

SURGICAL APPROACH TO TRICUSPID ENDOCARDITIS COMPLICATED BY SEVERE TRICUSPID REGURGITATION

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INTRODUCTION

Bacterial endocarditis carries a high mortality rate. Right sided valvular involvement have been commonly associated with IV drug use. There is extensive guidance regarding the appropriate treatment strategy and surgical timing for left side valvular involvement. There is paucity data regarding surgical treatment for right-sided valve due to high nonsurgical cure rate with concerns for recurrent infection of prosthetic material. We describe one case with persistent bacteremia and embolic sequelae despite appropriate antibiotic that required surgical intervention.

Clinical Course

A 28-year-old female with intravenous drug abuse and no other past medical history presented to our facility for back pain and fever. She was noted to be febrile and had blood cultures that demonstrated MSSA. Initial Transthoracic Echocardiogram (TTE) was performed that demonstrated a large vegetation involving the tricuspid valve and subvalvular apparatus.

Due to her back pain and bacteremia, a lumbar and thoracic MRI was performed that did not demonstrate any acute pathological findings or explanation for her back pain. A Brain MRI was performed that demonstrated concern for meningitis. Infectious disease was consulted.

After reviewing the MRI, infectious disease did not recommend any further investigation for the MRI findings and the suspicion for neurological involvement was felt to be low. Vancomycin was deescalated to Ancef. Cardiothoracic surgery evaluated the patient and recommend initial medical management.

She continued to have persistent fevers and was unable to clear MSSA from her blood cultures. Cardiothoracic surgery recommend transesophageal echocardiography and at minimum of 10 days of intravenous anti biotic therapy.

