

Right aortic arch associated with Kommerell's diverticulum and aberrant left subclavian artery: an unusual cause of dysphagia

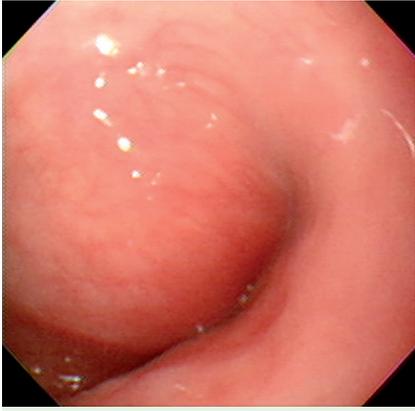


Fig. 1 Upper gastrointestinal endoscopic view showing extrinsic compression of the esophagus with significant narrowing of the esophageal lumen.

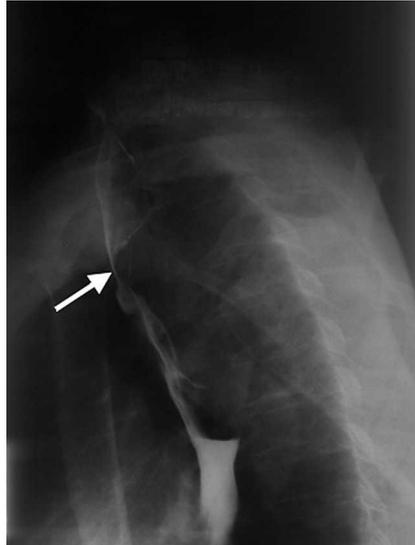


Fig. 2 Barium swallow showing posterior indentation of upper thoracic esophagus (arrow).

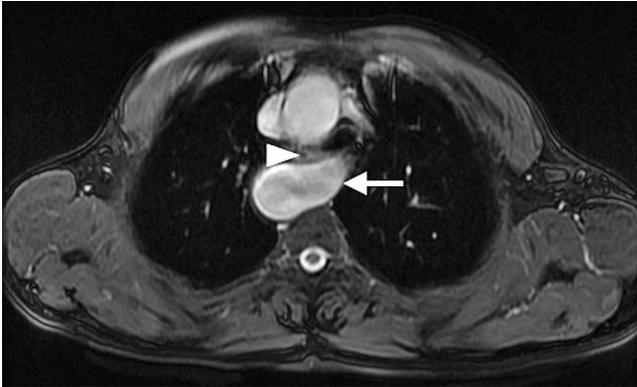


Fig. 3 Magnetic resonance (MR) imaging of the chest showing the esophagus (arrowhead) compressed by the Kommerell's diverticulum (arrow).



Fig. 4 **a** MR angiography showing Kommerell's diverticulum (arrow) from the descending thoracic aorta. **b** MR angiography showing Kommerell's diverticulum (arrow), from which the left subclavian artery (arrowhead) originates.

A 60-year-old man presented with a 2-day history of fever, chill, and swelling of the left knee. There had been occasional dysphagia to solids during the previous 1 year. Aspirate from the left knee showed an elevated white cell count, but no bacteria. Chest radiograph showed widening of the upper mediastinum. Upper gastrointestinal endoscopy showed extrinsic compression of the upper thoracic esophagus with normal overlying mucosa (● Fig. 1).

Barium swallow demonstrated posterior indentation of the upper thoracic esophagus (● Fig. 2).

Computed tomography and magnetic resonance (MR) imaging of the chest re-

vealed right aortic arch and Kommerell's diverticulum arising from the descending aorta with external compression of the esophagus (● Fig. 3).

MR angiography showed right aortic arch and the Kommerell's diverticulum from which the left subclavian artery originated (● Fig. 4).

Echocardiography revealed no cardiac anomaly. Conservative treatment was instituted because dysphagia was mild. After antibiotic therapy, the patient was discharged uneventfully on the 14th hospital day.

Dysphagia can be divided into the mechanical and the functional causes. Mechanical dysphagia results from an intrinsic or extrinsic process. An unusual mechanical cause of dysphagia is extrinsic compression of the esophagus by anomalies of the aortic arch and its main branches. Right aortic arch with aberrant left subclavian artery is an anatomical anomaly of the aortic arch, occurring in about 0.05% of the general population [1]. Kommerell's diverticulum develops from a vestigial remnant of the distal, embryologic left aortic arch. The majority of patients with right-sided aortic arches with aberrant left subclavian arteries are asymptomatic. In adults, dysphagia is the most often reported symptom. Congenital heart defects occur in 5% of patients with this aortic root anomaly [2]. The diagnosis may initially be suggested by chest radiograph and barium swallow. Barium swallow demonstrates anterior

or extrinsic process. An unusual mechanical cause of dysphagia is extrinsic compression of the esophagus by anomalies of the aortic arch and its main branches. Right aortic arch with aberrant left subclavian artery is an anatomical anomaly of the aortic arch, occurring in about 0.05% of the general population [1]. Kommerell's diverticulum develops from a vestigial remnant of the distal, embryologic left aortic arch. The majority of patients with right-sided aortic arches with aberrant left subclavian arteries are asymptomatic. In adults, dysphagia is the most often reported symptom. Congenital heart defects occur in 5% of patients with this aortic root anomaly [2]. The diagnosis may initially be suggested by chest radiograph and barium swallow. Barium swallow demonstrates anterior

displacement of the thoracic esophagus with a characteristic impression on the posterior esophagus. Angiography, CT, or MR imaging can be used to demonstrate any coexisting cardiac or vascular anomalies and to delineate the exact anatomy [3]. Treatment is conservative in asymptomatic patients, while surgery including resection of Kommerell's diverticulum and reconstruction of the aberrant subclavian artery is considered in those with persistent dysphagia or respiratory symptoms.

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