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LEARNING OBJECTIVES

- Coronary artery ectasia is a very rare clinical entity that can present a variety of ways including incidentally, angina, ACS, tamponade, or with ventricular tachycardia as in this case
- Coronary angiography is the gold standard in diagnosing these patients, and is important to understand the image findings, disease process, and classifications to ensure accurate diagnosis
- Further studies into this disease process are essential in order to develop more uniform treatment strategies and determine long-term prognosis for these patients.

Patient History

- A 64 year old male with a history of thoracic aortic ulcer s/p TEVAR presented with typical chest pain. EKG consistent with ventricular tachycardia requiring direct current cardioversion with an amiodarone infusion.
- LHC revealed coronary ectasia of the left anterior descending artery (LAD), left circumflex artery (LCX) (figure 1) and right coronary artery (RCA) with distal thrombosis (figure 2).
- Transthoracic echocardiogram revealed an ejection fraction of 45% with global hypokinesis. Cardiac MRI showed scarring of the inferior lateral wall.
- The patient underwent 5-vessel CABG with implantation of an ICD and discharged with dual-antiplatelet therapy for acute coronary syndrome (ACS).

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Figure 1 & 2: Imaging Studies



Figure 1: Left heart catheterization; RAO Caudal view demonstrating severe coronary artery ectasia of the Left anterior descending artery and the left circumflex



Figure 2: Left heart catheterization; LAO Cranial view demonstrating severe ectasia of the right

Conclusion

- Coronary artery ectasia (CAE) is characterized by the aneurismal dilation of the coronary arteries with a diameter 1.5 times the adjacent normal coronary artery. It is a rare condition with an incidence of 1.4-4.9%. CAE differs from coronary artery aneurysm as the former usually involves multiple or diffuse involvement of coronary arteries [1]. Although CAE is well described the underlying pathophysiology is not well understood. There are multiple etiologies of CAE, the most common being atherosclerosis [2].
- Atherosclerosis typically causes narrowing of the vessel lumen, however in ectasia luminal dilation due to arterial remodeling of plaques results in expansion of the media and external elastic membrane. Most cases are discovered incidentally via angiography, however CAE often presents as ACS. This occurs because of diminished coronary flow or stagnancy of blood flow causing formation of intracoronary thrombus with embolization distally. Aneurysmal rupture can also occur which can lead to tamponade or fistula formation [3]. Coronary angiography is the gold standard for diagnosing these patients. In this particular case, the patient had diffuse disease causing ischemia which lead to scarring of the myocardium. This led to recurrent ventricular tachycardia which is an unusual presentation of CAE.
- Percutaneous intervention can be considered especially in cases where true ACS is present. Surgery remains the first line therapy for patients, especially with left main coronary artery involvement and/or severe disease [3]. Long-term prognosis remains under investigation. Several studies failed to show a mortality difference between CAE and CAD and concluded that CAE is a variant of atherosclerosis that confers no additional risk [1]. However, the presence of CAE in patients with ACS is linked to recurrent MI and cardiac death [4]. Further study of this disease process is essential for future management.

REFERENCES

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