Left Atrial Appendage

CRT-141

Comparison Of Watchman And ACP Devices In The Left Atrial Appendage

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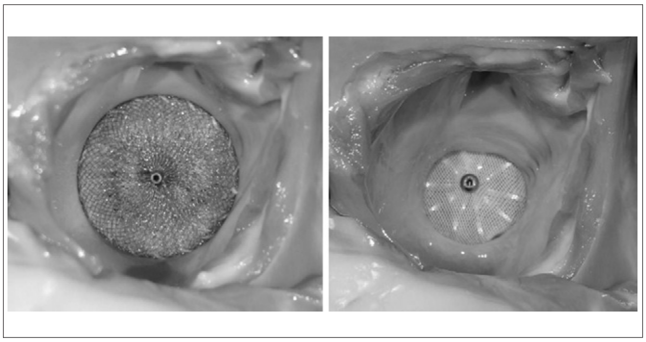
Conformation to the left atrial appendage anatomy of a 16 mm ACP device (Amplatzer, Golden Valley MN) and a 21 mm Watchman (Boston Scientific, Natick, MA) was compared in a fresh canine heart ex vivo. The atrial wall of a heart from an 8-month hound-type 21 kg male dog was removed to allow visualization and deployment of the devices into the left atrial appendage. Each device was deployed, measured, and photographed for conformation to the left atrial appendage in the same heart in order to assess fit in identical anatomy.

Watchman had 51% less surface exposure (154 mm^2) compared to the ACP device (314 mm^2). The ACP device was appeared to impinge on the mitral valve compared to the Watchman. In addition, the superior edge of the ACP device was closer to the pulmonary vein ostia compared to that of Watchman. These data demonstrate superior positioning of Watchman compared to the ACP device in the left atrial appendage with lower risk of affecting other cardiac structures.

ACP (Figure 1) and Watchman (Figure 2) device placement in the left atrial appendage in the same canine heart. The mitral valve is impinged by the placement of the ACP device, but not the Watchman device.



Mitral Valve

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Long-term Follow-up Of Mitral Valvuloplasty With Single Balloon, Independent Predictors Of Survival And Event Free Survival

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Objectives: Mitral balloon valvuloplasty (MBV) with single balloon (MBVSB) is the less expensive technique to perform mitral balloon valvuloplasty. The objectives were to evaluate long-term follow-up (FU) of MBVSB Balt and to determine independent predictors of survival and event-free survival.
Methods: From 1987 to 12-31-2011, 526 procedures of mitral balloon valvuloplasty was performed, 404 (77.1%) with MBVSB Balt, being 256 procedures with long-term FU. The balloon diameter was 25 mm in 5 procedures and 30 mm in 251, mean dilatation area 7.02±0.30 cm^2. The FU was 54.6±32.8 (1 to 174) months. To determine independent predictors of survival and event-free survival it was used the multivariate Cox analysis.
Results: Mean age was 38.0±12.6 (13 to 83) years, being 222 (86.7%) female, 215 (84.0%) in sinus rhythm, echo score (ES) 7.2± 1.5 (4 to 14) points and echo mitral valve area (MVA) pre-MBVSB 0.93±0.21 cm^2. Mean pre and post-mitral balloon valvuloplasty area (Gorlin) was 0.90±0.20 and 2.02±0.37 cm^2 ($p<0.001$) and success MVA ≥1,5 cm^2 in 241 (94.1%) procedures and mean pulmonary artery pressure pre and post mitral balloon valvuloplasty were 27±10 and 20±7 mmHg. Three (1.2%) patients began the FU with severe mitral regurgitation. At the end of the FU 119 (46.5%) patients were in NYHA FC I, 70 (27.3%) in FC II, 53 (20.7%) in FC III, 3 (1.2%) in FC IV and there were 11 deaths (4.3%). There were 17 (8.2%) patients with new severe mitral regurgitation at the end of the FU. Twelve (4.7%) patients were submitted to new mitral balloon valvuloplasty, 27 (10.5%) to mitral valve surgery and 70 (26.3%) patients used no medication at the end of the FU. Independent predictors of survival were: ES ≤8 (P<0.001, HR=0.116, 95% IC 0.035-0.384), age ≤ 50 years old (P=0.011, HR 0.203, 95% IC 0.059-0.693) and absence of mitral valve surgery in the FU (P=0.004, HR 0.170, 95% IC 0.050-0.571). Independent predictors of event-free survival were: absence of prior comissurotomy (P<0.002, HR 0.318, 95% IC 0.151-0.667), female (P=0.036, HR 0.466, 95% IC 0.229-0.951) and MVA post mitral balloon valvuloplasty ≥ 1.50 cm^2, P<0.001, HR 0.466, 95% IC 4.884-28.457) in multivariate Cox analysis.
Conclusions: MBVSB Balt was efficient with durable results similar to other techniques. Independent predictors of survival were: ES ≤8, age ≤ 50 years old and absence of mitral valve surgery in the FU. Independent predictors of event-free survival were: absence of prior comissurotomy, female gender and MVA post mitral balloon valvuloplasty ≥ 1.50 cm^2.

