Shaky Septum: A case of bilateral Cerebrovascular accident in a young healthy male

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Introduction

- Transient ischemic attack/cerebrovascular accidents (TIA/CVA) are common encounters in hospitals.
- Studies such as computerized tomography (CT) scan, magnetic resonance imaging (MRI), carotid artery Doppler, transthoracic echo (TTE) and transesophageal echo (TEE) are routinely done to assess and treat the acute condition. Cardiac conditions such as atrial septal defect, atrial fibrillation and atrial flutter are frequently associated with TIA/CVA.
- We present a case of CVA in a young male, incidentally found to have an atrial septal aneurysm (ASA) on a transesophageal echo (TEE) despite transthoracic echo (TTE) being negative.

Case Presentation

A healthy 53-year old male presented with 5 hour history of aphasia and right upper and lower extremity weakness. His National Institutes of Health Stroke Scale was 17. Computerized Tomography (CT) scan of the head revealed an acute left middle cerebral artery (MCA) CVA. Cerebral perfusion scan did not show any salvageable penumbra or retrievable clot. 81mg Aspirin and 40mg Atorvastatin were initiated. Even though electrocardiogram was negative for arrhythmias, Magnetic resonance imaging (MRI) revealed left MCA infarct with multiple acute bilateral lacunar infarcts. TTE only showed stage I diastolic dysfunction but his TEE showed a large ASA with about 2 cm excursion and small right to left shunt. Warfarin-heparin bridge was initiated as ASA increases the risk of thromboembolic events. During hospital stay, he had a hemorrhagic conversion of his ischemic stroke so warfarin was held. Once repeat head CT confirmed a stable hemorrhagic infarct, his aspirin was discontinued and warfarin was resumed as benefits outweighed the risks. He was discharged on warfarin with goal INR of 2-3.

Discussion

- This is a case of left MCA infarct with multiple acute bilateral lacunar infarcts suggestive of cardioembolic etiology.
- TEE detected ASA with a tiny shunt despite TTE being unremarkable. There is limited data available on ASA as a potential cause of acute CVA.

Conclusion

- ASA is a congenital deformity of the inter-atrial septum consisting of mobile tissue in the region of fossa ovalis with phasic excursions.
- ASA with excursions >10 mm are at 8x higher risk of CVA than <10 mm.
- Concomitant Patent Foramen Ovale and ASA has higher risk of CVA than isolated etiologies.
- Treatment includes life-long anticoagulation and if necessary, surgical repair.
- In summary, for patients presenting with CVA with no significant risk factors, a normal TTE should not undermine the value of TEE in assisting to diagnose uncommon etiologies like ASA.

Reference