

# Hybrid Surgical Treatment of Dysphagia Lusoria in a patient with Loeys-Dietz Syndrome

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# INTRODUCTION

- **Dysphagia lusoria (DL)** results from the compression of the esophagus by an aberrant right subclavian artery (ARSA).
- Its prevalence is reported to be less than **1%**.
- **Management** ranges from dietary modifications to surgical intervention in severe cases. Surgery entails transposition of the ARSA to the right common carotid artery (RCCA), and ligation and resection of the ARSA.



# OBJECTIVE

The aim of this presentation is to describe an unusual case involving an aberrant right subclavian artery (ARSA) in a patient with Loeys-Dietz syndrome (LDS).

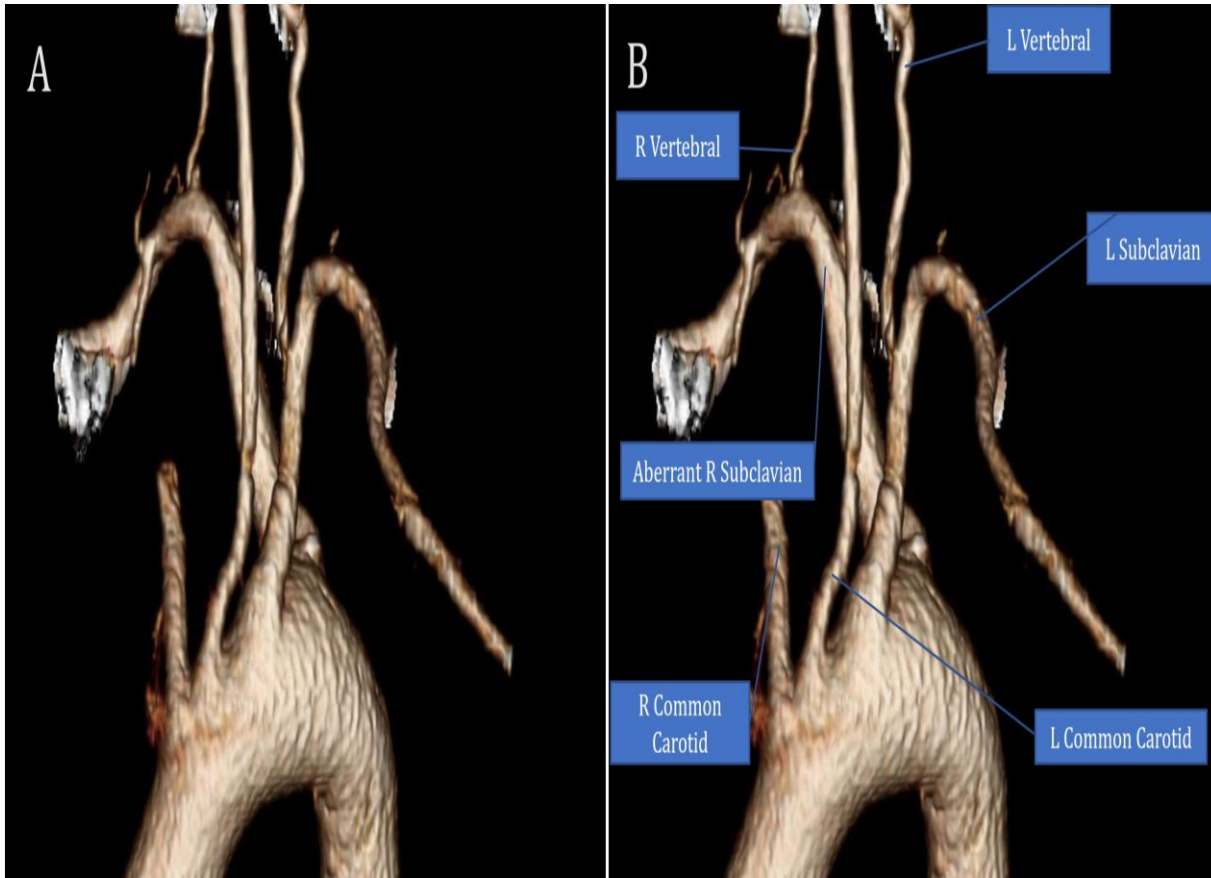


# METHODS

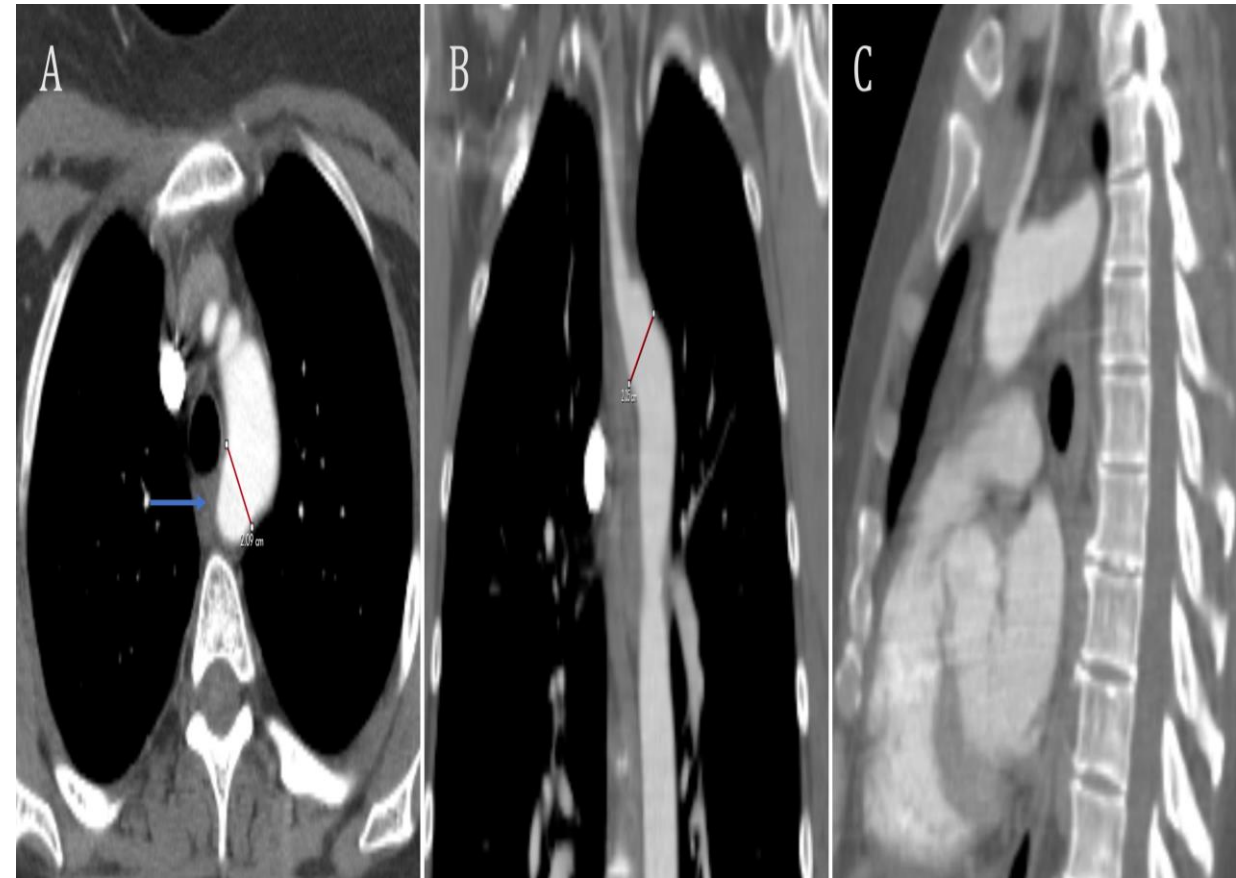
- A 47-year-old woman was transferred to our institution with a 30-year history of **dysphagia** secondary to an ARSA.
- **Past medical history** was significant for LDS, Hashimoto's disease, and a craniotomy for the resection of a sphenoid meningioma.
- Pre-operative computed tomographic angiography (**CTA**) scan demonstrated an ARSA and a Kommerell diverticulum (figure 2).