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Mitral Leaflet Separation Index Is An Accurate Measure For Mitral Stenosis

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Aim: Evaluation of the MLS index as a measurement for Mitral stenosis.
Methods: 2D Echocardiography was done in 50 patients with MS in this study: Group1 consisted of 25 patients in sinus rhythm with mean age was 28.6 ± 5.6 years. Four of the patients were male (16%), and 21 were female (84%). Six patients had mild, 13 had moderate and 6 had severe Mitral stenosis Group II consisted of 25 patients suffering from atrial fibrillation. The mean age was 37.4 ± 9.8 years. Twelve of the patients were male (48%), 13 were female (52%). Three patients had mild, 14 had moderate and 8 had severe Mitral stenosis.

Patients with significant other valvular lesions or heavily calcified Mitral valve were excluded from the study.

The MVA was assessed by planimetry and pressure half time. MLS index\was measured in end diastole, as the maximal separation at the tips of mitral leaflets in the parastenal long axis (PLX) and apical 4 chamber (A4C) views.
Results: ROC curves for group I demonstrated that in the PLX view, severe Mitral stenosis was predicted by a MLS of 8.05 mm or less had a 82% sensitivity and 100% specificity for planimetry (MVA= −.167 +(.162 × MLS), r=.835, p < .001) and MLS of 8.25 mm or less with a 85% sensitivity and 100% specificity for PHT (MVA = −.122 + (.155 ×MLS), r= .753,p < .001). In the apical 4chamber view, severe Mitral stenosis was predicted by a MLS of 7.9 mm or less with a 82% sensitivity and 86% specificity for planimetry (MVA = −.268 +(.176 × MLS), r = .837, p <.001), and 8.25 mm with a 81% sensitivity and 100% specificity for PHT MVA = −.303 +(.177 ×MLS), r = .799, p <.001) ROC curves for Group II demonstrated In the PLX view, severe Mitral stenosis was predicted by a MLS of 7.25 mm or less with a 89% sensitivity and 90% specificity for planimetry (MVA= −.013 + (.139 × MLS), r= .611, p < .001) and MLS of 7.75 mm or less with a 84% sensitivity and 100% specificity for PHT (MVA = −.203 + (.168 ×MLS), r = .710, p < .001). In the apical 4chamber view, severe Mitral stenosis was predicted by a MLS of 7.65 mm or less with a 89% sensitivity and 100% specificity for planimetry (MVA = −.122 +(.152 × MLS), r = .759, P value <.001) , and 7.9 mm with a 84% sensitivity and 100% specificity for PHT (MVA = −.261 + (.174 ×MLS), r = .840, P value <.001).

For both groups MVA by planimetry= −0.304 + (0.052×MLS(PLX view) + (0.125×MLS(A4C view)) , r=0.828; P < 0.001)