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INTRODUCTION

Atrial Septal Aneurysm (ASA) is defined as redundant and mobile interatrial septal tissue in the region of the fossa ovalis with phasic excursion of at least 10 to 15 mm during the cardiorespiratory cycle.

ASA is most commonly an incidental finding. Some patients with ASA present with systemic thromboembolism and some present with symptoms and signs of intracardiac shunting via one or more associated atrial septal defects.

Transesophageal echo(TEE) is superior for detection

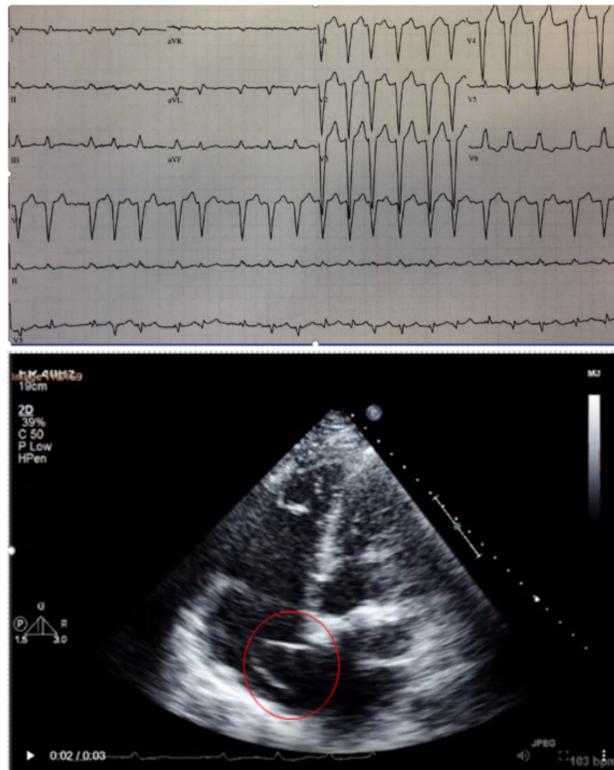
Transthoracic echo (TTE) may miss up to 47% of ASA

Several case reports of ASA with adherent thrombus at surgery or autopsy

Isolated case report of ASA containing thrombus ihave been identified by TTE

Asymptomatic patients: no treatment

Decision Making



TTE revealed 2 x 2 cm density in right atrium with unchanged LVEF.

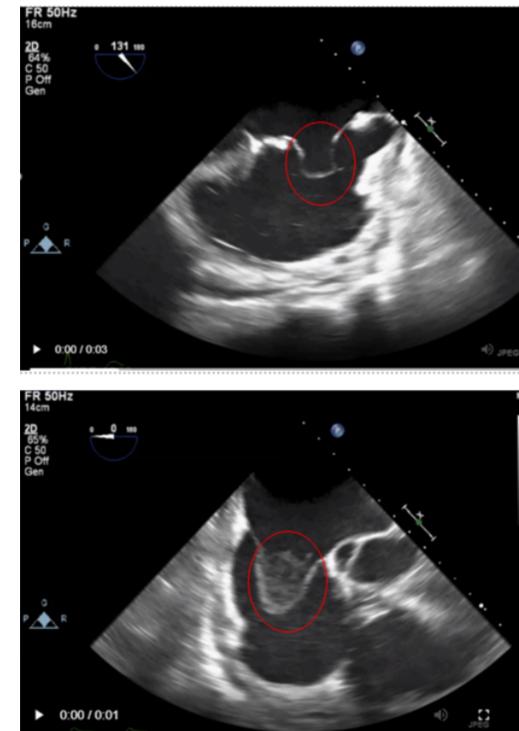
Decision for **cardioversion** was made.

Transesophageal echocardiography (TEE) was negative for left atrial appendage thrombus but interestingly **a dense spontaneous echo contrast with fixed right sided deviation of atrial septum was noted.**

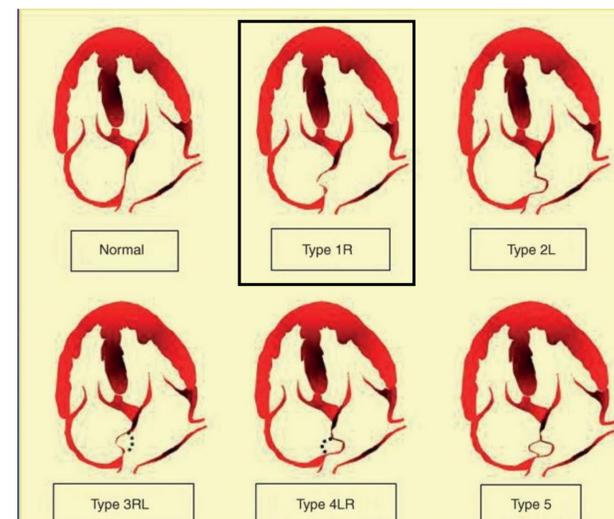
Diagnosis of **type 1R atrial septum aneurysm** was confirmed.

He was **discharged on coumadin for four weeks and advised to closely follow up with cardiology clinic for long-term anticoagulation (LAC) extensive after risk benefit analysis**

Case continued



TEE showing atrial septal aneurysm with spontaneous echo contrast



Type 1R ASA

Dense spontaneous echo contrast: “steaming teapot”

LA pressure > RA pressure: fixed deviation

Stagnation: possible thrombus formation

CONCLUSION

Isolated ASA presenting as right atrial density on TTE is a rare entity and the diagnosis may be confirmed by TEE.

While evaluating the risk factors for AF, ASA should also be on the differential even though the studies have not proven if it is related to pathogenesis of arrhythmia.

In patients with isolated ASA and new-onset AF with no other underlying cardiovascular risk factors, a close follow up should be considered to prevent development of cardiovascular risk factors as it can predispose to stagnation of blood in the aneurysmal pouch in patients who are already at risk of thrombus formation.

Management of Isolated Atrial Septal Aneurysm

- Asymptomatic patients: no treatment
- Neurologic events: aspirin (fibrin/platelet aggregates)
- Recurrent neurologic events: warfarin
- In *very rare cases*, surgery for recurrent events while on warfarin

What to do if the patient has concomitant ASA and AF s/p cardioversion?

Patients with new onset AF s/p cardioversion with with CHA2DS2-VASc Score 0 may not require long term anticoagulation. But such patients with ASA may be considered for long term anticoagulation.

Decision regarding initiation of long term anticoagulation in concomitant isolated ASA and new onset cardioverted AF remains a fundamental challenge with no established guidelines.

Given the high burden of cardioembolic potential, guidelines for surveillance and long term anticoagulation need to be established in isolated ASA with new onset AF with no underlying cardiovascular risk factors.

Case Presentation

47-year man with remote history of cocaine use presented with palpitations, and exertional dyspnea for 2 days.

Cardiac and lung examination were remarkable for soft systolic click in the left lower sternal border and bilateral basilar crackles.

EKG demonstrated atrial fibrillation (AF) with rapid ventricular response.

Transthoracic Echocardiography (TTE) done ten years ago showed LVEF of 55% with no report of valvular defects.

Parenteral diuresis, rate control agent and anticoagulation were initiated.

Repeat TTE revealed 2 x 2 cm density in right atrium with unchanged LVEF.

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