# RESULTS



**Figure 1.** Fig 1A: ARSA. Retroesophageal course. Fig 1B: Supraaortic vessels.



**Figure 2.** 2-cm Kommerell diverticulum at the site of the ARSA.

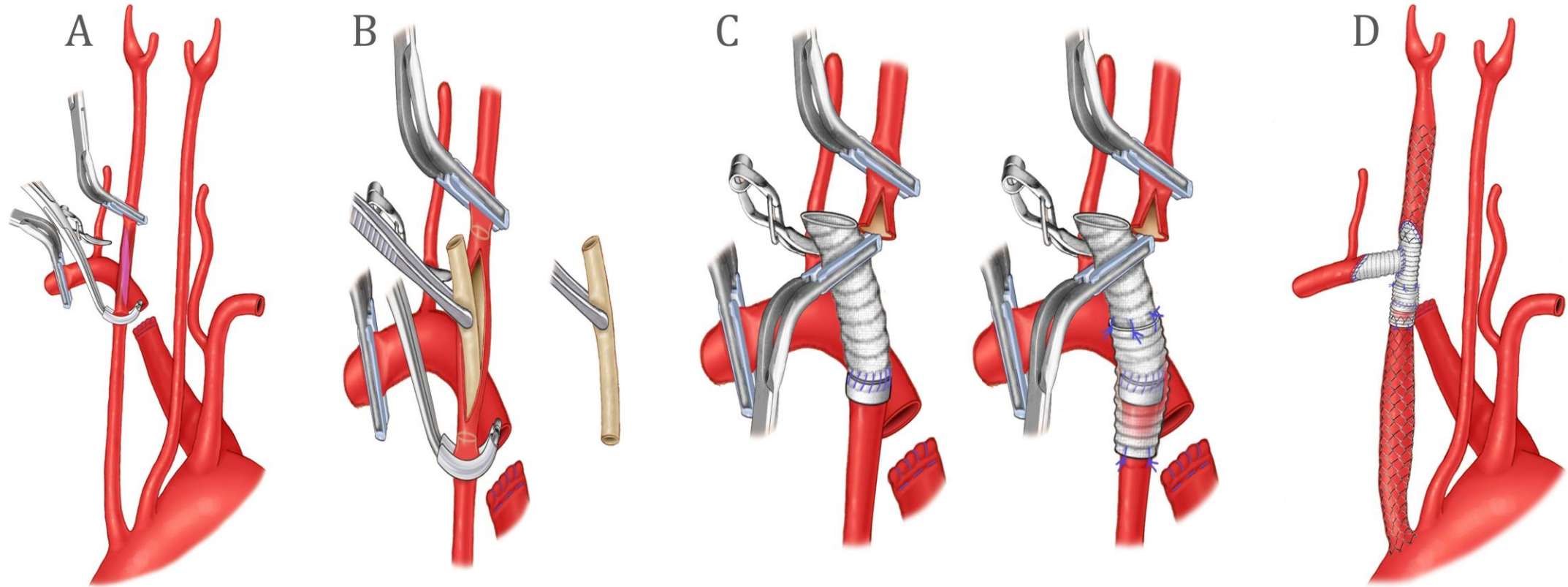


# RESULTS

- **The 1<sup>st</sup> stage** was an ARSA transposition to the Right common carotid (RCCA) via a supra-clavicular approach.
- The ARSA was transected, and oversewn in 2 layers.
- Immediately after clamping the RCCA: artery dissection: Right carotid interposition graft + Right carotid- subclavian bypass performed.
- The RCCA was stented using a 14 x 60 mm self-expandable stent proximally and a 7 x 30 mm self-expandable stent distally (figure 3).



