

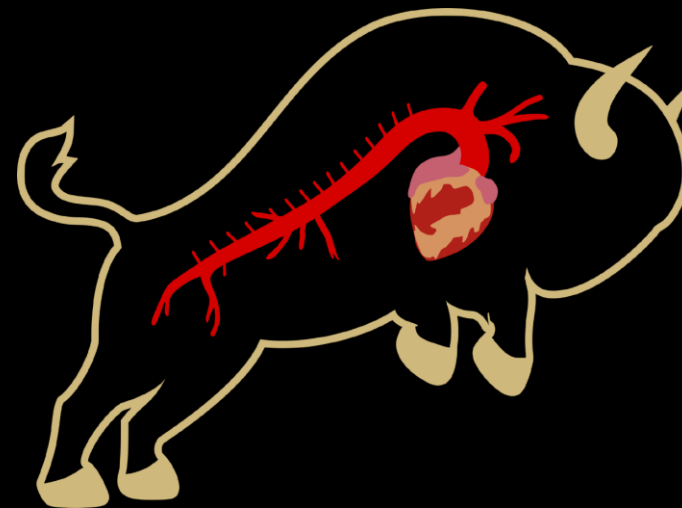
Management and Outcomes of Endocarditis-Related Aortic Root Pseudoaneurysms

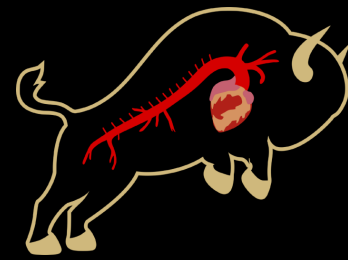
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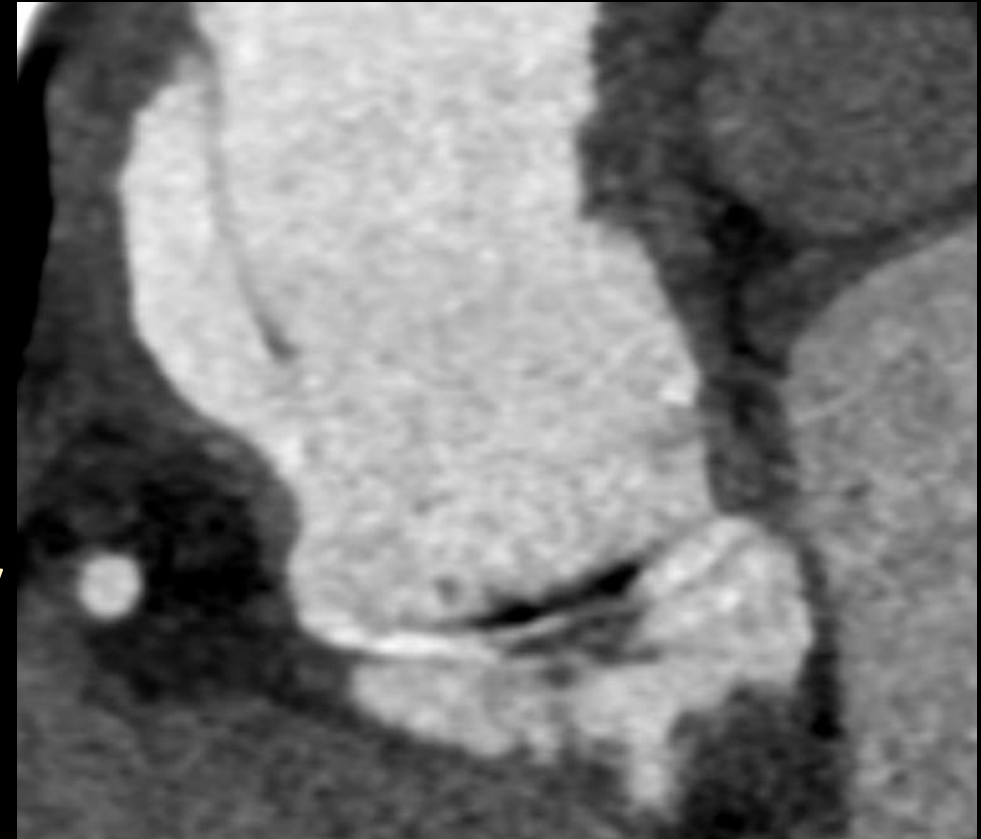
No disclosures





