Multiple Embolic Stroke On The Setting Of New Onset Atrial Fibrillation And Huge Left Atrial Appendage Thrombus: How To Approach And Manage.

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Introduction

Atrial fibrillation (AF) significantly increases thromboembolic risks, with many strokes in older adults attributed to it. Warfarin, a standard countermeasure, is often underutilized. Current guidelines recommend anticoagulation around cardioversion to prevent LAA thrombus. However, unique cases, as highlighted in this report, emphasize the necessity for individualized approaches in complex AF patients.

Case Presentation

- 57-year-old woman presented with right-sided weakness.
- Diagnosed with acute infarctions in left cerebral hemisphere.
- Treated with tPA, resulting in partial improvement.
- TEE showed large LAA thrombus and ejection fraction of 25-30%.
- Initiated bridging anticoagulation using warfarin (**INR 3.0-3.5**) due to high stroke risk.

Unique Aspects of the Case

- Persistence of a large LAA thrombus despite tPA treatment and decreased LVEF.
- Undetermined cause for reduced heart function, leading to LAA thrombus formation.
- Challenge in diagnostics: Risk with stress tests, preference for CT angiogram.
- Unconventional approach: Maintenance of low-grade atrial fibrillation and tailored spironolactone prescription.

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Images

Figure 1. Large Left Atrial Appendage Thrombus on Echocardiogram.

Figure 2. Multiple foci of infarction on MRI in frontal, parietal and temporal cortex.

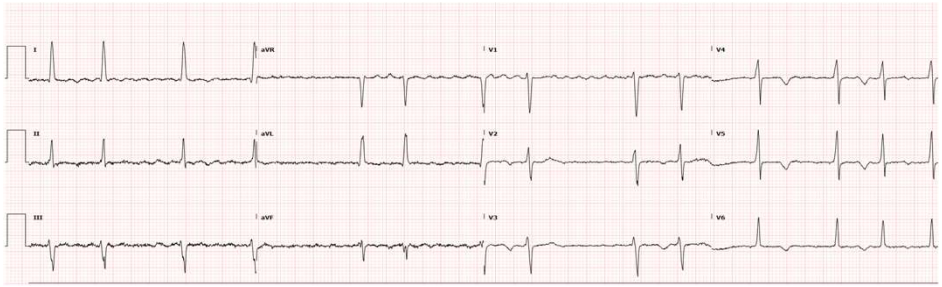

Figure 3. Patient EKG showing Atrial fibrillation

Discussion

- Persistent large thrombus even after tPA treatment.
- Need to maintain low-grade atrial fibrillation to prevent thrombus dislodging, increasing stroke risk [1].
- Atrial fibrillation likely caused heart failure and LAA thrombus.
- INR 3.0 – 3.5 is the optimal range for warfarin in this patient. Current guideline only suggests 2.0 – 3.0.
- Chose CT angiogram over typical stress test as a safer alternative [2].

Conclusion

- Complex management required for patients with atrial fibrillation, heart failure, and significant LAA thrombus.
- Highlights the need for personalized treatment and further research on the interplay of reduced ejection fraction, atrial fibrillation, and thrombus formation.

References

1. Zhan Y, Joza J, Al Rawahi M, Barbosa RS, Samuel M, Bernier M, Huynh T, Thanassoulis G, Essebag V. Assessment and Management of the Left Atrial Appendage Thrombus in Patients With Nonvalvular Atrial Fibrillation. Can J Cardiol. 2018 Mar;34(3):252-261. doi: 10.1016/j.cjca.2017.12.008. Epub 2017 Dec 15. PMID: 29395705.
2. Arbab-Zadeh A, Di Carli MF, Cerci R, George RT, Chen MY, Dewey M, Niinuma H, Vavere AL, Betoko A, Plotkin M, Cox C, Clouse ME, Arai AE, Rochitte CE, Lima JA, Brinker J, Miller JM. Accuracy of Computed Tomographic Angiography and Single-Photon Emission Computed Tomography-Acquired Myocardial Perfusion Imaging for the Diagnosis of Coronary Artery Disease. Circ Cardiovasc Imaging. 2015 Oct;8(10):e003533. doi: 10.1161/CIRCIMAGING.115.003533. PMID: 26467105; PMCID: PMC6604852.

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