchus bifurcates, and if this is displaced it is called as supernumerary bronchus which coincided with the
finding in our patient. Supernumerary bronchus can be intra- and extra-lobar and attains its vascular supply either form systemic or pulmonary artery system. Three theories have been postulated for abnormal bronchi they are the reduction, migration and selection theories reduction theory postulated a primitive pattern causing shrinkage of portion and portions of the original distribution. Migratory theory suggests bilateral symmetrical bronchi with fixed number of branches. Supernumerary bronchi develop in about 29–30 days and displaced are likely to occur in 32 days with further elongation and branching. Tracheal bronchus arises most commonly from the right tracheal wall during the embryonic life of a person. Incident of tracheal bronchus develops in approximately 0.1%–5%. It always found as an incidental finding during bronchoscopy. Congenital anomalies of the tracheobronchial tree are commonly originating from trachea or right and left main bronchus. The tracheal bronchus is more common with males. Tracheal bronchus further three types (1) vestigial tracheal diverticulum. (2) High apical lobe (3) fully developed supranumerary aerated tracheal bronchus.

The finding of tracheal bronchus was consistent with supranumerary aerated tracheal bronchus called as “apical tracheal bronchus.” Since it was reported that patient with down syndrome used to have higher incidence of the tracheal bronchus. There are also few evidence of tracheal bronchus associated with lung carcinoma and adenomatoid cyst. In study of case series of tracheobronchial variation studied in Turkish population, variation was more common in male 71.3%, unlike our case where it was found in female patient and among tracheobronchial variations, in right side, it was found to be 49.6% and 49.2% in left and in trachea it was found to be only in 1.2%.

Kubik and Muntener termed tracheal bronchus as eparterial (right side), hyparterial (left side) and pre-eparterial (arising proximal to carina), one simulating finding in our case. It was also reported that patient’s having tracheobronchial anomaly may be asymptomatic or may manifest with recurrent pneumonia, chronic bronchitis, and bronchiectasis due to insufficient drainage of involved bronchi. However the majority of the patients are symptomatic though does not take any medical intervention due to the lack of definitive diagnosis.

The key message for clinicians that congenital anomaly of the tracheobronchial tree may be a hidden cause of infective etiology of long standing illness, which needs thorough workup by using modern and advance diagnostic modalities to reduce diagnostic dilemma and further complications.

**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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**REFERENCES**
1. Zylak CJ, Eyler WR, Spizarny DL, Stone CH. Developmental lung
anomalies in the adult: Radiologic-pathologic correlation. Radiographics 2002;22:S25-43.
2. Cho HB, Kim HJ, Gong HY, Kim MG, Kim SH. Incidental left main bronchus obstruction during left-sided double-lumen tube intubation of a patient with an unrecognized tracheal bronchus: A case report. Medicine (Baltimore) 2016;95:e5674.
3. Laforet EG, Starkey GW, Scheff S. Anomalies of upper lobe bronchial distributions. J Thorac Cardiovasc Surg 1962;43:595-606.
4. Siegel MJ, Shackelford GD, Francis RS, McAlister WH. Tracheal bronchus. Radiology 1979;130:353-5.
5. Féofilov GL, Ossipov VP. Tracheal bronchi. Bronches 1970;20:274-83.
6. Ritsema GH. Ectopic right bronchus: Indication for bronchography. AJR Am J Roentgenol 1983;140:671-4.
7. Barat M, Konrad HR. Tracheal bronchus. Am J Otolaryngol 1987;8:118-22.
8. Keslar P, Newman B, Oh KS. Radiographic manifestations of anomalies of the lung. Radiol Clin North Am 1991;29:255-70.
9. Bertrand P, Navarro H, Causade S, Holmgren N, Sánchez I. Airway anomalies in children with down syndrome: Endoscopic findings. Pediatr Pulmonol 2003;36:137-41.
10. Ikeno S, Mitsuhata H, Saito K, Hirabayashi Y, Akazawa S, Kasuda H, et al. Airway management for patients with a tracheal bronchus. Br J Anaesth 1996;76:573-5.
11. Sato M, Hasegawa S, Shoji T, Wada H. Tracheobronchoplasty for resection of lung cancer arising from a tracheal bronchus. Ann Thorac Surg 2002;73:310-2.
12. Beder S, Küpeli E, Karnak D, Kayacan O. Tracheobronchial variations in Turkish population. Clin Anat 2008;21:531-8.
13. Kubik S, Muntener M. Bronchus abnormalities: tracheal, eparterial, and pre-eparterial bronchi. Fortschr Geb Rontgenstr Nuklearmed. 1971;114:145-63.

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