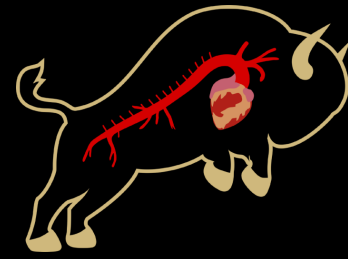
Introduction

- As endocarditis progresses, destruction of the aortic annulus and root occurs, potentially resulting in aortic root pseudoaneurysm (PSA)
- Standard of care focuses on aggressive debridement, reconstruction of destroyed annulus, resection and replacement of any infected valve or root
- Endocarditis-related root PSA limited to case reports, minimal data in larger patient cohorts

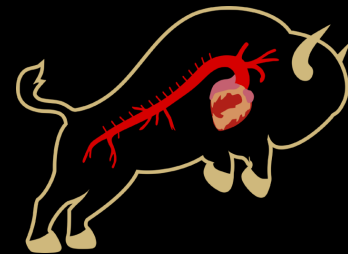


Example of Endocarditis-Related Aortic Root Pseudoaneurysm

Aim

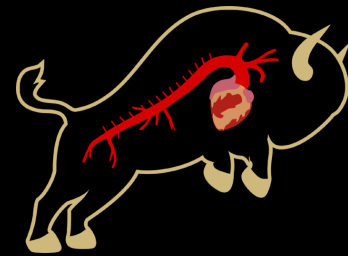


Describe institutional experiences with endocarditis-related aortic root PSA



Methods

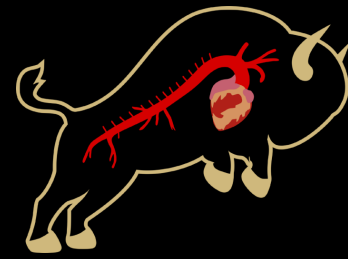
- Single institution-maintained aortic database, identified patients over past decade who developed endocarditis-related root PSA
- Assessed pre-operative characteristics, subsequent management and outcomes



Results

- 15 patients identified
- In addition to infectious symptoms, roughly half of the patients presented with additional cardiovascular symptoms
 - Arrhythmia (predominantly complete heart block)
 - Stroke
 - Pericardial Effusion
- 13 patients (86.7%) had prior aortic valve replacement, with two patients presenting primarily in setting of bicuspid aortic valve

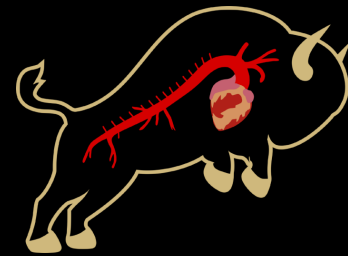
<u>Pre-operative Characteristics</u>	<u>N=15</u>
Age (years)	57.5 (50.5-61.8)
Male	13 (86.7%)
BMI	28.0 (25.3-32.3)
HLD	4 (26.7%)
HTN	8 (53.3%)
Smoking	6 (40.0%)
DM2	2 (13.3%)
CKD	2 (13.3%)
Stroke	4 (26.7%)
History of Bicuspid Aortic Valve	7 (46.7%)
<u>Prior Aortic Interventions</u>	
Prior Sternotomies (N)	1 (1-2)
Prior AV/Arch Surgery Within One Year	4 (26.7%)
Years from Last AV/Arch Intervention	2.0 (1.0-5.0)
Aortic Valve Replacement	13 (86.7%)
Root Replacement	1 (6.7%)
Ascending Aorta Replacement	1 (6.7%)
Coronary Artery Bypass Graft	1 (6.7%)
Coarctation Repair	1 (6.7%)
<u>Cardiovascular Symptoms on Presentation</u>	
Stroke	2 (13.3%)
Pericardial Effusion	2 (13.3%)
Arrhythmia	2 (13.3%)



Results

- All patients required root and valve replacement
- Subset of patients required coronary artery bypass grafting due to destruction of coronary button
- 9 patients had pathology extending distal to root requiring ascending/arch intervention
- 7 (46.7%) of patients had open chest post-operatively

