

Rare case of ARCAPA in an adult patient with sever mitral regurgitation. A Case report.

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Introduction

ARCAPA is an uncommon condition where the right coronary artery arises from the pulmonary artery, affecting only 0.002% of individuals (1). While previously not considered life-threatening in infancy or youth, there have been reports of sudden death. Symptoms can range from asymptomatic murmurs to abrupt cardiac death, distinguishing it from ALCAPA.

Case

A 53-year-old male with a history of hypertension and polycystic kidney disease presented with symptomatic severe mitral regurgitation, including shortness of breath, haemoptysis, palpitations, and atrial fibrillation.

Diagnostic

Diagnostic tests revealed abnormal renal functions, irregular pulse, a systolic murmur, and bilateral lung infiltrates on chest X-ray. Echocardiography confirmed severe mitral valve regurgitation due to a flail P2 segment (Figure 1). Coronary angiogram (Figure 3)revealed an unusual anatomy with a non-dominant right coronary artery arising from the pulmonary trunk, which was confirmed with CT coronary angiogram (Figure 2). Additionally, imaging showed liver cysts and a subcortical microbleed in the brain.

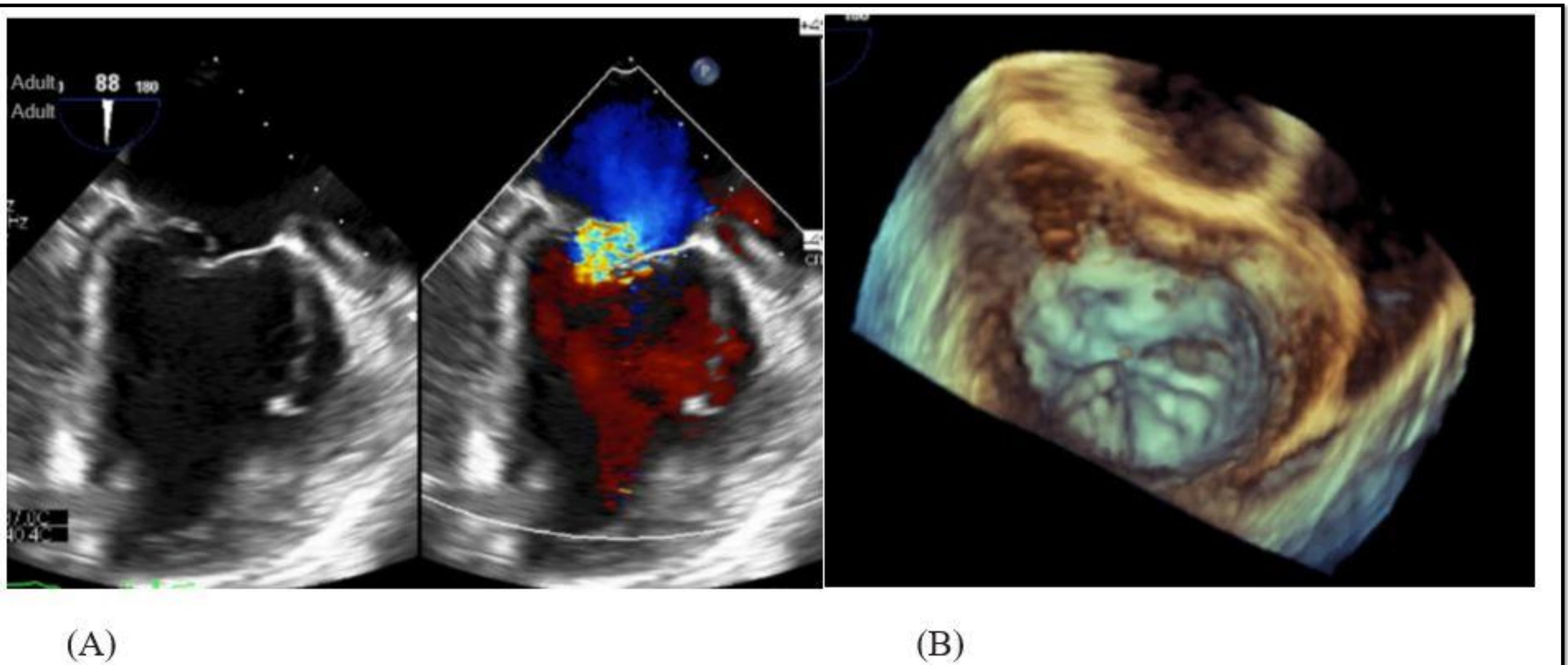


Figure (1): Ttransesophageal echocardiography (TEE). (A) Severe mitral regurgitation (flail P2 segment of the posterior leaflet with chordal disruption), (B) 3D view showing same findings



Figure (3): coronary angiogram revealed giant coronary arteries, no obstructive disease in Left system.

