Dysphagia Lusoria Caused by an Aberrant Right Subclavian Artery: Vascular Ring

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Abstract

The most common embryological abnormality of the aortic arch is an aberrant right subclavian artery, which occurs in 0.5% to 1.8% of the population. Normally, this anomaly causes no symptoms, but sometimes it can produce a vascular ring. We had two severely symptomatic children with dysphagia and cough from early infancy. They underwent surgery via left thoracotomy and division of the aberrant right subclavian artery, releasing it from behind the esophagus. The patients had a good postoperative course and tolerated a regular diet without further symptoms of dysphagia ***(Iranian Heart Journal 2010; 11 (3): 40-42).***

Key words*:* vascular ring ■ dysphagia lusoria ■ aberrant right subclavian artery

Case reports

A two-year-old girl with a history of progressive dysphagia and vomiting from her first month of life was referred to our center.

An esophagogram (Fig. 1, a, b) revealed a notching of the posterior upper esophagus from an extrinsic compression.

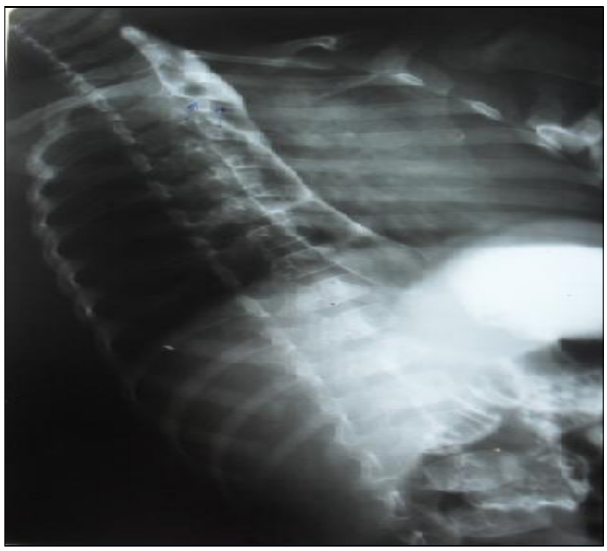

Fig. 1(a, b). Esophagogram: a notching of the upper esophagus from an extrinsic compression

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A CT angiography confirmed the aberrant origin of the right subclavian artery (Fig. 2, a-c), arising from the aorta distal to the normal left subclavian artery.

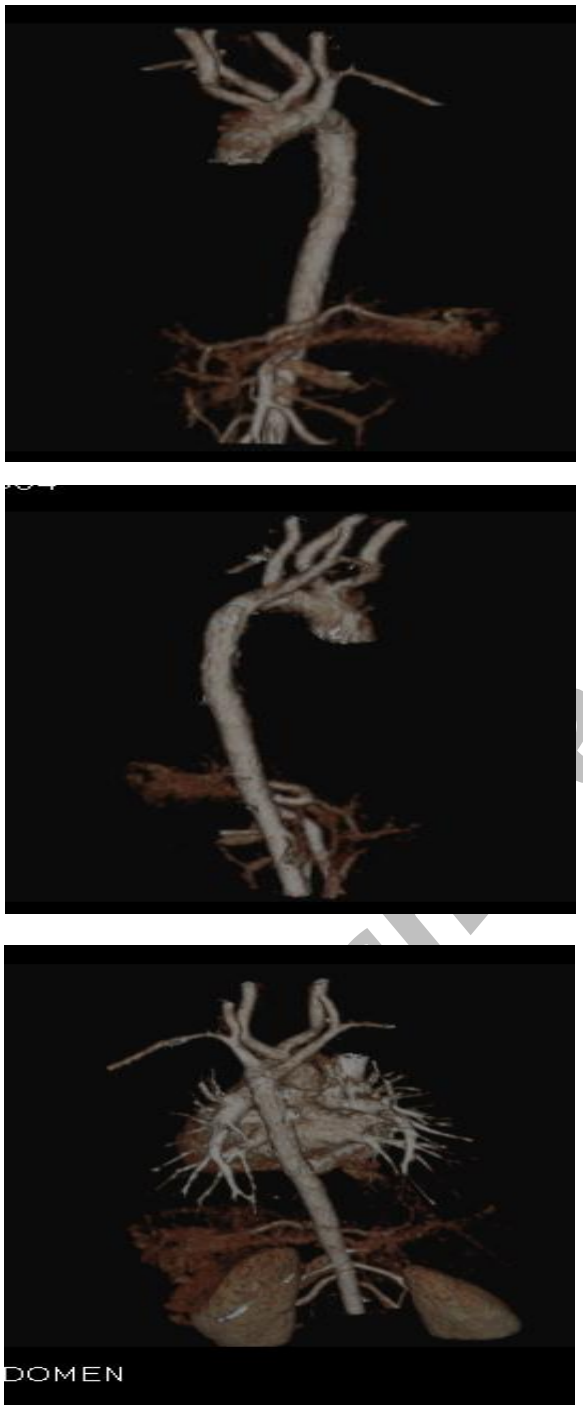

Fig. 2 (a-c). CT Angiogram: The aberrant right subclavian artery arises from the aorta distal to the origin of the left subclavian artery and passes behind the esophagus.

The artery had a retroesophageal course, which was causing compression of the esophagus. Mild dilatation of the right subclavian artery was noted (Kommerell's diverticulum), and both carotid arteries had a common trunk. The aortic arch was left-sided.

Case two

A three-year-old boy with a history of dysphagia and vomiting from early infancy and cough and dyspnea beginning recently was referred to our hospital. Barium contrast examination of the esophagus showed an impression, and a computed tomography scan and angiography confirmed the aberrant right subclavian artery with a left aortic arch. Due to the persistence and worsening of the symptoms, surgical correction was recommended.

Surgical Technique

Under general anesthesia, left lateral thoracotomy was made through the third interspace. The thymus was partially dissected away and the aortic arch was explored.

The right subclavian artery arose in an anomalous fashion from the posterior aspect of the left side of the aortic arch and then coursed upward and to the right behind the esophagus. Between this anomalous artery and the vertebral column, the thoracic duct was clearly visible and could be left undisturbed during the subsequent dissection. The right subclavian artery was extensively liberated from its bed and was doubly ligated and divided near the aortic arch. The distal portion of the artery was permitted to retract beyond the esophagus.

Discussion

Although most cases of this anomaly are asymptomatic,[1-3] symptoms may appear when a ring encircles the trachea or the esophagus.[4,5] This anomaly, first reported in 1794 by London physician David Bayford, was originally described as "dysphagia by

freak nature", and is commonly referred to as dysphagia lusoria.[3,6,7] When the symptoms are intractable, surgical correction should be considered. In children, ligation and division of the right subclavian artery via left thoracotomy seems a good procedure. In adults, however, anastomosis of the distal portion of the right subclavian artery to the right common carotid artery is suggested.[3,4] This can be done via the right supraclavicular approach, median sternotomy, or thoracotomy.

In our patients, we did not observe right arm ischemia or dysfunction. Dysphagia and cough disappeared after the operation and the patients tolerated a regular diet.

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