

Mycotic Aortic Abdominal Aneurysm: A Rare Case

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Background

- Mycotic aneurysm is an aortic aneurysm due to infection
- Incidence of mycotic aneurysm is 0.7-3%.
- Risk factors include arterial injury, antecedent infection, impaired immunity, atherosclerosis and pre-existing aneurysm.
- Blood cultures are positive in 50-85% of cases and 76% of patients have organisms isolated from aneurysmal tissue
- One of the most common causes is Salmonella species
- Patients with blood and/or tissue negative cultures appear less clinically severe and exhibit slower aneurysm expansion rate and smaller number of ruptured aneurysms at initial presentation.
- This case illustrates a patient with negative blood and tissue cultures who did not have a slow growing mycotic abdominal aortic aneurysm

Case Presentation

- 69 year old male with an antecedent infection one month prior to experiencing back pain was found to have a bilobed saccular, 5.3 cm infrarenal aortic aneurysm with surrounding inflammatory changes and adjacent para-aortic lymphadenopathy. CTA abdomen/pelvis obtained the following day revealed an expanding 5.6 cm infrarenal aneurysm with significant mural thrombus and areas of ulceration. Vancomycin and Cefepime were initiated day of admission.
- **Decision-making:** Given the diagnostic findings, patient underwent abdominal aortic aneurysm repair with resection of contained ruptured juxtarenal artery aneurysm and graft placement.
- **Surgical complications:** hemodynamic instability, ischemia right lower extremity for which patient underwent right femoral thromboembolectomy and femoral to femoral artery bypass with graft placement.
- **Post-operative complications:** End organ damage and disseminated intravascular coagulation.
- Patient died 4 days after initial presentation.

Results



Figure 1. CT angiogram: 5.6 cm Infrarenal aneurysm

Table 1. Pertinent Labs Obtained on Day 1 and Day 4 of Admission

	Day 1	Day 4	Reference Range
Estimated Sedimentation Rate	54 mm/hr		0-9 mm/hr
C- reactive protein	11.20 mg/dL		0-0.9mg/dL
White Blood Cells	6.8 k/MM3	20.4 k/MM3	4-10 k/MM3
Platelets	530 k/MM3	60 k/MM3	150-400 k/MM3
Prothrombine time	13.5 seconds	52.3 seconds	11.6-14.6 seconds
International Ratio	1	6	
Activated Prothrombine time	26.1 seconds	57.5	24.28-35.63 seconds
Fibrinogen		17 mg/dL	231-532 mg/dL
Fibrin degradation products		18 ug/mL	<5 ug/mL
Total bilirubin	1 mg/dL	4.6 mg/dL	0-1 mg/dL
Aspartate Amino Transferase	39 U/L	>6000 U/L	15-37 U/L
Alanine Aminotransferase	13 U/L	3247 U/L	10-49 U/L
Alkaline Phosphatase	58 U/L	632 U/L	50-138 U/L

Table 2. Microbiology Results

Blood Cultures	Tissue culture	Anaerobic Culture	Tissue Gram Stain
No growth at 48 hr	No growth at 65 hr	No growth at 7 days	No organisms

Discussion

- Patient had a mycotic aneurysm without a known organism and was on antibiotics that included coverage for Salmonella species
- Diagnosing mycotic aneurysm is difficult as there is no definitive criteria established and has been based on various combinations of the following four criteria:
 - clinical presentation
 - laboratory findings
 - radiological findings on computed tomography or magnetic resonance imaging
 - intraoperative findings
- Surgical intervention is the definitive treatment for removal of all infected tissue with higher perioperative mortality occurring in open surgical repair versus endovascular repair.

Conclusion

- There is no definitive criteria to diagnosing mycotic aneurysms and negative blood and/or tissue cultures are not sufficient to exclude mycotic aneurysm or delay treatment

References

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