# RESULTS



**Figure 3.** Right carotid dissection. Interposition grafts. Right carotid- subclavian bypass. Carotid stents.



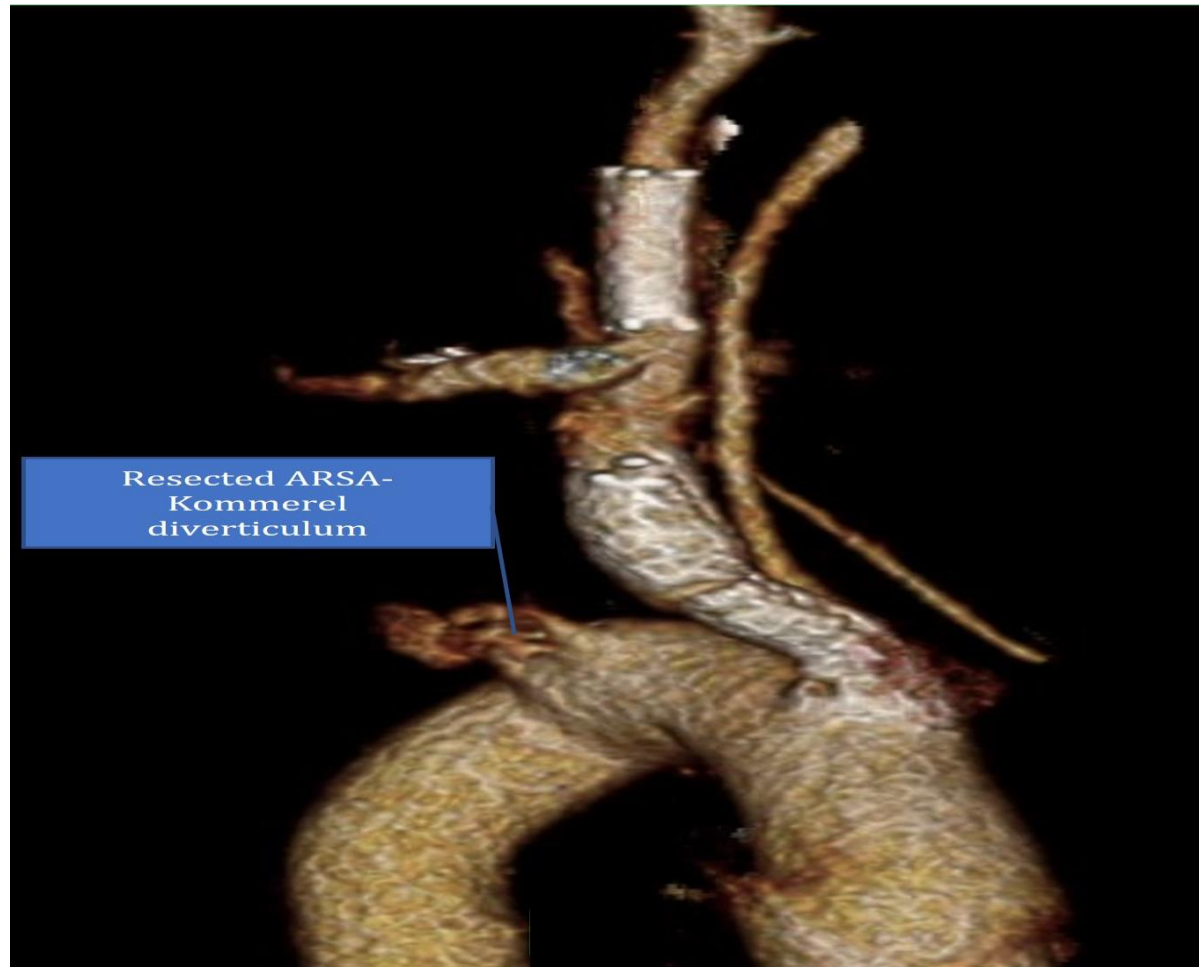
# RESULTS

- **The 2<sup>nd</sup> stage** was performed with left thoracotomy (muscle-sparing).
- The proximal Kommerell diverticulum was clamped and controlled. Using multiple 3-0 Prolene pledget sutures, the diverticulum was **ligated and resected.**
- Patient was discharged home stable on postoperative day 7.





