



ORIGINAL ARTICLE

Percutaneous closure of the left atrial appendage for prevention of thromboembolism in atrial fibrillation for patients with contraindication to or failure of oral anticoagulation: A single-center experience[☆]

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appendage;
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Cardiac implant

Abstract

Introduction: In non-valvular atrial fibrillation 90% of thrombi originate in the left atrial appendage (LAA). Percutaneous LAA closure has been shown to be non-inferior to warfarin for prevention of thromboembolism.

Objective: To evaluate the initial experience of a single center in percutaneous LAA closure in patients with high thromboembolic risk and in whom oral anticoagulation was impractical or contraindicated or had failed.

Methods: Patients with non-valvular atrial fibrillation and CHADS₂ score ≥ 2 in whom oral anticoagulation was impractical or contraindicated or had failed underwent percutaneous LAA closure according to the standard technique. After the procedure, dual antiplatelet therapy was maintained for one month, followed by single antiplatelet therapy indefinitely. Patients were followed by clinical assessment and transthoracic and transesophageal echocardiography.

Results: The procedure was performed in 22 of the 23 selected patients (95.7%), mean age 70 ± 9 years, CHADS₂ score 3.2 ± 0.9 and CHA₂DS₂-VASC score 4.7 ± 1.4 . Intraprocedural device replacement was necessary only in the first patient, due to oversizing. The following periprocedural complications were observed: one femoral pseudoaneurysm, three femoral hematomas and two minor oropharyngeal bleeds, resolved by local hemostatic measures. During a 12 ± 8 month follow-up a mild peri-device flow and a thrombus adhering to the device, resolved under with enoxaparin therapy, were identified. The rate of transient ischemic attack (TIA)/stroke was lower than expected according to the CHADS₂ score (0 vs. $6.7 \pm 2.2\%$).

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PALAVRAS-CHAVE

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Implante cardíaco

Conclusions: In our initial experience, this procedure proved to be a feasible, safe and effective alternative for atrial fibrillation patients in whom oral anticoagulation is not an option. Only relatively minor complications were observed, with a lower than expected TIA/stroke rate.

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Encerramento percutâneo do apêndice auricular esquerdo paraprofilaxia de tromboembolismo na fibrilhação auricular em doentes com contra-indicação ou falência da hipocoagulação oral: experiência de um serviço

Resumo

Introdução: Na fibrilhação auricular não valvular, 90% dos trombos originam-se no apêndice auricular esquerdo. O seu encerramento percutâneo mostrou ser não inferior à varfarina na profilaxia do tromboembolismo.

Objetivo: Avaliar a experiência inicial de um centro no encerramento percutâneo do apêndice auricular esquerdo em doentes com elevado risco tromboembólico sem possibilidade, com contra-indicação ou falência da anticoagulação oral.

Métodos: Doentes com fibrilhação auricular não valvular, $score$ CHADS₂ ≥ 2 sem possibilidade, com contra-indicação ou falência da anticoagulação oral foram submetidos a encerramento percutâneo do apêndice auricular esquerdo de acordo com a técnica padrão. Após implantação, foi mantida dupla antiagregação durante um mês e simples indefinidamente. Realizado seguimento com avaliação clínica, ecocardiografia transtorácica e transesofágica.

Resultados: O procedimento foi conseguido em 22 dos 23 doentes selecionados (95,7%): 70 \pm 9 anos, $score$ CHADS₂ de 3,2 \pm 0,9 e CHA₂DS₂-VASC de 4,7 \pm 1,4. Apenas no primeiro doente o dispositivo foi substituído por sobredimensionamento. Foram observadas as seguintes complicações periprocedimento: um pseudoaneurisma femoral, 3 hematomas femorais e 2 hemorragias da orofaringe, resolvidos com medidas locais. Durante o seguimento de 12 \pm 8 meses foram identificados um fluxo peridispositivo ligeiro e um trombo aderente ao dispositivo - que resolveu sob enoxaparina. A taxa de AVC/AIT foi inferior à esperada com base no $score$ CHADS₂ (0 versus 6,7 \pm 2,2%).

Conclusões: Na nossa experiência inicial este procedimento mostrou ser uma alternativa exequível, segura e eficaz em doentes com fibrilhação auricular para os quais a anticoagulação oral não é uma opção. Foram identificadas complicações de baixa severidade, com uma taxa de AVC/AIT inferior à esperada.

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Introduction

Atrial fibrillation (AF) is a common cardiac arrhythmia in clinical practice. Its prevalence in Portugal is 2.5% in those aged 40 or over according to the FAMA study.¹ The figure in the general population is 1–2%, rising with age; prevalence has increased significantly over time and is predicted to double in the next 50 years.²

AF is associated with high morbidity and mortality due to its thromboembolic potential; it doubles the risk of death independently of other factors and increases the risk of stroke five-fold compared to individuals of the same age in sinus rhythm.^{2,3} The large size of the thrombi that cause these strokes means that their consequences tend to be more severe than from other sources of cerebral thrombi, are often fatal or severely disabling, and are more likely to recur.^{2–6}

The thromboembolic potential is similar for all forms of AF, including paroxysmal.^{1–3} The method for assessment of stroke risk in AF recommended by the European Society

of Cardiology is the CHADS₂ score, which is based on a point system in which 2 points are assigned for a history of stroke or transient ischemic attack (TIA) and 1 point each is assigned for age >75 years, a history of hypertension, diabetes, or recent cardiac failure. A CHADS₂ score ≥ 2 corresponds to a stroke risk of $\geq 4\%$ /year and is an indication for oral anticoagulation (OAC). For a CHADS₂ score of 0 or 1 the decision on whether to institute OAC should be reassessed considering 'clinically relevant non-major' risk factors using the CHA₂DS₂-VASC score, which assigns 2 points for a history of stroke or TIA, or age ≥ 75 ; and 1 point each for age 65–74 years, a history of hypertension, diabetes, recent cardiac failure, vascular disease (myocardial infarction, complex aortic plaque, and peripheral arterial disease), and female gender. OAC is indicated for a CHA₂DS₂-VASC score of ≥ 2 (annual stroke risk $\geq 2.2\%$).²

Antithrombotic therapy has been shown to reduce mortality and stroke in AF.² Warfarin is the first line treatment for thromboembolic prevention, reducing relative risk of stroke by 60–73% for an international normalized ratio (INR)

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