Factors predicting mitral restenosis after successful percutaneous mitral commissurotomy

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Introduction Percutaneous mitral commissurotomy (PMC) is the alternative treatment of choice for mitral stenosis (MS). Its immediate and medium term results are comparable to those of surgical commissurotomy, however in the long term there is a risk of restenosis. The purpose of this study is to determine the factors predicting restenosis after PMC.

Methods 322 patients (66% women), average age: 35±13 years (9-75 years) having a tight MS and treated by PMC with Inoué balloon. The anatomic aspect of the mitral apparatus before PMC was studied according to the criteria of the Wilkins score with a concomitant study of the state of mitral apparatus before PMC was studied according to the Wexler score (grade 2). Mitral restenosis was defined as a MVA <1.5 cm² and/or loss >50% of initial gain in MA.

Results The rate of primary success of PMC was 86% and mean MA post PMC was 1.82±0.33 cm² compared to MA pre-PMC of 1.0±0.18 cm² (p<0.0001).

Opening of two commissures was observed in 74% of patients. After an average period of 62±32 months, only 12% of patients had a dyspnea stage III-IV of NYHA, MA was 1.64±0.3 cm² (p=0.001) and mitral restenosis happened in 47 patients (20%) after a period of 60,48±27 months (22 – 124 months).

The independent predictors of mitral restenosis after a successful PMC were: previous surgical commissurotomy, Wilkins score >8, MA after PMC <1.8 cm² and absence of bicommissural opening post PMC.

Conclusion A favorable anatomy of mitral apparatus and the optimization of immediate result of PMC are the guaranty for the maintain of good result in the long term.

The author hereby declares no conflict of interest

0263

Short- and long-term outcomes of surgery for severe tricuspid regurgitation: Algerian experience

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Introduction and objectives There is little data available for Algeria on the outcomes of surgical treatment for severe tricuspid regurgitation. The aim of this study was to analyze clinical and echocardiographic outcomes in a series of patients who received surgical treatment for severe tricuspid regurgitation and to compare outcomes according to the operative approach to valve repair or replacement.

Methods Retrospective study in 239 consecutive patients with severe tricuspid regurgitation undergoing valve surgery between April 2006 and February 2014 in military hospitals of Algeria and Constantine.

Results A total of 112 ringless and 85 ring annuloplasties were performed and 9 bioprosthesis and 33 mechanical prostheses were implanted. Perioperative mortality was 18.5% and was associated with age and cardiopulmonary bypass time. During clinical follow-up (median, 41 [interquartile range, 24-89] months), 2 reop-erations were required in the ring annuloplasty and mechanical prosthesis groups; prosthetic thrombosis was diagnosed in 4 patients in the latter group. Total mortality after follow-up was 29.9% and was associated with age>70 years and extra-corporeal circulation time. The emergence of new severe tricuspid regurgitation was associated with age and ringless annuloplasty (P=0.04).

Conclusions Ringless repair was significantly associated with recurrence of severe tricuspid regurgitation. The use of mechanical prostheses was associated with a high rate of thrombosis. No significant differences in perioperative or total mortality were found between the different methods used for repair or valve replacement.

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0290

Left atrial remodeling after percutaneous left atrial appendage closure

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Objectives The importance of the left atrial appendage (LAA) on left atrial (LA) hemodynamics is unknown. We sought to evaluate the effect of LAA percutaneous closure (LAAPC) on left atrial remodeling in patients with paroxysmal atrial fibrillation (AF) and permanent AF.

Methods All patients referred for LAAPC with Amplatzer Cardiac Plug (ACP) and Watchman device were enrolled. Cardiac computed tomography (CT) for LA volume measurement and transthoracic echocardiography (TTE) for diastolic function assessment were performed at baseline and 3 months after LAAPC. An average of 3 consecutive measurements were performed for TEE parameters in all patients.

Results Sixty-three patients (mean age 73±9 years) were included. 38% (n=24) in sinus rhythm (SR) at baseline and 55% (n=35) in permanent AF. Patients in SR at baseline and permanent AF at 3 months were excluded (n=4,7%).The mean CHA2DS2-VASc score was 4,3±1,3. There was no significant difference in the functional status and BNP level (155,6±107 vs 150,7±90pg/mL; p=0,85) between baseline and 3 months follow-up. Left atrial volume excluding the LAA (145 ±55cm³ baseline vs 144±50cm³ at 3 months; p=0,30) showed no significant change after 3 months in overall population, neither in the SR (99,7±19,1 vs 103,8±21cm³; p=0,32) or the permanent AF groups (173,2±54 vs 171,7±48,6cm³; p=0,59). MV peak E-wave (84,2±22,7 vs 86,7±20cm/s; p=0,62) and A-wave velocities (65,4±14,4 vs 66,5±22,2cm/s; p=0,66) did not differ between baseline and follow-up but E/E' ratio was increased in the overall population after LAAPC (7,9±2,1 vs 9,1±3,6cm/s;
p=0.038) and there was trend to higher E/E' ratio in the SR group (7.7±1.6 vs 9±3.3cm/s, p=0.46).

