Stenotic bridging bronchus: An uncommon congenital airway anomaly

Sir,

The bridging bronchus is an uncommon congenital anomaly of the tracheobronchial tree which results due to abnormality in the branching of the airway during embryonic development where an aberrant bronchus arises from the left main bronchus and supplies the right lung.[1,2] It may be associated with various congenital malformations of various organ systems. Computed tomography (CT) scan of the chest is the modality of choice for making a diagnosis of bridging bronchus with added advantage of evaluation of other cardiopulmonary and skeletal abnormalities. Herein, we report a case letter of stenotic bridging bronchus in an infant with recurrent pneumonia.

A 6-month-old girl presented with complaints of recurrent pneumonia and noisy breathing since birth with repeated hospital admissions. Chest radiograph [Figure 1a] showed the collapse of the upper lobe of the right lung, with compensatory hyperinflation of the rest of the right lung. CT scan of the chest was performed for further evaluation, which showed a profoundly acute carinal angle with a short hypoplastic bronchus, supplying only the collapsed right upper lobe. There was short segment stenosis at the origin of the left main bronchus. An aberrant bronchus was seen to arise from the medial wall of the left main bronchus and crossing the midline, aerating rest of the right lung forming a pseudocarina, suggestive of type I bridging bronchus [Figure 1b and c]. Severe segmental stenosis was seen at the origin of this aberrant bronchus with hyperinflation of the right middle and lower lobes [Figure 1b and c]. Further, Type IIA left pulmonary artery sling was seen in relation to the site of narrowing of the aberrant bronchus [Figure 1d] with severely hypoplastic right pulmonary artery. Right sided aortic arch was also seen with aberrant origin of the right subclavian artery.

Bridging bronchus is an aberrant bronchus arising from the left main bronchus, partially or completely aerating the right lung.[1] Bridging bronchus arising

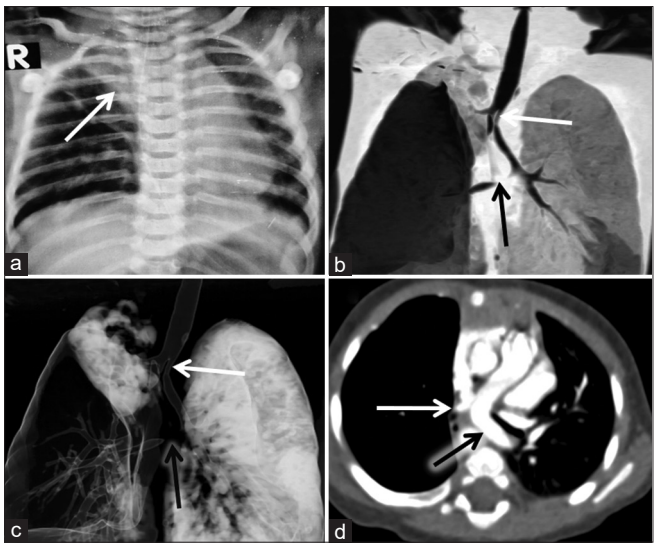

Figure 1: (a-d) Chest X-ray (a) showing collapsed right upper lobe (arrow) with compensatory hyperinflation of the rest of the right lung. Coronal minimum intensity projection (MinIP) image (b) and volume rendered (VR) image (c) showing acute carinal angle (white arrow) with stenotic bridging bronchus (black arrow) supplying the right lung and is arising from left main bronchus. Axial CT image (d) showing left pulmonary artery (black arrow) coursing posterior to the left main bronchus suggestive of type II left pulmonary artery sling. In addition, severely hypoplastic right pulmonary artery (white arrow) also seen

from the right main bronchus and aerating the left lung, although extremely rare, is reported.[2] There are two subtypes of bridging bronchus. In type I where the right upper lobe is supplied by the right bronchus and the aberrant bronchus intermedius supplies rest of the right lung. In type II, the right main bronchus is absent or ends as a diverticulum, and the entire right lung is aerated by the aberrant bronchus.[1] Type I bridging bronchus was seen in the index case. Up to 78% of cases of bridging bronchus are associated with type II left pulmonary artery sling,[1] which was present in the index case also. Associations have also been noted with bronchomalacia, cardiovascular, genitourinary, and gastrointestinal anomalies.[1] Children, usually infants present with respiratory distress or wheezing.[1,3] Chest CT is the modality of choice for making the diagnosis and is preferred over bronchoscopy as it provides intraluminal and extraluminal details, and helps in ruling out other causes.[4-7] Bridging bronchus is differentiated from a displaced tracheal bronchus by the presence of carina in normal position with the normal carinal angle in the tracheal bronchus and lower position of pseudocarina with obtuse angle in bridging bronchus.[1,5]

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.

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Conflicts of interest

There are no conflicts of interest.

S Raghuraman[1], Anmol Bhatia[1], Kushaljit Singh Sodhi[1], Joseph L Mathew[2], Akshay Kumar Saxena[1]

[1]Department of Radiodiagnosis and Imaging, Postgraduate Institute of Medical Education and Research, Chandigarh, India, [2]Department of Pediatrics, Postgraduate Institute of Medical Education and Research, Chandigarh, India.
E-mail: anmol_bhatia26@yahoo.co.in

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