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LETTER / *Thoracic imaging*

CT presentation of left-sided accessory cardiac bronchus

Keywords Index terms; Bronchus; Congenital; Branching abnormalities; Computed tomography (CT)

Dear Editor,

The accessory cardiac bronchus (ACB) is the only true supernumerary variant bronchus with an incidence between 0.07% and 0.5% [1]. ACB usually originates from the inner wall of the intermediate bronchus or from the right main bronchus, almost opposite to the orifice of the right upper lobe bronchus [1—3]. To our knowledge, only a single ACB originating from a left bronchus has been reported in literature using bronchography [4].

A 20-year-old man underwent a chest computed tomography (CT) for preoperative assessment of a planned surgical aortic valve repair. His medical history included a congenital cardiopathy with double outlet right ventricle that required multiple surgical interventions up to the age of two years. He denied any pulmonary symptom since that time. Physical examination was unremarkable. CT revealed a large-mouthed diverticular structure originating and separated by a spur from the medial wall of the left main bronchus. Multiplanar and 3D CT reconstructions demonstrated a 6 mm large and 9 mm long bronchial structure followed distally by a 11 x 4 x 4 mm, partially aerated, intramediastinal tissue (Fig. 1). The bronchial distribution was otherwise modal, in particular no situs inversus was noted. Based on CT findings, a left-sided accessory

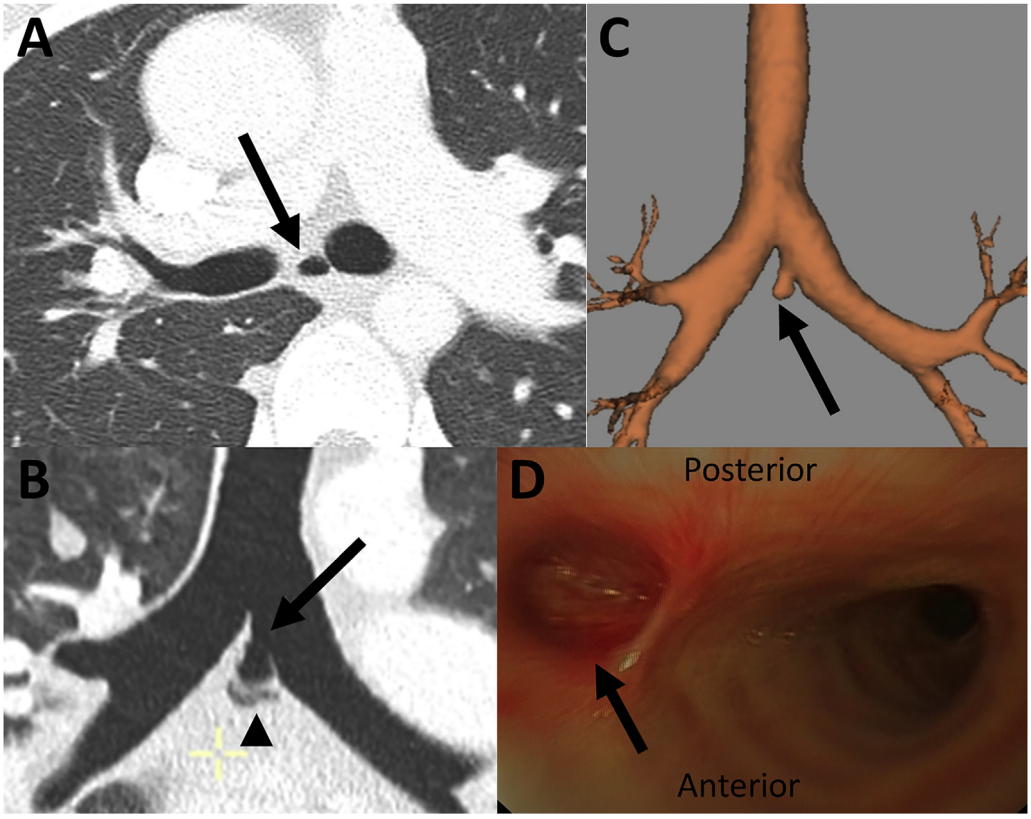

Figure 1. A 20-year-old man with left-sided accessory cardiac bronchus. CT images in the transverse (A) and frontal (B) plane show an accessory cardiac bronchus (arrows) arising from the left main bronchus and ventilating some vestigial aerated parenchyma (arrowhead). (C) Three-dimensional CT image using a volume-rendering algorithm shows consistent findings. (D) Photograph shows bronchoscopic view that confirms accessory cardiac bronchus (arrow) showing normal mucosa and cartilage rings within its wall.

cardiac bronchus (ACB) ventilating vestigial parenchyma was suggested. Fibroscopy confirmed the diagnosis by demonstrating a normal-appearing mucosa and cartilaginous rings within the congenital remnant.

The recognition of an ACB, whatever its lateralization, is important as it should be differentiated from acquired bronchial fistula, diverticulum or adenoid recess. ACB has a mean diameter and length of 8—9 and 12 mm, respectively. It is lined by a normal bronchial mucosa, has cartilage within its wall and is usually demarcated by a spur at its origin from the normal bronchus [1—3]. On the opposite, adeno- or esophago-bronchial fistulas usually demonstrate a neck at their origin and rather a pear-like shape. Traction diverticula may be located anywhere in the bronchial tree, usually in relation with a lymphadenopathy or lung parenchyma fibrosis. Adenoid recess is a glandular lumen filled by air and is much smaller than ACB. 2D or 3D reconstructions of CT images may aid to achieve the correct diagnosis [1,2]. Seventy-one per-cent of ACBs are of the diverticulum type with a blind extremity, but some develop into a series of small bronchioles, which may end in a vestigial or rudimentary bronchiolar parenchymal tissue (50%), a ventilated lobulus or rarely in cystic degeneration [1]. ACBs are almost always incidentally found on chest CT examinations, whereas acquired bronchial fistula are most often seen after surgery, in the context of cancer or in infectious lymphadenopathy (particularly tuberculosis). However, cough, hemoptysis, recurrent infections, empyema, aspergilloma, or even malignant transformation has been reported in patients with ACB [1—4]. Surgical resection may be indicated in patients with recurrent or severe symptoms. Other bronchopulmonary (including tracheal bronchus) or cardiac malformations may be associated [2]. In case of tracheobronchial branching malformations, cardiac malformation should be searched for and more particularly in young patients [5].

Disclosure of interest

The authors declare that they have no competing interest.

References

[1] Ghaye B, Kos X, Dondelinger RF. Accessory cardiac bronchus: 3D CT demonstration in nine cases. Eur Radiol 1999;9:45—8.
[2] Desir A, Ghaye B. Congenital abnormalities of intrathoracic airways. Radiol Clin North Am 2009;47:203—25.
[3] McGuinness G, Naidich DP, Garay SM, et al. Accessory cardiac bronchus: CT features and clinical significance. Radiology 1993;189:563—6.
[4] Lachowicz D, Trzebińska-Korniszewska A. Unusual left-side bronchial anomaly. Rofo 1978;129:271—2.
[5] Chassagnon G, Lefort B, Meot M, et al. Association between tetralogy of fallot and tracheobronchial branching abnormalities: a new clue for pathogenesis? J Am Heart Assoc 2018;7:e006921.

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