Surgical Correction

During surgery, the patient's anomalous right coronary artery (RCA) originating from the pulmonary artery was corrected by mobilizing the proximal part, division and reimplantation into the aorta, then repairing the pulmonary artery with a synthetic patch (Figure 4). Mitral valve repair was performed due to a ruptured papillary muscle, including placement of synthetic chordae and an annuloplasty ring. Postoperative assessment showed competent mitral valve repair with minimal regurgitation.

Post op and Follow up

The patient recovered well without dialysis, was discharged on anticoagulation for atrial fibrillation, and had a successful outpatient follow-up with no complaints and acceptable echocardiographic findings.

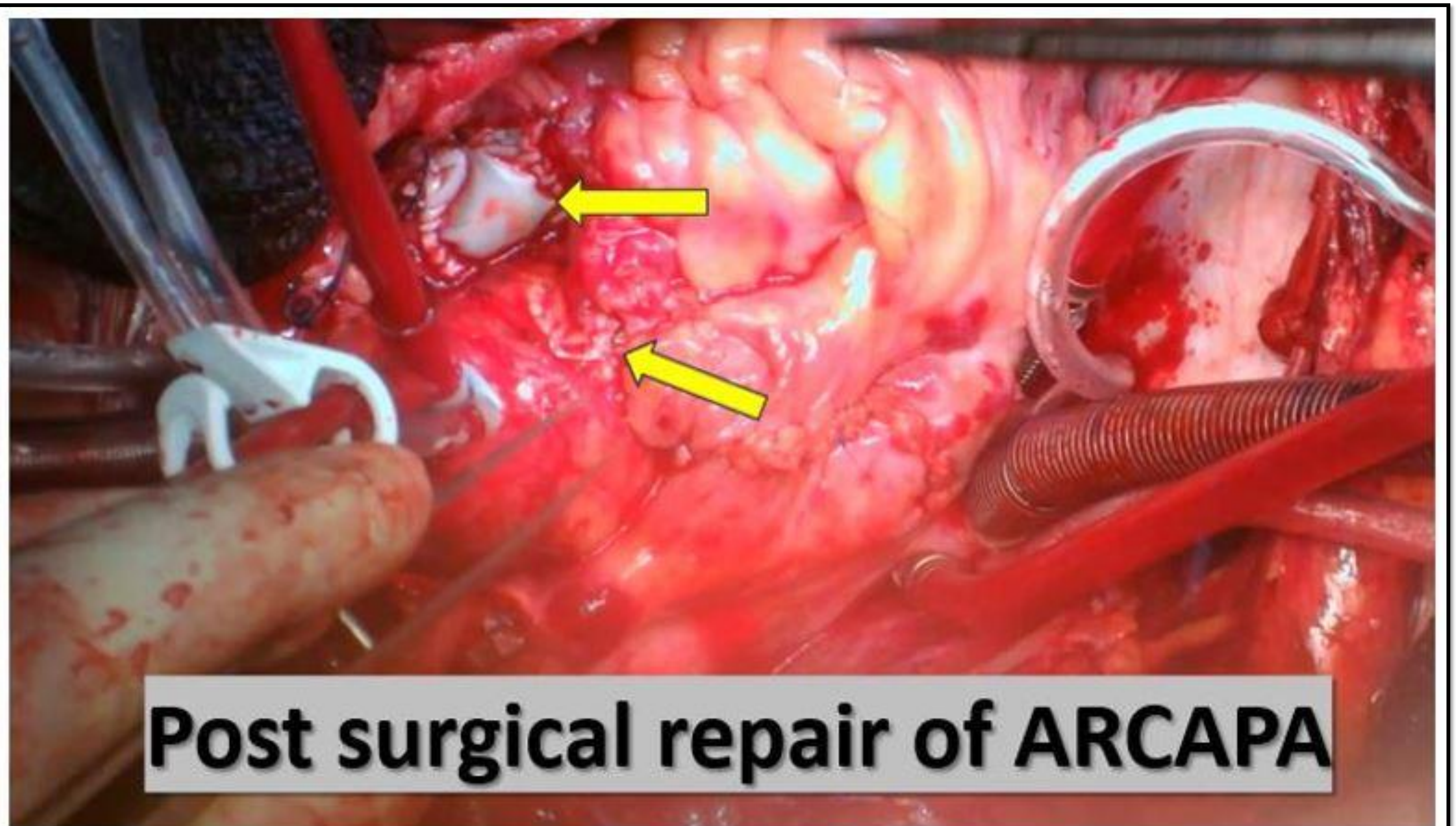


Figure (4): Reimplantation of the anomalous right coronary artery on the ascending aorta.

