What Lies Beneath Left Atrial Appendage Occlusion

Know Your Enemy

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The importance of PDL, defined as flow past the lobe of the Amplatzer device or the Watchman device into the fundus of the LAA, was scrutinized for a relationship with dual antiplatelet therapy by the authors. They found none. This confirms earlier studies.5-9 It had even been suggested that repositioning a device to decrease the risk of PDL may not be justified because this maneuver may increase the risk for pericardial bleeding.7

An important lesson of the article is that not only Amplatzer devices but also Watchman devices can be used safely with a post-treatment of only antiplatelet agents. This has been the rule for Amplatzer devices from the start.10-12 For the Watchman device, 6 weeks of oral anticoagulation is still standard, although literature on a simplified treatment with antiplatelet only is accruing.13,14 It might be questioned whether the 3 doses of low–molecular weight heparin given to the patients described in this study immediately after implantation laid a more favorable ground for thrombus-free future evolution compared with a therapy completely based on antiplatelets as it is usually adopted after Amplatzer implantation. Reports using no heparin or oral anticoagulation after implantation and even stopping platelet inhibitors completely after a few months in patients with no other indications for it showed during follow-up either more or less than the 7% DRTs observed in this study. They used exclusively transesophageal echocardiography for follow-up examination and the definition of thrombus varied. It was 4% to 5%3 in studies with anticoagulation, if at all possible.

Clinical events associated with DRT found on routine examinations are invariably low (≤1%). So, not only PDLs but also most DRTs represent more a cosmetic than a clinical problem.

Nonetheless, we must have a common language defining PDL and DRT. The Amplatzer device has 2 kinds of leaks, a leak just reaching the space between lobe and disc and a leak reaching the fundus of the LAA. The Watchman device can only have the latter. The pacifier principle with Amplatzer devices is meant to decrease PDLs and has been shown to be effective in that respect if only leaks are counted that reach the fundus of the LAA. Such PDL rates were 5% for Amplatzer devices and 15% for Watchman devices in this study.1 Again, there is probably no clinical meaning to that.

There must be a clinical meaning to undulating DRTs although that has not been specifically examined to date. The Figure depicts various types of DRTs and points out the ones that represent a clinical hazard and should entail reinforced anticoagulation, if at all possible.

The informative article shows that the 2 market leader devices for LAA occlusion have a similarly low potential for
clinically relevant DRT. It showed a 3x larger but still clinically insignificant risk for PDL in the case of the Watchman device. DRTs can usually be treated safely with a simple antiplatelet regimen which usually consists of dual antiplatelet therapy for at least 1 month (a single antiplatelet agent may suffice, but this was never examined). This is important as the most common indication for LAA occlusion is poor or no tolerance for oral anticoagulation and every day the patient can spend without oral anticoagulation is a blessing.

Major banes of LAA occlusion remain the relative intricacy of implantation with a shallow learning curve and the risk of acute complications such as pericardial bleeding and device embolization. Periprocedural ischemic events can almost completely be avoided with proper technique and pre-implantation imaging excluding mobile thrombi on the way. Follow-up clinical problems are fortunately extremely rare, and this constitutes the major advantage of LAA occlusion over continued oral anticoagulation with unrelenting and even increasing risk for bleeding over time.

Transesophageal echocardiography or computer tomography imaging on the lookout of silent DRT may be justified at least once but only the dangerous types (Figure) should be reacted to. PDL does not need to be looked for or if found to be reacted on. Exceptions are those already appearing as uncovered lobes at the end of the implantation procedure.

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**References**


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