The incidence of lung cancer with bronchial anomaly is rare. Only a few cases of surgical resection for lung cancer with tracheal bronchus have been reported in the literature.\(^1,2\) We report a case of right upper sleeve lobectomy for lung cancer with tracheal bronchus.

**Clinical summary.** A 61-year-old man with a history of pneumonia in infancy had a linear shadow on chest x-ray films. Bronchoscopic examination revealed a bronchial anomaly of the right upper bronchus; the first branch to the right upper lobe originated from the distal trachea (tracheal bronchus), and the second branch originated from the distal right main bronchus (Fig 1). Fluoroscopy with forceps insertion showed that the first branch corresponded to B\(^{1+3}\) and the second to B\(^2\). The orifice of B\(^2\) showed mucosal irregularity and swelling. Brush cytology at the orifice revealed squamous cell carcinoma. Systemic screening, including computed tomography of the brain and abdomen and bone scanning, showed no apparent distant metastases. Pulmonary angiography showed no abnormality. The patient underwent right upper lobectomy with lymph node dissection through right posterolateral incision. Bronchi were initially divided at the origin of tracheal bronchus, the right main bronchus distal to the bifurcation of the tracheal bronchus, and the bronchus intermedius distal to B\(^2\) with the intent of anastomosing the bronchus intermedius with the right main bronchus. The frozen section showed cancer at the proximal stump of the main bronchus, and then the distal trachea and the right main bronchus were transected obliquely (Fig 2). After the stump was confirmed to be free of disease, the distal bronchus intermedius was anastomosed with obliquely divided trachea and the main bronchus with 3-0 Vicryl (Ethicon, Inc, Somerville, NJ) interrupted sutures. The tumor was 1.5 cm in diameter, and the proximal margin of the tumor was within 2 cm from the carina. Pathologic examination showed moderately differentiated squamous cell carcinoma (pT3 N0 M0). The postoperative course was uneventful. The patient is free from disease 32 months after the resection.

**Discussion.** Tracheal bronchus is an aberrant bronchus usually originating from the right lateral wall of the trachea.

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**Fig 1.** A, Bronchoscopic findings showed that the right B\(^{1+3}\) originated from the distal trachea (tracheal bronchus). B, The right B\(^2\) originated from the distal main bronchus, and the orifice of B\(^2\) showed mucosal irregularity and swelling.

with an incidence ranging from 0.1% to 2\%.\(^3,4\) The term is used to designate any bronchus originating from the trachea above the level of the main carina. Tracheal bronchus is a normal finding in sheep, swine, cattle, camels, goats, and giraffes.
such as laryngeal web, rib, and vertebra anomalies, tracheal stenosis, and congenital heart disease, are occasionally associated with this condition. Awareness of this condition may be important because the presence of a tracheal bronchus may complicate endotracheal intubation. Tracheal bronchus can be identified during bronchoscopic examination by the presence of an ectopic opening from the tracheal wall or diagnosed on computed tomography as a small round translucency posterolateral to the trachea.

Lung cancer in association with tracheal bronchus is rare, and only a few cases of surgical resection are reported in the literature. \(^1\) \(^2\) Sleeve lobectomy has seldom been reported. Anomalous pulmonary vessels are known to often accompany bronchial anomalies. Pulmonary angiography might be feasible to the technical assessment for pulmonary resection.

In the present case, because the cancer originated around the orifice of B \(^2\) along the main bronchus, bronchoplasty was initially intended by anastomosing the distal bronchus intermedius with the right main bronchus to reduce the discrepancy in diameters. However, the frozen section required further proximal resection. After the confirmation of a negative margin, the distal bronchus intermedius was anastomosed with the obliquely transected main bronchus and the distal trachea with some trimming. Although lung cancer with bronchial anomaly is not often encountered, bronchial anomaly at surgical resection should be managed appropriately to obtain a cancer-free margin and preserve reasonable lung function by using currently available bronchoplastic procedures.

REFERENCES


but a rare and usually incidental finding in human subjects. The occasionally seen tracheal bronchus can develop from any point above the main carina, but it is usually within the 2-cm range. It could be displaced or supernumerary, depending on the numbers of segmental bronchi of the anatomic right upper lobe bronchus.

Most cases of tracheal bronchus are asymptomatic, but some patients may experience recurrent pneumonia, chronic bronchitis, or bronchiectasis.\(^5\) Other congenital anomalies,