


The 44<sup>th</sup> Annual International Congress of the  
**EGYPTIAN SOCIETY OF  
CARDIOLOGY**  
CardioEgypt2017



20-23  
February 2017  
Fairway

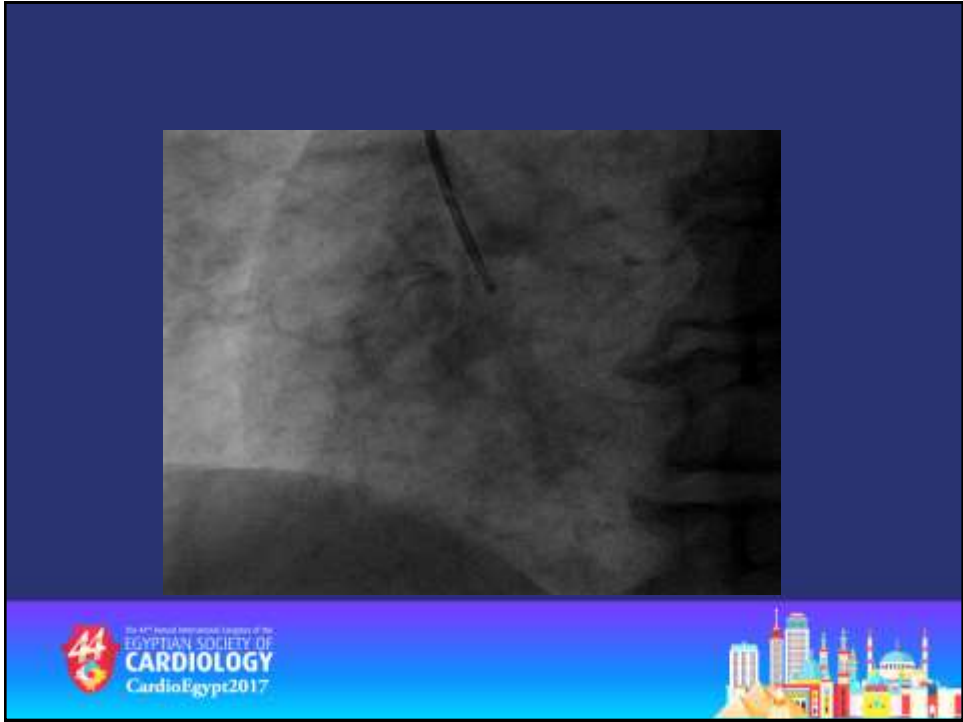
## **Bonapace Branch in 3 different clinical scenarios**

By  
Aly Tohamy, M.Sc.  
Assistant lecturer of cardiology- Assiut University

### **Case 1.**

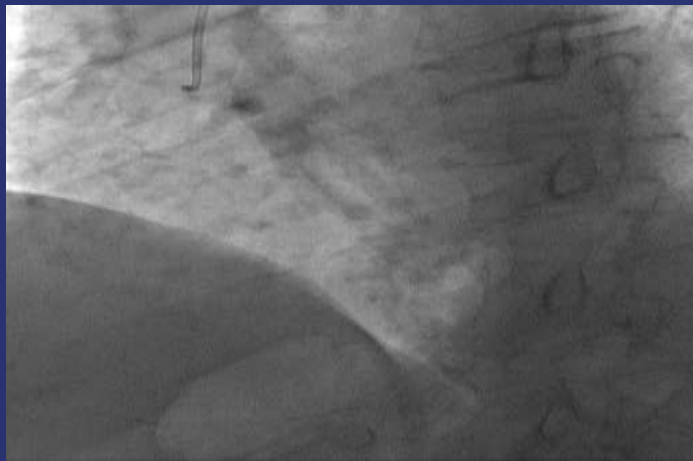
- A 60-year-old man was referred for coronary angiography due to exertional chest pain and a significant lesion in the RCA detected by coronary CT angiography. A multipurpose catheter was used to cannulate the RCA.
- A Descending septal artery (Bonapace branch) emerging from a common ostium with the RCA was visualized.