Figures

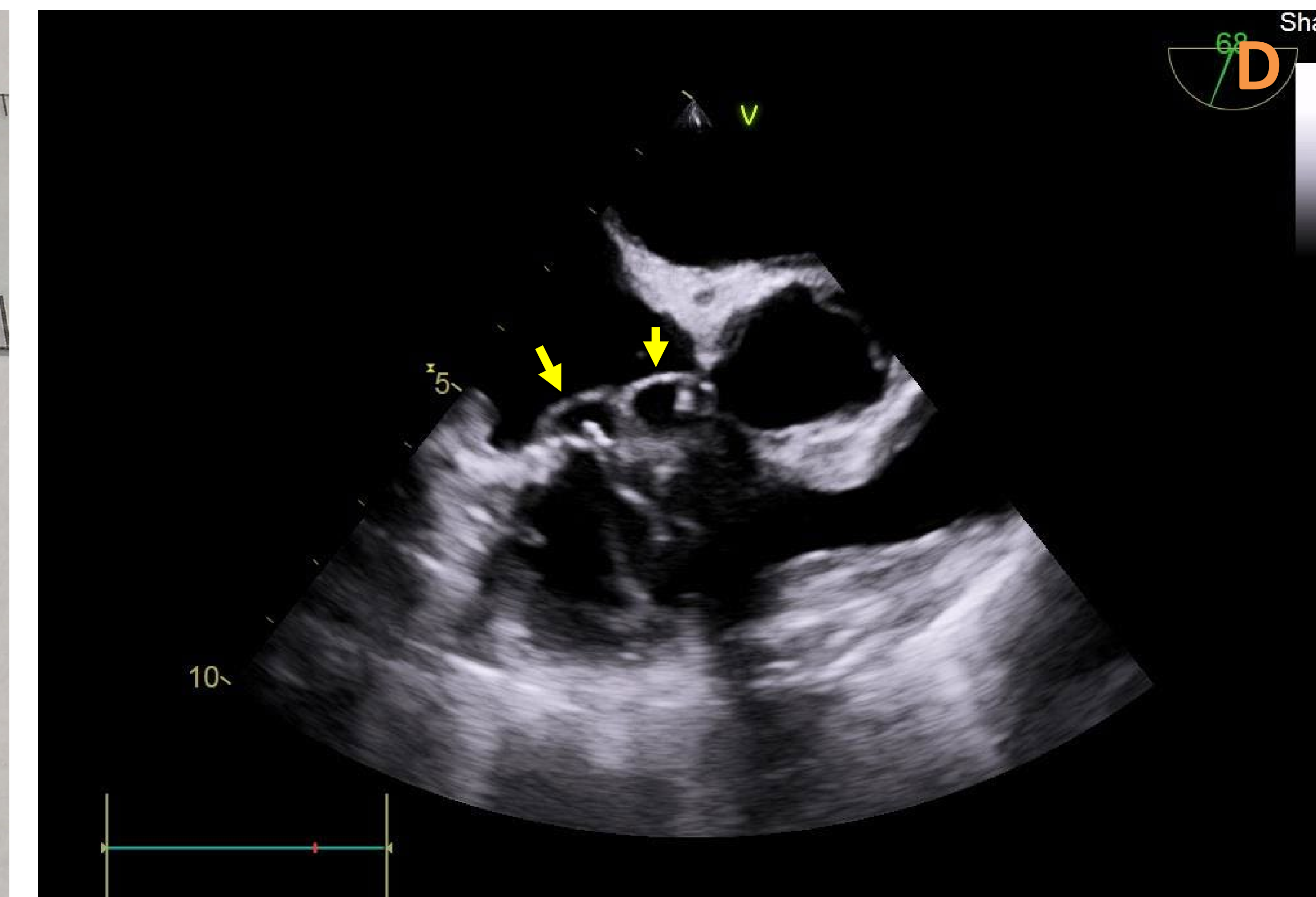
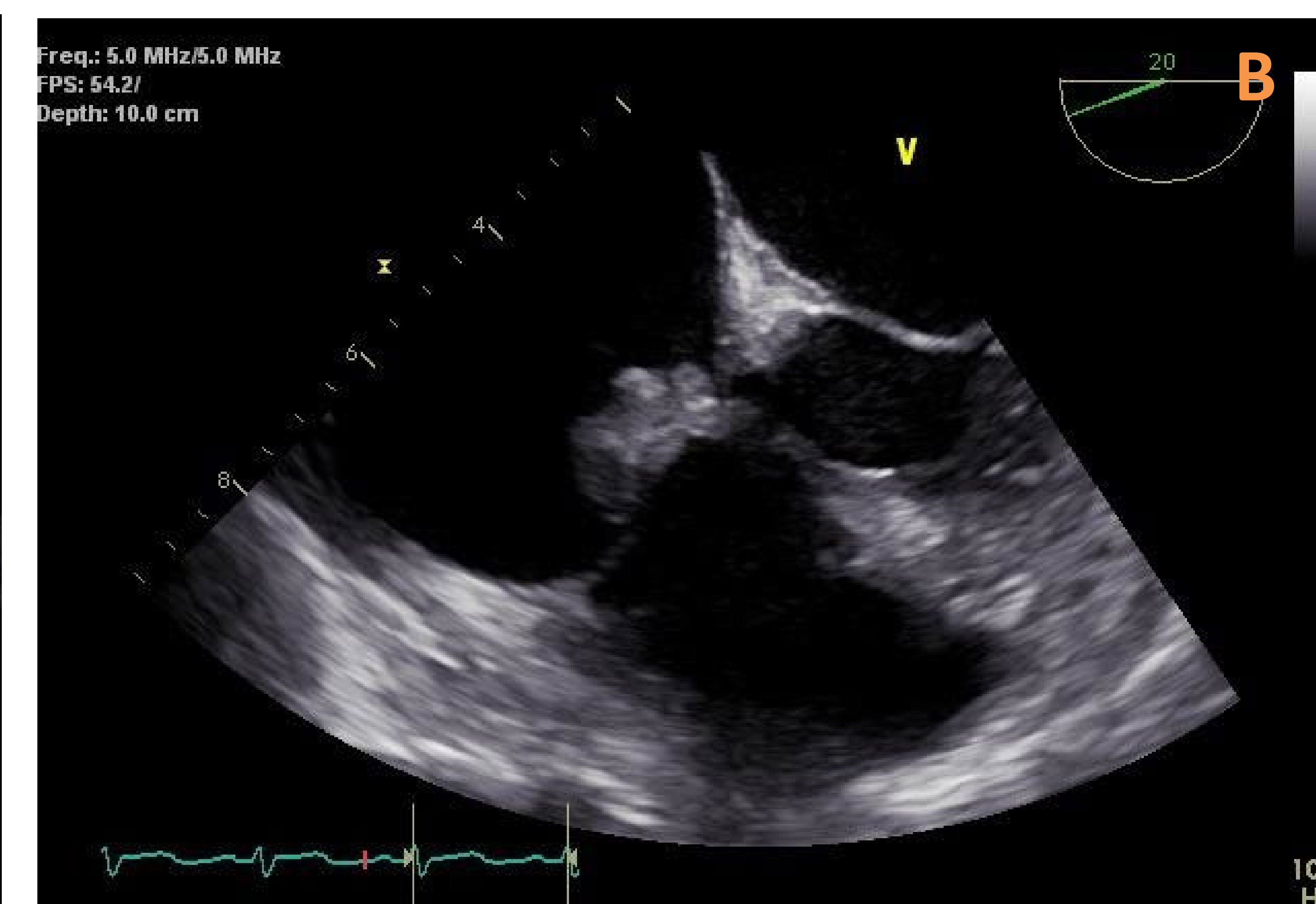
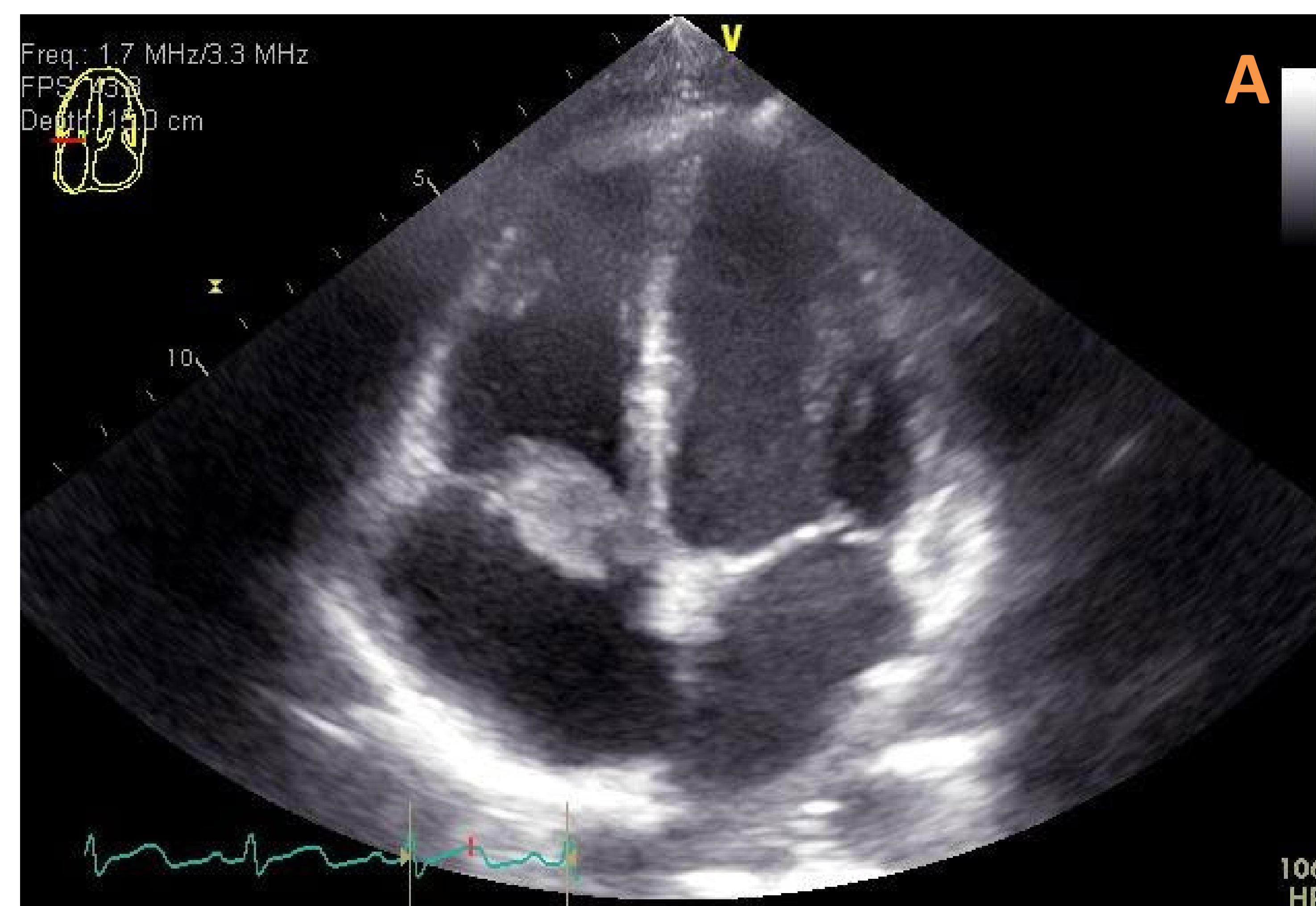