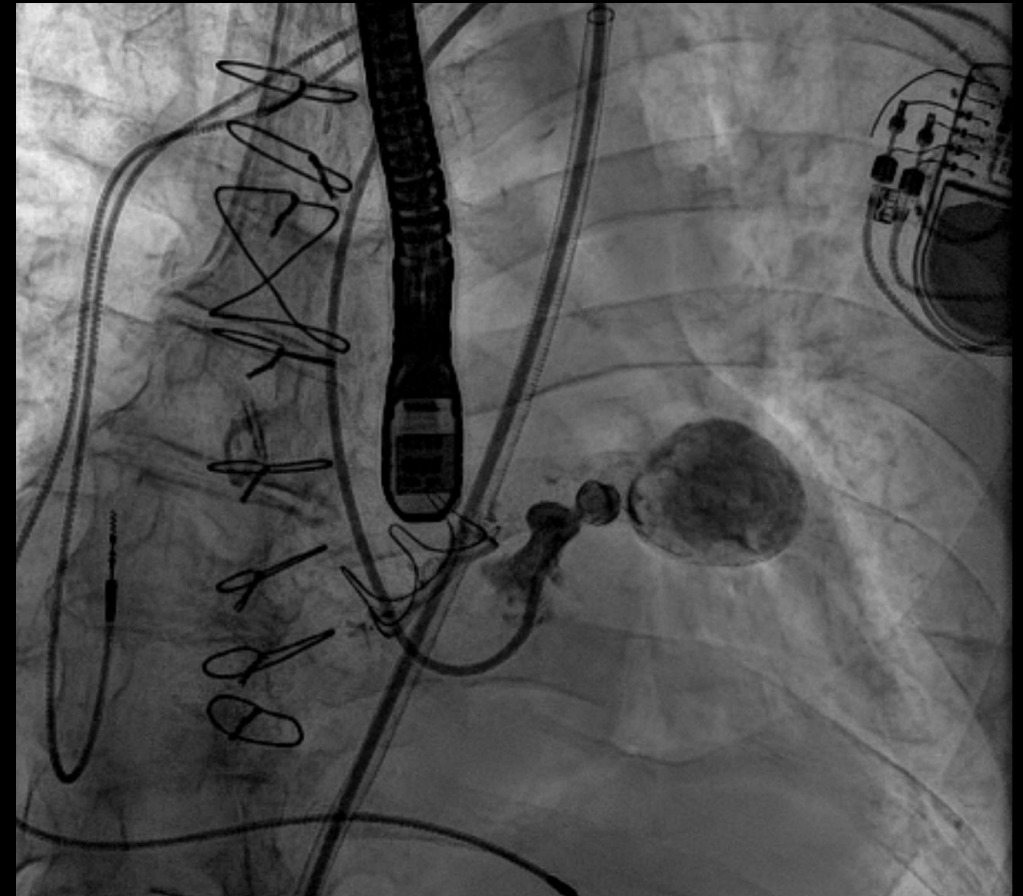
Operative Characteristics	
Root Type	
Mechanical Bentall	2 (13.3%)
Biobentall	9 (60.0%)
Homograft	4 (26.7%)
Adjunctive Procedures Performed	
Ascending Aorta Replacement	3 (20.0%)
Hemiarch	5 (33.3%)
Zone 2 Arch	1 (6.7%)
Mitral Valve Intervention	2 (13.3%)
PFO Closure	1 (6.7%)
Mechanical Circulatory Support	2 (13.3%)
Coronary Artery Bypass Grafting	2 (13.3%)
Intraoperative Statistics	
Nadir Bladder Temperature	29.7 (26.0-30.7)
Cardiopulmonary Bypass Time	206.0 (164.5-252.0)
Aortic Cross-Clamp Time	140.0 (111.5-173)
Circulatory Arrest Time	10.0 (8.25-11.0)
Intraoperative Transfusion	
Packed Red Blood Cells	2.0 (0.0-3.5)
FFP	5.0 (4.0-8.0)
Platelets	3.0 (2.0-4.0)
Open Chest	7 (46.7%)



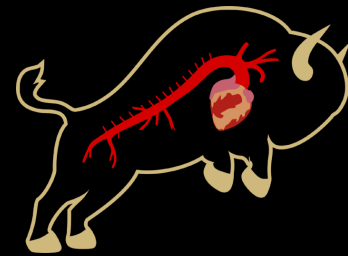
Results

- 7 (46.7%) of patients had significant coagulopathy post-operatively
- No post-operative stroke in cohort
- High perioperative mortality (3, 20.0%)
- One patient had recurrence of their pseudoaneurysm at six months post-operatively
 - Did not have any symptoms or labs suggesting infection, underwent successful endovascular plugging

Post-Operative Outcomes	
New Renal Replacement Therapy	1 (6.7%)
Delirium	3 (20.0%)
Seizure	1 (6.7%)
Prolonged Ventilation	1 (6.7%)
Infection	2 (13.3%)
Arrhythmia	4 (26.7%)
Coagulopathy	7 (46.7%)
Recurrent Pseudoaneurysm	1 (6.7%)
Mortality	3 (20.0%)



Recurrent Root Pseudoaneurysm



Conclusion

- Patients who develop endocarditis-related root PSA often present with life-threatening pathologies given progression of disease
- Operative management often requires extensive intervention, carries high risk of morbidity and mortality
- Given potential for cardiovascular complications if left untreated, decisive surgical treatment with radical debridement and reconstruction is of paramount importance

Questions???