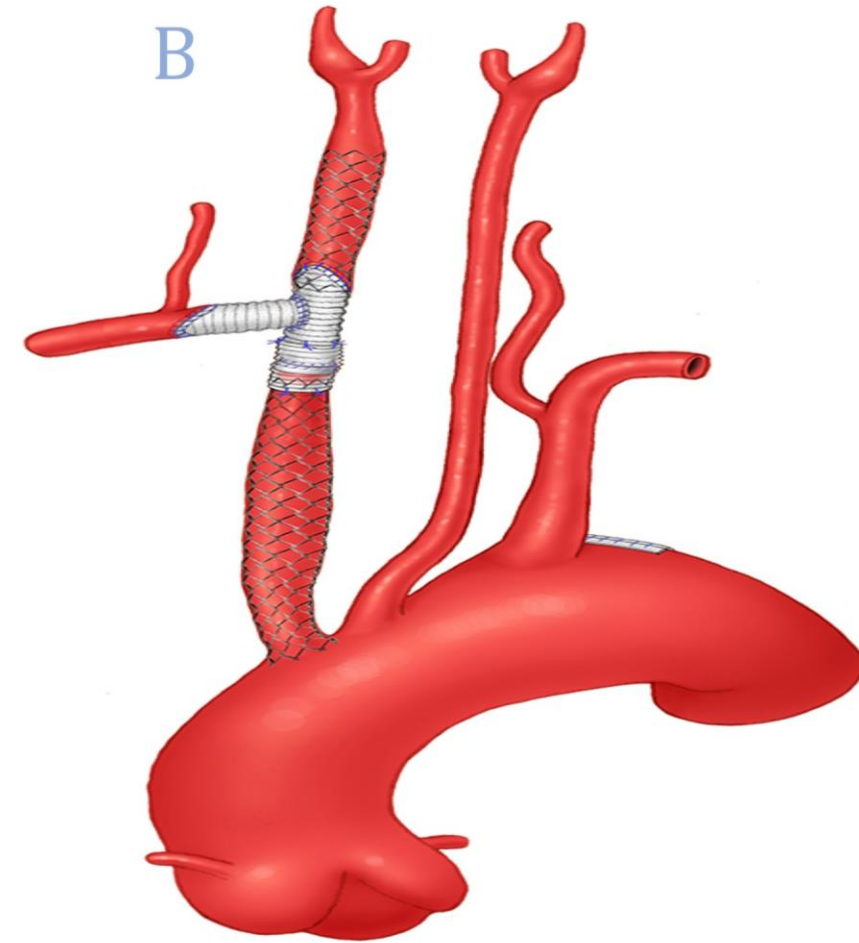
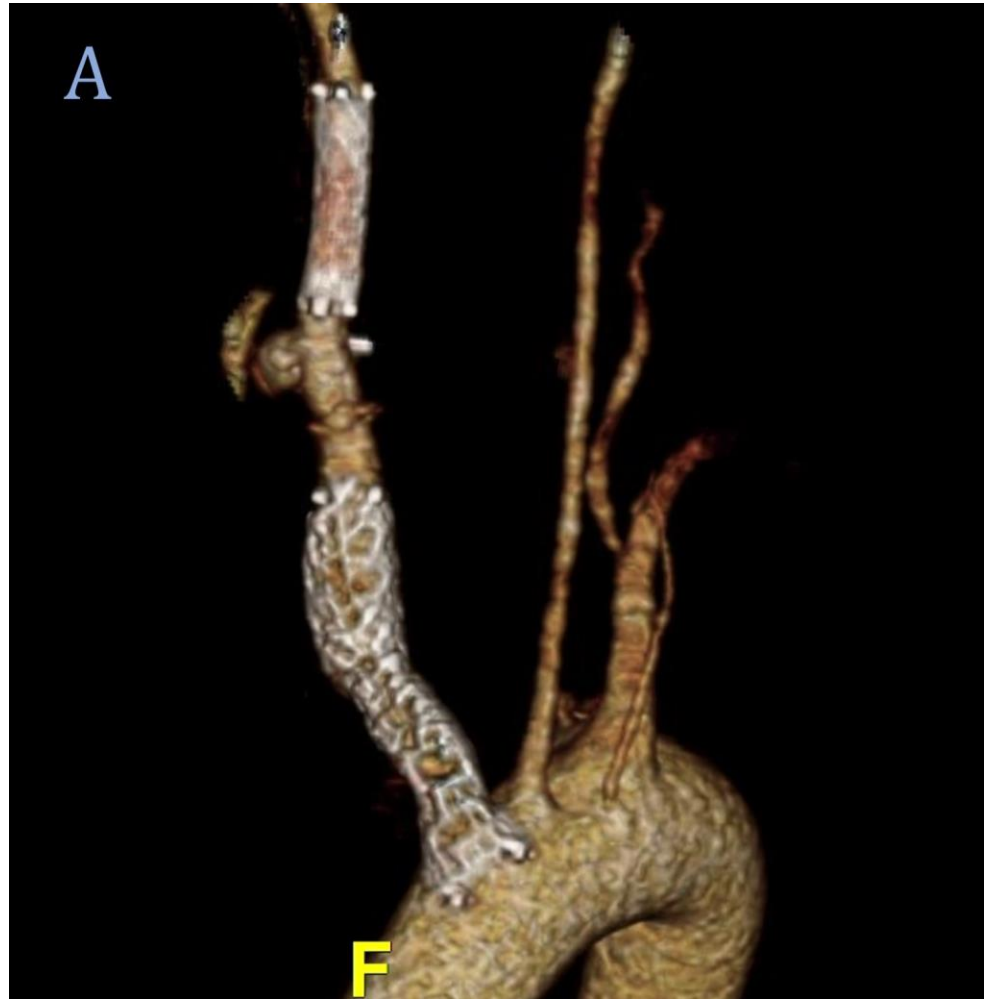
# RESULTS



