Valvular Disease: Mitral

TCT-701
Mitral Transapical Transcatheter Valve-in-Valve Implantation Using The Braile Inovare Prosthesis
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BACKGROUND Reoperative procedure for the substitution of failed mitral bioprosthesis is a procedure that might involve considerable risk. In some special cases with selected risk factors, mortality is high and might even contraindicate the procedure. The minimally invasive valve-in-valve transcatheter transapical mitral valve implant offers an alternative, reducing morbidity and mortality. The objective of this paper is the evaluation of these implants using the Braile Inovare prosthesis.

METHODS The transcatheter balloon-expandable Braile Inovare prosthesis was used in 12 cases, with an average EuroSCORE of 20.1%. Procedures were performed in a hybrid operative room, under fluoroscopic and echocardiographic control. Through left minor thoracotomy, the prostheses were implanted through the cardiac apex, under rapid pacing. Seriated echocardiographic and clinical controls were performed. Follow-up varied from 1 to 30 months.

RESULTS Correct prosthesis release took place in all cases. In one case, there was need for right lateral thoracotomy for the release of an embolized prosthesis. There was no operative mortality. 30 day mortality was of one case (8.3%). Ejection fraction showed a significant improvement after the 7th post-operative day and the aortic gradient also showed a reduction. Residual mitral regurgitation was not present. There was no peripheral vascular complication or complete atrioventricular block.

CONCLUSIONS The mitral valve-in-valve transcatheter implant in failed bioprosthesis is a safe procedure, with low morbidity and mortality. This possibility might alter prosthesis selection in the initial surgical prosthesis selection, favoring bioprostheses.

CATEGORIES STRUCTURAL: Valvular Disease: Mitral

KEYWORDS Cardiac catheterization, Cardiopulmonary Bypass, Mitral valve

TCT-702
Association of Learning Curve with Procedural Results and Recurrence of Mitral Regurgitation After Percutaneous Mitral Valve Repair with MitraClip System
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BACKGROUND Targeted transseptal (TS) puncture is an essential technique for many structural heart interventions. Spatial accuracy of standard versus radiofrequency (RF) needles has not previously been reported.

METHODS Consecutive patients undergoing left-sided structural heart interventions requiring TS puncture were included in an ongoing registry. The BRK needle (St Jude Med) paired with Mullins sheath (Medtronic) was used alternately with RF needle (Baylis Med) paired with SL1 Sheath (St Jude Med). Procedural times were: (1) time to advance the sheath across the septum; (2) time to cross septum once site was selected; (3) time to advance the sheath through the septum. Transesophageal echocardiographic (TEE) measurements of intended versus final TS crossing on the septum were obtained. These measurements were made from reproducible edges of the visible portions of the fossa ovalis and/or interatrial septum to the TS site in bicaval and short axis (SAX) TEE views both pre and post TS puncture. Pre puncture and maximal tenting of the septum were also quantified.

RESULTS 25 patients underwent standard needle and 27 RF needle TS puncture. The BRK needle (St Jude Med) paired with Mullins sheath (Medtronic) was used alternately with RF needle (Baylis Med) paired with SL1 Sheath (St Jude Med). Procedural times were: (1) time from septum to puncture. Both standard and RF access yielded accurate crossing technique with no statistical differences between the intended and actual crossing site. Maximal tenting was significantly less with the RF needle. Few patients had challenging atrial anatomy such as atrial septal aneurysm, thickened septum primum or prior TS attempts. 2 patients in the standard needle had the mandril wire for assistance to cross. There were no major complications.

CATEGORIES STRUCTURAL: Valvular Disease: Mitral

KEYWORDS Learning curve, Mitraclip, Mitral regurgitation therapy

TCT-703
Accuracy and Procedural Characteristics of Radiofrequency Compared With Standard Needle Transseptal Puncture for Structural Heart Interventions
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BACKGROUND Percutaneous mitral valve edge-to-edge repair using the MitraClip system has been widespread for significant mitral regurgitation (MR) patients with high surgical risk. Learning curve is an important concern for the institute which introduce the MitraClip procedure in the future. In this study, the effect of learning curve on the procedural results and recurrent MR was investigated.

