A 68-year-old man was admitted to our hospital for chronic dysphagia for solid foods and weight loss. Clinical examination on hospital admission did not show any significant alterations. Specifically, neither lymphadenopathy or thyroid enlargement, abdominal masses, or skin abnormalities that suggested connective tissue disorders were found. Furthermore, chest radiography performed at admission did not show any abnormality (Figure 1). The barium esophagram, a highly evaluable investigation in patients with suspected esophageal dysphagia, demonstrated an extrinsic compression on the posterior wall of the upper thoracic esophagus (Figure 2). Subsequently, 3-dimensional contrast-enhanced magnetic resonance angiography (Figure 3) showed the right-sided aortic arch, from which an abnormal vascular branch originated, encircling the esophagus and trachea (ie, vascular ring). Left common carotid and subclavian arteries originated independently from this branch. Finally, computed tomography angiography of the thoracic aorta (Figure 4) confirmed the presence of a right-sided aortic arch and extrinsic compression on the esophageal posterior wall by the enlarged terminal portion of the abnormal vascular branch (maximum transverse diameter, 21 mm; yellow arrowheads in Figures 3C and 4B).

After careful examination, the consulting gastroenterologist advised against endoscopic esophageal dilation with stent placement. Indeed, although these procedures show a favorable cost-benefit ratio and a low incidence of complications, in this specific case, they could provide only temporary, short-term relief of symptoms. The consulting cardiovascular surgeon suggested a surgical approach aimed at dividing the minor arch through an ipsilateral thoracotomy. In pediatric patients, this approach is usually safe and effective. However, our patient did not give his consent to the surgery. Thus, tailored nutritional support with a high-calorie diet was provided, and a 6-month follow-up was established to assess the need for additional medical procedures, including nasogastric tube insertion or percutaneous endoscopic gastrostomy.

Double aortic arch and vascular ring are caused by abnormal regression of 1 or more segments of the aortic arches arising from the truncus arteriosus during embryological development and can be associated with other cardiovascular abnormalities,
including ventricular septal defect, tetralogy of Fallot, and transposition of the great arteries. It is usually diagnosed in early infancy, and its presentation depends on the severity of tracheal or esophageal compression. Although respiratory symptoms caused by tracheal compression are the predominant symptoms in infancy, adults usually have dysphagia. Remarkably, a diagnosis of double aortic arch and vascular ring is extremely rare in the elderly. In the present case, the dysphagia was likely caused by the progressive increase in size and stiffness of the terminal portion of the abnormal vascular branch, which probably would have otherwise remained undiagnosed.

Disclosures

None.

Figure 2. Posteroanterior (A) and lateral (B) esophagram after barium swallowing demonstrates clear extrinsic compression on the posterior (white arrows) and right (black arrows) wall of the upper thoracic esophagus.

Figure 3. Three-dimensional contrast-enhanced magnetic resonance angiography (A–C) shows the right-sided aortic arch, from which an abnormal vascular branch (arrowheads) originates, encircling the esophagus and trachea (ie, vascular ring). Left common carotid (white arrows) and subclavian (gray arrows) arteries originate independently from the proximal and middle portion of this branch, respectively.
Figure 4. Upper-axial postcontrast computed tomography scans (A, B) show the presence of a right-sided aortic arch (white arrows) and extrinsic compression on the esophageal posterior and right wall (black arrow) by the enlarged terminal portion of the abnormal vascular branch (maximum transverse diameter, 21 mm; yellow arrowheads in b). These computed tomography scans (A, B) show a completely obliterated esophageal lumen. Caudal computed tomography scans (C, D) acquired below the aortic arch show a patent esophageal lumen (arrowheads).
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