Sling Ring, a type of Kommerell diverticulum approach

Andre Mancilha CANCEL
Natalia GALVAO
Bruno FERRARI
Maria Helena Costa de ALMEIDA
Guilherme Vieira MEIRELLES
Mauricio ROCCO

AUGUSTO DE OLIVEIRA CAMARGO HOSPITAL, INDAIATUBA-SP BRAZIL
Disclosure

Speaker name: Dr Andre CANCELA

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☒ I do not have any potential conflict of interest
INTRODUCTION

• Vascular rings are unfrequented congenital abnormalities (<1 %) of the aortic arch that can encircle the trachea and esophagus.

• The clinical presentation is variable related degree of compression.

• Can be respiratory distress or dysphagia beginning in the first year or in later life time depending of the haemodynamic status.

• No gender or ethnic predispositions have been identified
CAUSES OF VASCULAR RINGS AND SLINGS COMMONLY

- double aortic arch
- right aortic arch with aberrant left subclavian artery
- left ligamentum arteriosum
- aberrant right subclavian artery (most common)

- congenital abnormalities, particularly conotruncal anomalies
  ✓ 22q deletion syndrome
THE FIRST VASCULAR RING DESCRIBED WAS A DOUBLE AORTIC ARCH NOTED BY HOMMEL IN 1737

• Bayford reported retrooesophageal right subclavian artery in 1794
  • after performing an autopsy on a woman who had experienced dysphagia for years and died of starvation.
Maude Abbott described five cases of double aortic arch in 1932 and made the suggestion that surgical intervention should be undertaken in such cases.

Finally, in 1945, Gross used the term vascular ring in the New England Journal after performing the first successful division of a double aortic arch.
Case Report Based Discussion

• Two cases of progressive dysphagia to liquid and weight lost.

• Both male, first with 51 and the second 55 years old

• The diagnosis was done during the investigation of dysphagia by angio tomography.
  
  • Right positioned descending aorta
  
  • Carotid artery’s coming first from the arch and then the right subclavian artery.
  
  • The left subclavian artery came from the descending aorta, with a Kommerell diverticulum at the origins, evolving the esophagus in the way for the left arm.
Case Report Based Discussion

- Hybrid approach in both cases:

- Toracic endoprothesis (Zenith Cook and Gore)

- Subclavian exclusion
  - PTFE bypass and coils
  - Carotid - subclavian bypass and coils
CASE REPORT BASED DISCUSSION

• The left subclavian artery came from the descending aorta, with a Kommerell diverticulum at the origins, evolving the esophagus in the way for the left arm.
First case
Second Case
Pre op

Post operatory
Sling ring with right aortic rotation can produce esophagus compression by left subclavian artery with Kommerell diverticulum.

These patients could be treated by hybrid approach excluding subclavian artery, and without flow the reduction of esophagus compression was obtained. This can be a first option for treating this disease, letting the thoracotomy and subclavian artery resection just in failure of this attempt.
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