Conclusions There’s no evidence for early LA remodeling after LAAPC, but diastolic function might be negatively influenced by LAAPC suggesting the potential role of LAA in atrial function. Further studies are warranted to confirm the preliminary results.

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0382
Should we refine the definition of valvular atrial fibrillation based on echocardiographic criteria? A single center cohort study with midterm follow-up

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Purpose The lack of justification for the various definitions used to characterize valvular atrial fibrillation (VAF) in clinical trials and guidelines lead us to evaluate a strict definition of VAF using echocardiographic-derived classification. We thus sought to investigate whether this pragmatic approach could be useful to predict the risk of stroke and death in such patients.

Methods Between 1998 and 2011, 172 patients, hospitalised for symptomatic VAF were enrolled in the cohort. The CHA2DS2-VASc score was determined at admission. Echocardiographically significant valve disease was defined as: mitral stenosis (mitral valve area <2cm²), mitral regurgitation grade 3 or 4, aortic regurgitation grade 3 or 4, tricuspid regurgitation grade 3 or 4, aortic stenosis (valve area <1.5cm²) or mechanical valve prostheses. All patients were followed-up at least 6 months and cardiovascular events recorded. The composite endpoint was defined as the first occurrence of stroke or death.

Results Mean age was 72±15 years. Among VAF, 55 had aortic valve (AV), 94 mitral valve (MV) and 23 both AV and MV involvement. There were significant differences with regard to sex, age, type of AF and CHA2DS2-VASc score (p<0.001). During a mean follow-up of 5.1±3.7 years, patients with AV experienced 29 (52.7%), MV patients (49, 52.1%) and both AV + MV, 15 (65.2%) stroke or death events. The Kaplan-Meier curves (figure) with AV experienced 29 (52.7%), MV patients (49, 52.1%) and both AV + MV patients (23, 26.1%) were at higher risk of stroke or death.

Conclusion These preliminary results suggest that valvular AF should be defined based on echocardiography and that the highest risk of stroke and death is observed in patients with both aortic and mitral valve involvement and a CHA2DS2-VASc score ≥2.

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0488
Assessment of aortic regurgitation severity: a cardiac magnetic resonance and echocardiographic comparison study

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Background Assessment of chronic aortic regurgitation (AR) severity remains challenging. While transthoracic echocardiography (TTE) is the most widely used method, velocity-encoded phase-contrast magnetic resonance (PCMR) imaging in the ascending aorta for flow quantification is considered the gold standard method to calculate the regurgitant volume (Reg Vol). The aim of our study was to compare the AR severity by TTE and PCMR in a large serie of consecutive patients with aortic valvular heart disease (VHD).

Methods and results Between 2007 and 2014, 283 patients underwent clinically indicated TTE and PCMR (Philips ACHIEVA 1.5 Tesla) within 30 days. Multiparametric approach was used by TTE (vena contracta, pisa method and semi-quantitative method) to grade AR severity. Mean age was 81±9 years, 53% were male. LVEF was not significantly different between TTE and CMR (55±13% and 53±15%); mean trans aortic gradient was ≥40mmHg in 53% patients. AR was respectively graded 0, 1, 2, 3 and 4 in 51%, 19%, 13%; 8% and 8% by TTE which corresponded to a Reg Vol of 5.3±3.9mL, 16±3, 26±4, 37±5, and 57±9mL respectively as obtained by PCMR. There was no significant overlap between different Reg vol by PCMR and the 5 grade obtained by TTE. The relation between AR- Reg vol and grade by TTE was not significantly affected by the mean trans-aortic gradient (i.e >or <40mmHg).

Conclusion TTE as used in routine practice, allows a good discrimination and quantification of chronic AR when compared to that performed by CMR. However, PCMR can be an excellent alternative to TTE in patients who undergo TAVR in whom AR assessment by TTE is often challenging.

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0418
Comparison of pre- and post-operative characteristics in octogenarians having isolated surgical aortic valve replacement before versus after introduction of transcatheter aortic valve implantation

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Abstract 0418 – Figure

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