Figure: TTE apical 4 chamber view demonstrated a large vegetation on the anterior and septal leaflets of the tricuspid valve and the subvalvular apparatus with severe tricuspid regurgitation with the largest portion of the vegetation measures 3.0 x 1.1 cm (A). TEE mid esophagus view redemonstrating large vegetation on the anterior and septal leaflets (B). Vegetations extracted from surgical excision (C). Post operative TEE demonstrating extracellular matrix cylinder reconstruction (D).

Reference

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- Szymczyk E, Kaszczyński T, Religa G, Lipiec P, Kasprzak JD. Use of three-dimensional echocardiography for monitoring of tricuspid valve endocarditis treatment with a novel extracellular matrix cylinder reconstruction. *Kardiol Pol.* 2018;76(4):811. doi:10.5603/KP.2018.0085

Clinical Course

Traneseophageal echocardiography (TEE) demonstrated a large mobile vegetation on the tricuspid valve measuring 3.1 x 1.0 cm, moderate to severe tricuspid regurgitation and a PFO with left to right shunt.

As the patient did not improve clinically and remained bacteremic, on hospital day seven, patient underwent surgical intervention including a tricuspid valve replacement with extracellular matrix cylinder reconstruction and a patch closure of her a patent foramen ovale. Intraoperative TEE revealed improved tricuspid regurgitation. She tolerated the procedure well with no post-operative complications and remained on tailored intravenous antibiotic therapy with Daptomycin.

Discussion

The majority of isolated tricuspid valve vegetations could be safely and appropriately treated with antibiotics. Current data do not provide clear guidance on refractory isolated tricuspid vegetation infection with persistent symptoms.

Our case demonstrated excellent infection control and hemodynamic recovery through novel replacement technique that maintained the annuloventricular continuity.

Our patient experienced no immediate or perioperative complication such as heart block, dehiscence, or mechanical complications. Further studies are warranted to address such complex clinical scenarios.

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