CONCLUSION

A patient with severe mitral regurgitation and left ventricular dysfunction was diagnosed with an anomalous right coronary artery from the pulmonary artery during preoperative angiography. Surgical treatment involved mitral valve repair and reimplantation of the coronary artery into the aorta, leading to a successful outcome.

REFERENCES

1. Guenther TM, Sherazee EA, Wisneski AD, Gustafson JD, Wozniak CJ, Raff GW. Anomalous origin of the right coronary artery from the pulmonary artery: a systematic review. The Annals of Thoracic Surgery. 2020 Sep 1;110(3):1063-71.

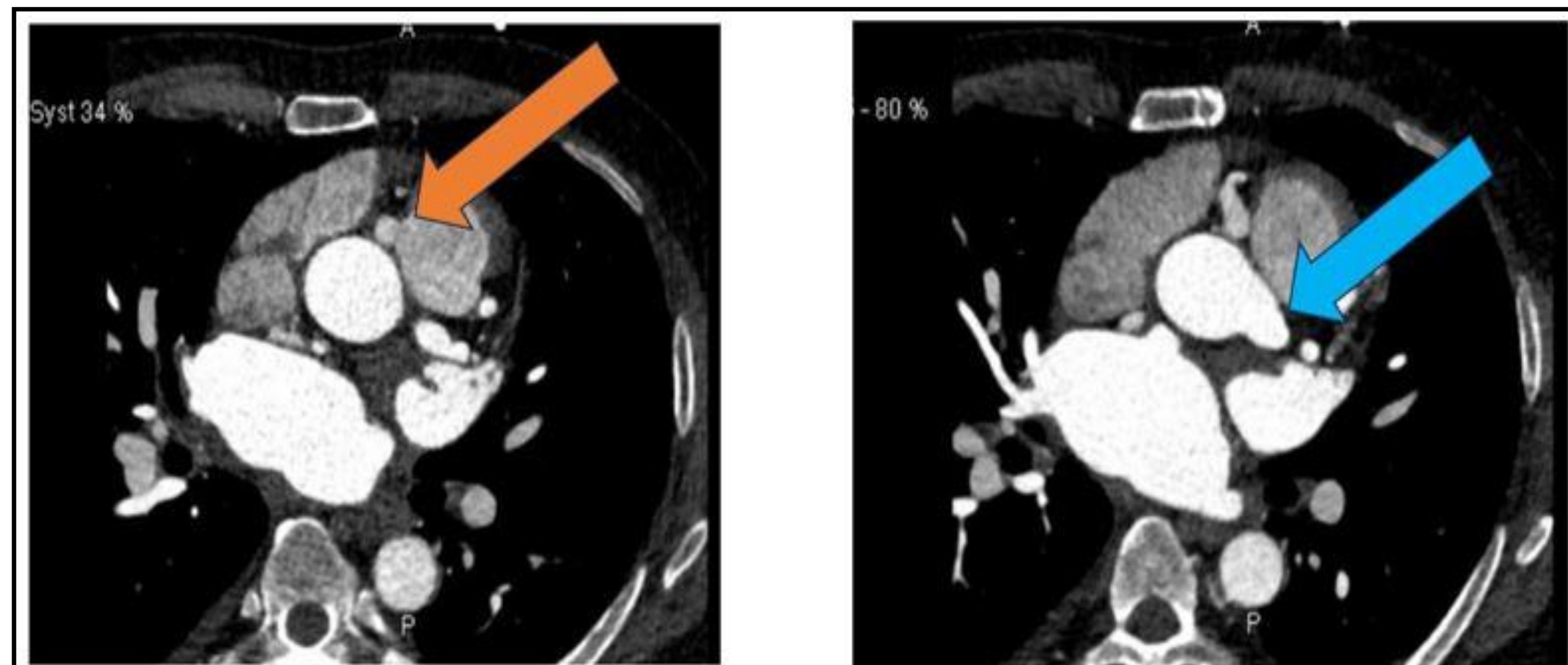


Figure (2): CT coronary >> ARCAPA with interarterial course, ectatic LAD and LCX arteries