LETTER TO THE EDITOR

Peridevice leaks after left atrial appendage occluders. Frequency and relationship with stroke and systemic embolic events

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The results of the use of left atrial appendage occlusion devices in patients with atrial fibrillation have recently been reported. In the randomized controlled study Amulet IDE, 1,878 patients in 108 hospital centers were compared using two types of occluders. Although the 3-year results are quite encouraging from the point of view of freedom from the use of warfarin [Amulet (96.2%) vs Watchman (92.5%] [1], it is worth highlighting the rate of systemic embolism and/or stroke after the application of such devices (5.0% vs 4.6%, respectively). Of note, the peri-device leak (PDL) ≥3 mm is related to and can lead to ischemic events and/or stroke, as well as cardiovascular deaths [1].

The FDA has accepted a PDL≤5 mm as an adequate "closure" after application of the occluder, and allows the interruption of the use of warfarin, being replaced by dual antiplatelet therapy [2]. However, the clinical consequences of these PDLs may be devastating. A PDL≤5 at 1-year increases the 5-year risk of stroke or systemic embolism (HR: 1.94; 95% CI: 1.15-3.29; P = 0.014) [2].

To bear in mind the frequency of PDL after occlude devices. At 1-year, PDL was present in 32% of the series. Out of them, 36.8% were >3mm. In such cases, with any flow present, discontinued warfarin was related to stroke or embolism with a HR of 0.74 (CI: 0.31–1.79) versus 0.63 (0.14–2.71) with continued warfarin [3]. In such a way that incomplete closure of the left atrial appendage (LAA) seems to be an independent predictor of stroke or systemic embolism.

That goes without saying the results coming from surgical experience in LAA closure [4]. In a study by Aryana et al. demonstrated that the annualized stroke and systemic embolization risk was 6.5%; however, it can be increased up to 14.4% when not using warfarin, and up to 19.0% when a PDL ≤5.0 mm was present. Stroke risk was 5-fold higher than expected [5].

To sum up, PDL ≤5 mm can be seen up to one in three after LAA occluder devices. PDL ≤5 mm is associated with an increasing stroke and/or systemic embolism rates. In turn, it can be even worse when oral anticoagulants are interrupted after procedure.

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REFERENCES

1. Lakkireddy D, Thaler D, Ellis CR, et al. 3-Year Outcomes from the Amplatzer Amulet Left Atrial Appendage Occluder Randomized Controlled Trial (Amulet IDE). JACC Cardiovasc Interv. 2023;16(15):1902-1913. doi: 10.1016/j.jcin.2023.06.022.
2. Dukkipati SR, Holmes DR Jr, Doshi SK, et al. Impact of Peridevice Leak on 5-Year Outcomes After Left Atrial Appendage Closure. J Am Coll Cardiol. 2022;80(5):469-483. doi: 10.1016/j.jacc.2022.04.062.
3. Viles-Gonzalez JF, Kar S, Douglas P, et al.The clinical impact of incomplete left atrial appendage closure with the Watchman Device in patients with atrial fibrillation: a PROTECT AF (Percutaneous Closure of the Left Atrial Appendage Versus Warfarin Therapy for Prevention of Stroke in Patients with Atrial Fibrillation) substudy. J Am Coll Cardiol. 2012 Mar 6;59(10):923-9. doi: 10.1016/j.jacc.2011.11.028.
4. Garcia-Villarreal OA. Surgical Closure of the Left Atrial Appendage. Basal Considerations before attempting with Occluder Devices. J Surg Open Access 2017; 3(2): doi http://dx.doi.org/10.16966/2470-0991.144.
5. Aryana A, Singh SK, Singh SM, et al. Association between incomplete surgical ligation of left atrial appendage and stroke and systemic embolization. Heart Rhythm. 2015;12(7):1431-7. doi: 10.1016/j.hrthm.2015.03.028.

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