## Case 2

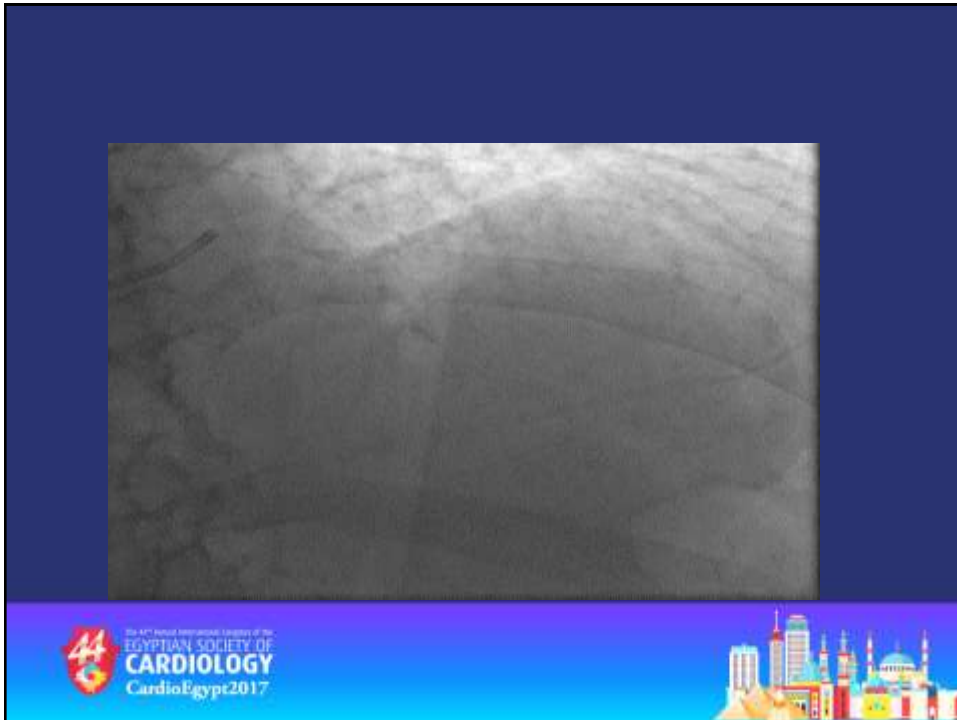
- A 68 year-old man was admitted with NSTEMI. Via the right radial artery, the RCA was catheterized with a Judkins right catheter.
- A DSA arising from the proximal segment was detected, providing collateral circulation to LAD-CTO through several septal branches.





- Angiography of the left coronary artery confirmed the chronic occlusion of the LAD. The patient was referred for CABG.