**Figure 4.** Patent R carotid-subclavian bypass, RCCA stent, and ligation-resection of the origin of ARSA and Kommerell diverticulum.



# RESULTS



**Figure 5.** Postoperative 3D reconstruction revealing patency of the innominate and RCCA stents (Figure 5A). Final outcome reconstruction (Figure 5B).



# DISCUSSION

- Up to **60%** of patients with aberrant right subclavian artery (ARSA) also exhibit a wider origin of the vessel, referred to as Kommerell' s Diverticulum (KD).
- Our case illustrates the **potential complications** that may arise when addressing supra-aortic or subclavian arteries in patients with Loeys-Dietz syndrome (LDS), particularly in the complex region of the proximal right subclavian artery and innominate artery.



# DISCUSSION

- In patients with LDS, characterized by **fragile vascular integrity**, it is essential to ensure appropriate management of arterial complications during surgery. This involves specific techniques
- **Management of arterial complications:**
  - Interrupted sutures.
  - Preventing potential tears or dissections.
  - Protecting the clamps (Plasma tubing or Fogarty hydro-grip clamps).

# CONCLUSIONS

The presented case highlights the importance of a multidisciplinary approach and ***meticulous surgical planning*** when treating dysphagia lusoria in patients with underlying connective tissue disorders such as Loeys-Dietz syndrome.

