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Transcatheter Left Atrial Appendage Occlusion Using Amulet and WATCHMAN Devices: A Five-Year Single-Centre Experience

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Introduction: Transcatheter left atrial appendage occlusion (LAAO) offers an alternative stroke-prevention strategy for patients with atrial fibrillation (AF) who have contraindications to long-term oral anticoagulation or a high bleeding risk[1]. We report our five-year single-centre experience using Amplatzer Amulet and WATCHMAN devices.

Patients and Methods: This retrospective observational study included all attempted LAAO procedures between June 2021 and October 2026. Procedural characteristics, implantation success and complications through hospital discharge were compared between devices in LAAO-only procedures, excluding concomitant pulmonary vein isolation (PVI).

Results: A total of 84 patients (60% male; mean age 72.3 ± 7.8 years; mean CHA-DS-VASc score 4.1 ± 1.5; mean HAS-BLED score 2.2 ± 0.8) underwent attempted LAAO with Amulet (n = 37; 44%) or WATCHMAN (n = 47; 56%); 22 (26%) underwent concomitant PVI. Comorbidities included hypertension (89%), chronic kidney disease (44%), heart failure (40%) and diabetes (29%). Prior clinically significant bleeding was the leading indication (60 patients; 71%), comprising gastrointestinal bleeding (36), intracranial bleeding (16) and hematuria (8). Device implantation was successful in 73 of 84 attempted procedures (86.9%), with unsuccessful attempts predominantly attributed to unfavorable LAA anatomy. Mean procedure duration was 61.7 ± 22.4 min, mean fluoroscopy time 8.1 ± 4.1 min and median radiation dose 273 mGy (IQR 110–665). Nine adverse events occurred in eight patients (9.5%): six access-site hematomas >5 cm, two arteriovenous fistulas and one pericardial effusion; one patient experienced both a hematoma and fistula. No cardiac tamponade or procedure-related stroke occurred. Among LAAO-only procedures (Amulet, n = 36; WATCHMAN, n = 26), procedure duration was shorter with WATCHMAN (median 43 [IQR 38–54] vs 60 [IQR 50–75] min; p < 0.001). Fluoroscopy time (5.2 vs 6.0 min; p = 0.199), radiation dose (318 vs 328 mGy; p = 0.451) and implantation success (80.8% vs 88.9%; p = 0.473) did not differ significantly. Complications occurred in six Amulet patients (16.7%) versus none with WATCHMAN (p = 0.035). Across the full cohort, five of seven Amulet-associated adverse events occurred in 2021–2022.

Conclusion: Our five-year single-centre experience supports the feasibility of transcatheter LAAO using Amulet and WATCHMAN devices, with successful acute implantation in the majority of patients and a predominantly access-site-related periprocedural complication profile. Differences in procedural outcomes between devices may partly reflect the learning curve associated with the early years of the programme.

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LITERATURE

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