METHODS From November 2005 to October 2013, 174 patients underwent the MitraClip procedure in our institute. These patients were classified into first 50 patients (period 1), second 50 patients (period 2), and the other 74 patients (period 3), and learning curve was evaluated by comparison of procedural results and the subsequent recurrence of MR between the 3 groups. All MitraClip procedures were performed by or under the supervision of a single operator (S. Kar).

RESULTS Fluoroscopic time was 45.1 ± 18.2 min in period 1, 42.7 ± 23.1 min in period 2, and 34.8 ± 13.8 min in period 3, and significantly decreased from period 1 to period 3 (p = 0.007). The number of clips was 1.38 ± 0.57 in period 1, 1.48 ± 0.51 in period 2, and 1.60 ± 0.52 in period 3 (p = 0.07). Although acute procedural success (residual MR <1/2+ immediately after the procedure) was similarly achieved in the 3 groups (94.0% vs. 94.0% vs. 98.6%, p = 0.31), the distribution of residual MR grade after the procedure was significantly better in period 3 than in period 1 (p = 0.04). Among patients with acute procedural success, recurrent MR within 1 year was observed more frequently in period 1 (38.3%) than in period 2 (10.6%, p = 0.002) and period 3 (15.3%, p = 0.004).

CONCLUSIONS Learning curve of the MitraClip procedure was observed in terms of procedural quality and device durability. When starting the MitraClip program, these findings should be considered.

CATEGORIES STRUCTURAL: Valvular Disease: Mitral

KEYWORDS Learning curve, Mitraclip, Mitral regurgitation therapy
## TCT-705
Immediate and long term outcomes after repeat percutaneous mitral valvuloplasty for patients with mitral valve restenosis
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### BACKGROUND
Only rare reports have been published about redo PMV and data regarding its long term safety and efficacy are scarce. So we decided to explore the immediate and long-term outcomes of repeat (redo) percutaneous mitral valvuloplasty (PMV) in a series of patients with mitral restenosis in comparison with initial PMV in the same series and to determine prognostic factors of outcomes.

### METHODS
A retrospective study enrolling a population of 170 patients treated by PMV in the university hospital Habib Thameur, Tunisia, between January 1997 and January 2011. The study group consisted of 50 patients (mean age 47±10 years) who underwent a redo PMV. All redo PMV procedures were performed using the Inoue balloon system. Procedural success was defined as 50% or more increase of mitral valve area (MVA) with a final MVA >1.5 cm², without major complications. Restenosis was defined as loss of >50% of the initial gain of MVA by the preceding PMV with a final MVA <1.5 cm².

### RESULTS
Successful procedural result was achieved in 81.1% of patients. There were no in-hospital complications. Both the initial and redo procedures were similar concerning the final increase of mitral valve area, the decrease of mean transmural pressure gradient and the mean pulmonary artery pressure (p=0.001 for all). The Procedural success and the gain of MVA were higher in the initial as compared to the redo procedure (p<0.05). The only independent predictor of redo PMV success was an echocardiographic score <8. Early symptomatic improvement after redo PMV of >1 NYHA functional class was obtained in 95% of the patients. The mean follow-up was 80, 85±35 months. There were no deaths and restenosis was noted in 40%. Eight (16%) patients required mitral valve replacement (34.21 months after redo PMV) due to recurrent symptoms. The predictive factors of restenosis identified by the univariate analysis in our study were: previous surgical commissurotomy (p=0.01) and a high echocardiographic score (p=0.028).

### CONCLUSIONS
Repeat PMV is safe and provides good immediate results in patients with restenosis after successful first procedure. Long-term results of redo PMV are satisfactory and related mainly to the echo score.

### CATEGORIES STRUCTURAL: Valvular Disease: Mitral

## TCT-706
Sustained improvement of mitral regurgitation and symptoms after MitraClip – the results of the Swiss nationwide investigator-initiated prospective registry MitraSwiss
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### BACKGROUND
Percutaneous mitral valve repair (PMVR) using the MitraClip® system has become a valid alternative for patients with severe mitral regurgitation (MR) and high surgical risk. For a lack of evidence deriving from randomized trials, data from high volume registries is therefore of interest. Herein, we report the results of the