

Introduction

- Coronary artery ectasia (CAE), defined as local or generalized aneurysmal dilatation and enlargement of the coronary arteries to 1.5 times or more the normal baseline diameter, is a rare disease occurring in 0.3-4.9% of people in North America.
- CAE etiology, clinical significance and optimal management are yet unclear.
- We present a unique case of a 54-year-old male who had a significantly ectatic left circumflex coronary artery (LCX) and had an ST-elevation myocardial infarction (STEMI) as an initial presentation of this disease entity

Case Presentation

HPI :

•A 54-year-old male with no known significant medical history, presented to the hospital with severe substernal chest pain of 1-hour duration.

Hospital Course:

- On presentation, he was afebrile, had a blood pressure of 125/88 mmHg, heart rate of 85 bpm, respiratory rate of 16 per minute, and oxygen saturation was 97% on 3 liters of oxygen by nasal cannula.
- On physical examination, the patient was in acute distress ;
- Cardiovascular and Pulmonary examinations were unremarkable with normal heart sounds. His chest was clear to auscultation bilaterally.
- Chest x-ray was negative for acute findings.
- EKG was done in the emergency room and showed ST segment elevation in lateral leads (I, aVL, V5-V6) consistent with STEMI. Troponin I level was also elevated at 19.08 ng/ml

FIGURE : Coronary Angiogram Cinegraphic Images

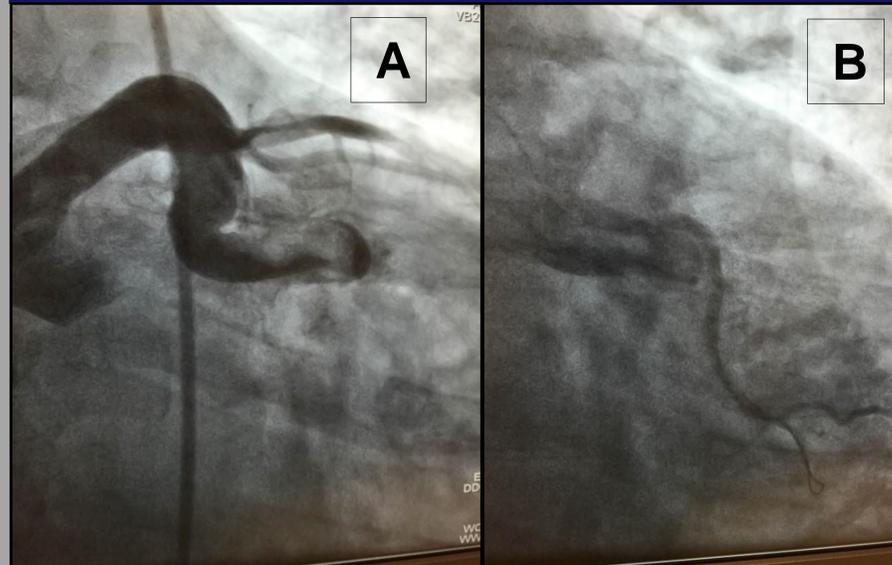


Figure: (A) The initial image represents the left coronary system in anterior-posterior (AP) caudal view. In the proximal circumflex artery there is extensive aneurysmal disease with ectasia and evidence of acute thrombus with 100% occlusion of a distal circumflex artery

(B) In the post intervention view there appears to be an obtuse marginal artery distal to the aneurysmal circumflex artery of normal caliber vessel with no evidence of disease.

Hospital Course

Treatment:

- Patient was emergently transferred to the catheterization lab and a left heart catheterization with bilateral selective coronary angiography was performed.
- Left heart catheterization revealed an ectatic LCX with a diameter close to 8 mm, with an acute thrombus and 100% occlusion of the distal LCX and severe atherosclerosis
- Percutaneous coronary intervention was done to reestablish flow to the obtuse marginal artery (OM) but plaque burden couldn't be removed.
- Subsequently, patient underwent coronary artery bypass grafting 2 days later using a reversed saphenous venous graft to the OM.
- He was discharged home 3 days after surgery in stable condition on Aspirin and Clopidogril.

Discussion

- CAE is a variant of coronary artery abnormality. It may be congenital or acquired
- CAE is commonly found in patients with atherosclerosis and coronary artery disease, but the condition can occur by itself without an identifiable cause and in both cases, it can cause medical problems.
- CAE can potentially cause myocardial tissue ischemia resulting from decreased coronary blood flow. This will happen either due to a blood clot, spasm of the vessel, or a combination of these two and other factors.
- The disease is usually asymptomatic and is discovered incidentally during workup for other cardiac conditions.
- When symptomatic, chest pain and dyspnea on exertion are the common symptoms.
- Angiography remains most common method for discovering the disease
- Treatment normally goes hand in hand with therapies of other heart disorders such as atherosclerosis and hypertension.
- To prevent the formation of intraluminal clots, antiplatelets, anticoagulants, and calcium channel blockers have been used
- There is no set guidelines that favor any medical vs surgical treatment options.

Conclusion

- This case is unique as it describes a significantly aneurysmal LCX which is very wide in diameter complicated with an intraluminal thrombus without a prior warning in this patient, all managed successfully.
- Literature provides limited information regarding optimal management of similar conditions.

References

- Antoniadia, A.P., Chatzizisis, Y.S., and Giamoglou, G.P. (2008) Pathogenic mechanisms of coronary ectasia. *Int J Cardio*, 130, 335-343
- Hsu, P.C., Su, H.M., Lee, H.C., Juo, S.H., Lin, T.H., Voon, W.C., Lai, W.T., and Sheu, S.H.(2014)Coronary artery collateral circulation in patients of coronary ectasia with significant coronary artery disease.*PLOS ONE*,9(1), doi: 10.1371
- Lin, C.T., Chen, C.W., Lin, T.W., and Lin, C.L (2008) Coronary artery ectasia. *Tzu Chi Med*, 20(14), 270-274