Circumflex retroesophageal right aortic arch: rare differential of mediastinal widening

Niraj Nirmal Pandey, Arun Sharma, Manish Shaw, Sanjeev Kumar

DESCRIPTION
A 48-year-old man presented to the outpatient department with complaints of inspiratory stridor and occasional dysphagia. Chest radiograph revealed bilateral symmetric widening of the superior mediastinum at the level of aortic arch with the descending aorta seen to the left of spine. No lateral displacement of tracheal air column was noted (figure 1A). The patient was referred to us for a CT angiography (CTA) with a provisional diagnosis of an aneurysm or a mediastinal mass. Review of CTA images revealed a right-sided aortic arch crossing the midline posterior to the trachea and the oesophagus in the upper mediastinum and further descending on the left side of spine (figure 1B–E). A Kommerell’s diverticulum arising from the anterosuperior aspect of aorta, on the left side, gave rise to an aberrant left subclavian artery (LSCA). The circumflex arch was ectatic and measured 37 mm in its maximum diameter. Moderate compression on the posterior aspect of trachea by the ectatic circumflex arch was noted (figure 1E–F).

A circumflex retroesophageal right aortic arch is an extremely uncommon anomaly. Embryologically, a circumflex right aorta with an aberrant LSCA results from regression of the left dorsal aorta between the left common carotid artery and the LSCA, with the right dorsal aorta forming the distal portion of the arch. It has also been postulated that the third aortic arch gives rise to the proximal aortic arch while the distal arch is formed by the fourth arch, which can explain the elongated transverse arch as well as the relatively higher position of the proximal aortic arch.1 Even in the absence of a ligamentum arteriosum, the circumflex aorta itself, especially if ectatic, can cause symptomatic...
Images in...

Learning points

- Circumflex retroesophageal right aortic arch can mimic an aneurysm or a superior mediastinal mass on a chest radiograph.
- Identification of this anomaly is important as, even in the absence of a ligamentum arteriosum, the circumflex aorta itself, especially if ectatic, can cause symptomatic tracheal compression and such patients may require aortic uncrossing procedure.

Contributors
All authors have participated sufficiently in the conception of the idea, development of the intellectual content, design, writing and final approval of the manuscript.

Funding
The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests
None declared.

Patient consent
Obtained.

Provenance and peer review
Not commissioned; externally peer reviewed.

REFERENCES

Learning points

► Circumflex retroesophageal right aortic arch can mimic an aneurysm or a superior mediastinal mass on a chest radiograph.
► Identification of this anomaly is important as, even in the absence of a ligamentum arteriosum, the circumflex aorta itself, especially if ectatic, can cause symptomatic tracheal compression and such patients may require aortic uncrossing procedure.

Copyright 2018 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit http://group.bmj.com/group/rights-licensing/permissions.

Become a Fellow of BMJ Case Reports today and you can:
► Submit as many cases as you like
► Enjoy fast sympathetic peer review and rapid publication of accepted articles
► Access all the published articles
► Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow.