

Young and Silent: Curious Case of Silent Right Atrium in 30-year-old

S Alkoutami, M Coronado Melendez, S Ibarra Lepe, A Chapagain, L Jordan, D Morris
ECU Health Medical Center

BACKGROUND

Silent right atrium is uncommon
Absence of electrical or mechanical activity in the right atrium.
Atrium fails to depolarize and generate electrical impulses → Lack of atrial contraction.
Symptoms: palpitations, chest pain, shortness of breath, and dizziness.
Idiopathic or secondary to electrical conduction abnormalities, cardiomyopathies (acquired or congenital), antiarrhythmic medications, electrolyte imbalances, and thyroid dysfunction.
Diagnosis:

- EKG - bradycardia, the absence of P waves, and wide QRS complexes.
- ECHO - akinetic and dilated right atrium

Treatment is targeted to treating the underlying condition +/- PPM

CLINICAL SUMMARY

30-year-old female with no PMH
C/o DOE and chest pain with associated lower extremity edema.
Patient found with a heart rate in the 40s.
EKG showed a junctional rhythm with no discernible P waves.
Repeat EKG showed Afib with a slow ventricular response.
TTE showed moderate bi-atrial enlargement with a normal LVEF of 50-55%, and mild to moderate anterior, mid and basal anteroseptal wall hypokinesis. cMRI and TEE showed bi-atrial enlargement.
Negative for fibrosis and emboli.
Electrophysiology study (EPS) showed an electrically silent RA, normal His-purkinje conduction, and group beating in pairs.
A leadless ventricular pacemaker was placed.
Lyme disease workup was negative.

CONCLUSION

This case is unique for several factors including the patient's demographics, the patent functional status of right atrium and tricuspid valve despite dilation, and a possible idiopathic etiology
Idiopathic dilation of any atrium is extremely rare and is usually associated with a congenital defect, which excludes our patient.
There has been an association with complete atrial mechanical standstill and RAS. While our patient did have akinesis and hypokinesis of the septal wall on TTE, her right atrium was mechanically contracting properly.

Conclusion
The LV ejection fraction is normal.
Ejection Fraction = 50-55%.
Mild to moderate anterior, mid, basal anteroseptal wall hypokinesis
Moderate bi-atrial enlargement
The inferior vena cava is normal in size, with a normal collapsibility index.

Figure 1. ECHO report demonstrating bilateral atrial enlargement