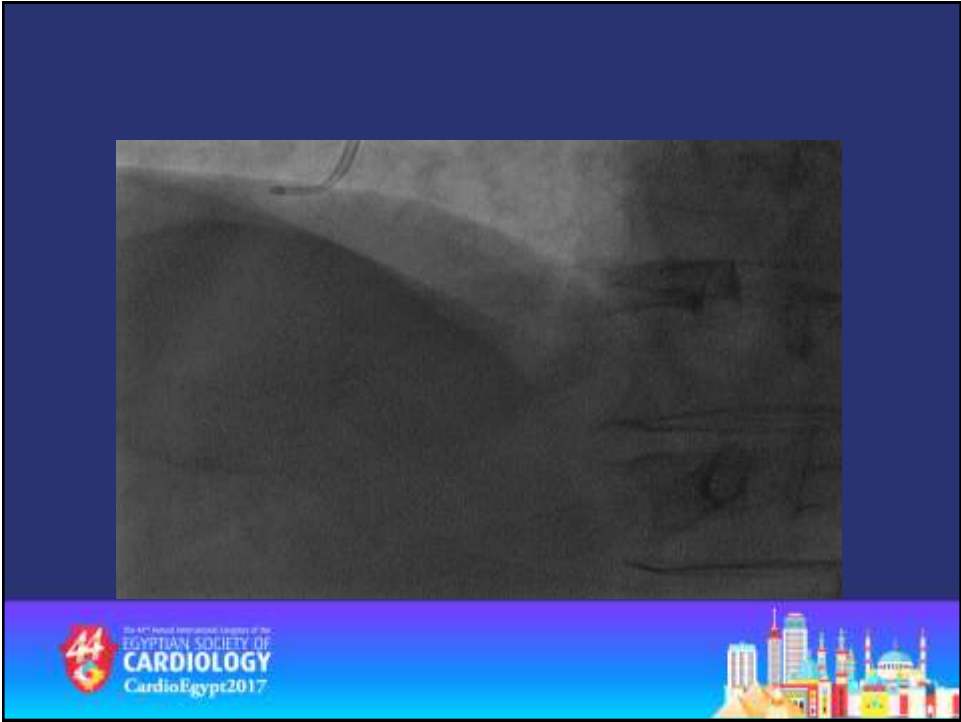


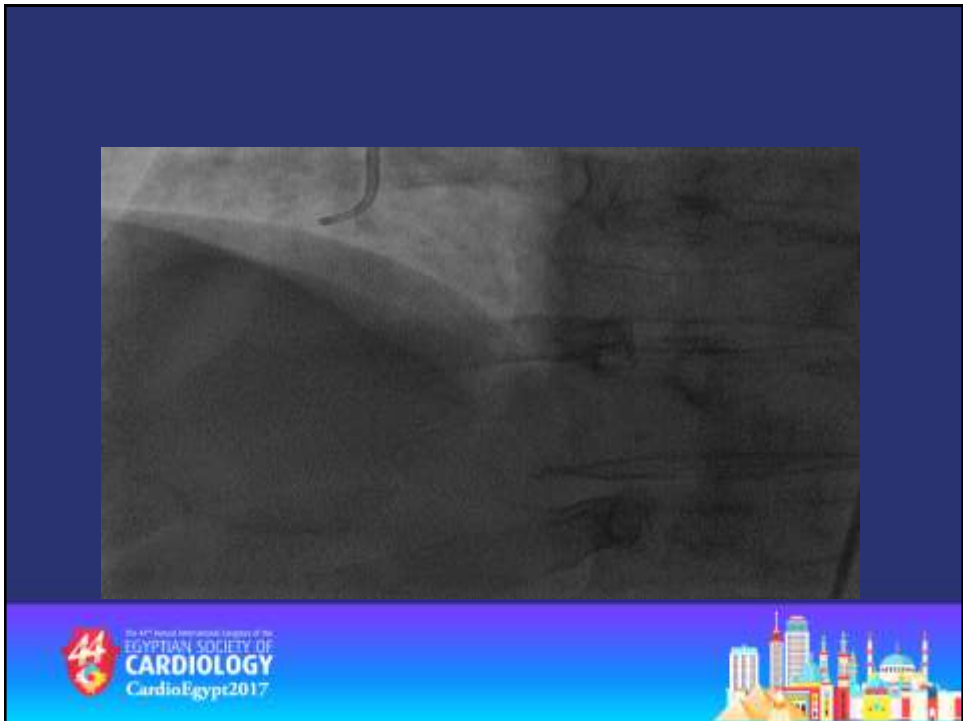
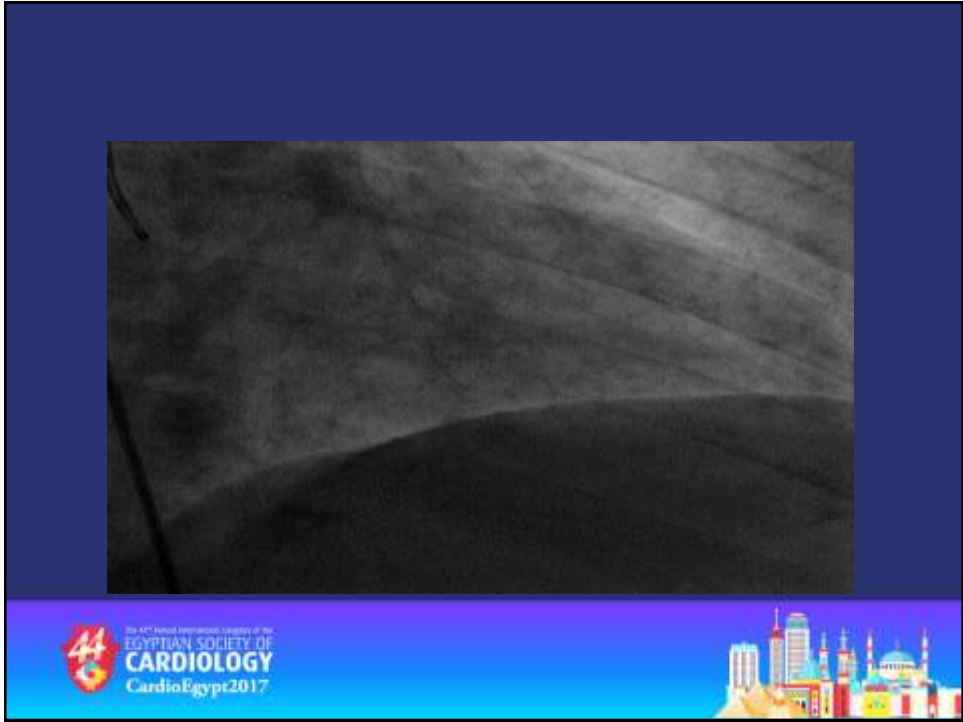


