

A Rare Site for Mycotic Aneurysm in Infective Endocarditis: Inferior Mesenteric Artery Mycotic Aneurysm

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ABSTRACT

INTRODUCTION

Mycotic aneurysm is an abnormal dilation of an artery due to destruction of its wall by an infection. Septic embolization, a rare complication of infective endocarditis is one of the common cause for mycotic aneurysm and is often affects the intracranial arteries.

CASE REPORT

A 50-year-old man presented with abdominal pain and fever for 3 months duration. He was found to have clubbing in fingers and toes and pan systolic murmur in the apical region of the precordium. 2D-Echo cardiogram showed multiple large vegetations in mitral valve with grade 4 mitral regurgitation. The diagnosis of infective endocarditis was made, though the blood culture was negative for any organisms. USS abdomen reveals a round vascular lesion related to inferior mesenteric artery (IMA) indicating pseudo aneurysm and the diagnosis is confirmed by CT-angiogram. Patient was treated with IV antibiotic for 6 weeks, followed by an exploratory laparotomy and ligation of IMA at its origin.

CONCLUSION

Inferior mesenteric artery mycotic aneurysm is a rare complication of infective endocarditis. Arterial ligation alone is one of the surgical options, provided that the infection has been controlled with IV antibiotics and an adequate distal circulation is present.

KEYWORDS

Infective endocarditis; Inferior mesenteric artery; Mycotic aneurysm

INTRODUCTION

Mycotic aneurysm is an abnormal dilation of an artery due to destruction of its wall by an infection. The source of infection could be from direct invasion of organisms from an adjacent tissue following trauma, local infection, Citation: RCA Arunan, A Rare Site for Mycotic Aneurysm in Infective Endocarditis: Inferior Mesenteric Artery Mycotic Aneurysm. Clin Surg J 4(S11): 8-10.

hamatogenous spread or as an embolus from a septic focus. Infective endocarditis is the most common source of septic embolism, usually due to organisms such as staphylococcus, streptococcus and enterococcus species. It can form solitary or multiple aneurysms. It is most

commonly seen in the intracranial arteries, followed by visceral arteries and upper or lower extremity arteries, typically occurring at arterial bifurcations [2]. Delayed treatment can cause progression of the disease to sepsis, spontaneous arterial rupture with significant bleeding and death [1]. Early diagnosis and treatment with intravenous antibiotics and surgical intervention is necessary to reduce complications and mortality.

CASE HISTORY

A 50-year-old gentleman presented with abdominal pain and fever for 3 months duration. Even though the abdominal examination was unremarkable, he had clubbing in fingers and toes with pansystolic murmur in the apical region of the precordium. In the investigations, blood count showed low hemoglobin with normal white cell counts. CRP was high (80 mg/l), chest X-ray revealed cardiomegaly, and 2D-Echo cardiogram showed multiple large vegetations in mitral valve with grade 4 mitral regurgitation. The diagnosis of infective endocarditis was made, though the blood culture was negative for any organisms. Ultra sound scan of the abdomen was done to evaluate the persistent abdominal pain and revealed mild splenomegaly with a round vascular lesion related to inferior mesenteric artery indicating pseudo aneurysm. CT-angiogram revealed a circumferential lesion, located anterior to aortic bifurcation suggestive of inferior mesenteric artery mycotic aneurysm [Figure: 1].

Patient was treated with IV vancomycin for 6 weeks, followed by an exploratory laparotomy. During surgery he was noted to have a fusiform inferior mesenteric artery mycotic aneurysm, extending from the origin of the artery up to more than 5 cm in length [Figure: 2]. The artery was ligated at its origin and bowel viability was assessed to see if there were any ischemic changes. In the absence of any bowel ischemia, abdomen was closed and patient was transferred to ICU for observation. Postoperatively, patient had an uneventful recovery and he was discharged

with the referral for heart valve replacement by the cardiothoracic team later.

