A 6-DAY-OLD 1,720-g female with multiple congenital anomalies was found to have abnormal bronchial anatomy during otolaryngologic evaluation by rigid bronchoscopy. Computed tomography with three-dimensional maximal intensity projection reconstruction of the chest revealed that the trachea first bifurcated into the bilateral main bronchi that supplied the right and left upper lobes (A). Distal to this bifurcation was a narrow tracheal segment (1 mm in diameter at its narrowest; B) that extended to a second, inferior bifurcation consistent with the true carina (C). This bifurcation led to the left and right middle and inferior lobes.

Similar to the more common single tracheal bronchus, presence of bilateral upper lobe bronchi originating from the trachea may cause recurrent infection or persistent wheezing in infants and toddlers. Both of these anomalies share important anesthetic considerations. First, positioning of the endotracheal tube (ETT) tip must be superior to all tracheal bronchi to avoid lobar atelectasis and hypoxemia, because a misplaced ETT may either obstruct a tracheal bronchus or migrate into it. Fiberoptic bronchoscopy must be employed to confirm ETT placement; bilateral breath sounds or pilot balloon palpation do not guarantee adequate placement. Second, mucous plugging of the narrow conduit is likely and must be considered in the event of hypoxia or difficult ventilation. Depending on a patient’s specific anatomy, a smaller ETT may be considered. Finally, one lung ventilation may not be feasible in an infant with this anatomy due to an inability to block the multiple bronchi necessary to achieve complete unilateral isolation.

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Competing Interests
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