## Case 3

- 56 year-old man referred for coronary angiography because of heart failure and poor left ventricular ejection fraction.
- DSA independently originated from the right coronary sinus was accidentally cannulated while attempting to localize the RCA with a Judkins right catheter.







## Descending septal artery (Bonapace A.)

- Available information about DSA arises from post-mortem studies, which report an incidence varying from 12% to 85%.
- This contrasts with its extremely infrequent identification in clinical practice as the position of the catheter a few millimeters distal to the RCA ostium during coronary angiography can easily mask this branch.



- The DSA can arise from up to 4 different locations :
- Type I those variants emerging within the proximal segment of the RCA.
- Type II as those sharing a common ostium with the RCA.
- Type III as those sharing an ostium with the conal branch.
- Type IV as those arising independently from the right coronary sinus.

Rodriguez Fl et al.. Am Heart J. 1961.





## Why is it important?

- The DSA provides blood supply to the posterobasal aspect of the interventricular septum, the atrioventricular node, and the His bundle.
- In the presence of CAD, its role as a source of collateral circulation has been recognized, These anastomoses are mainly connected with other septal branches.



- The DSA can rarely be part of a combined coronary artery anomaly.
- The DSA can be of interest even in patients with hypertrophic obstructive cardiomyopathy. Kurita et al. performed a percutaneous septal alcohol ablation through a DSA.
- It could be used for retrograde recanalization of LAD-CTO.

Kurita T et al. *Cardiovasc Interv Ther.* 2014.



## Technical Aspects

- A relatively deep cannulation of the RCA may prevent its identification.
- A DSA arising from an independent ostium is mostly accidentally identified while attempting to find the RCA.
- Contrast back-flow during injections in the RCA might reveal its presence.



- Nonselective contrast injections in the right coronary sinus could be used when a DSA is strongly suspected, especially in the absence of a well-developed first septal branch in the LAD.
- Multipurpose or Amplatz right catheters might be useful to selectively engage the DSA.



## Conclusion

- DSA is an infrequent finding during coronary angiography that can be of interest in specific scenarios.
- Operators should be aware of its existence and perform a careful evaluation particularly in those situations in which a DSA might have therapeutic implications.



# Thank You