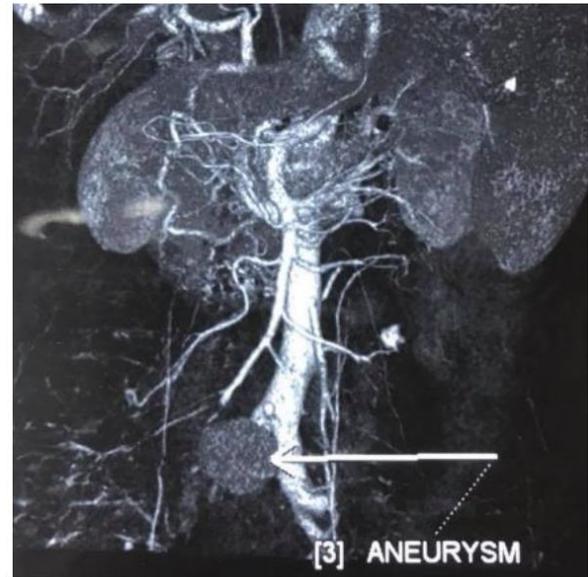


Figure 1: Abdominal CT-angiogram revealed a circumferential lesion, located anterior to aortic bifurcation suggestive of IMA mycotic aneurysm.

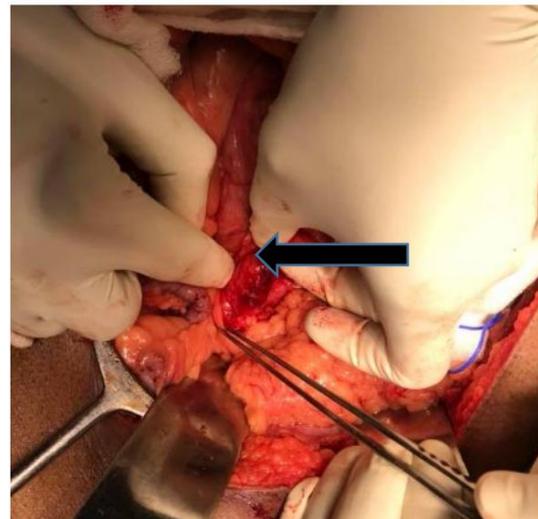


Figure 2: A fusiform IMA mycotic aneurysm, extending from its origin up to more than 5 cm in length. A vascular tape sling applied to the distal part of the IMA.

DISCUSSION

Inferior mesenteric artery mycotic aneurysm is a rare complication of infective endocarditis. Embolism is estimated to occur in between 25 and 50 percent of patients, but only about 1 to 5 percent develop symptomatic mycotic aneurysms. The symptoms and signs of mycotic aneurysms are diverse and can manifest

as symptoms of occult infection which include fever, nausea, weakness, weight loss and fatigue. The symptoms can also be localizing to the involved artery. Investigations which will confirm the diagnosis of mycotic aneurysm are positive blood cultures (bacterial or fungal) in conjunction with imaging (CT angiogram). A negative blood culture does not rule out mycotic aneurysm [1].

Findings on CT angiography suggestive of an infected aneurysm include the following;

- Saccular, eccentric aneurysm or multilobulated aneurysm
- Soft tissue inflammation or mass around a vessel
- Aneurysm with intramural air or air collection around the vessel
- Perivascular fluid collection

There are no randomized trials to guide the management of infected aneurysms. Management strategies are primarily based upon clinical experience guided by case series. The standard treatment of most infected aneurysms is antibiotic therapy combined with surgical intervention. The principles of surgery are to prevent rupture of aneurysm, eliminate the septic focus and re-establishing the distal blood supply. The general standard is ligation

and excision of all infected tissue (including arterial tissue) with bypass grafting to re-establish distal circulation. Bypass can be in-situ or extra-anatomical through a clean, non-infected tissue plane [1]. Arterial Ligation alone is rarely sufficient, provided that the infection is under control and adequate distal blood supply via collateral vessels is present. For patients who refuse surgery or who have significant medical comorbidities that preclude surgical intervention, antibiotic therapy alone is an option. Endovascular techniques are emerging as a treatment alternative for infected aneurysm, most commonly for infected aortic aneurysm

CONCLUSION

Inferior mesenteric artery mycotic aneurysm is a rare complication of infective endocarditis. High clinical suspicion with laboratory testing and imaging provide the definitive diagnosis of this condition. Initial IV antibiotics and surgical intervention is the standard management. Arterial ligation alone is one of the surgical options, provided that the infection has been controlled with IV antibiotics and an adequate distal circulation is present.

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