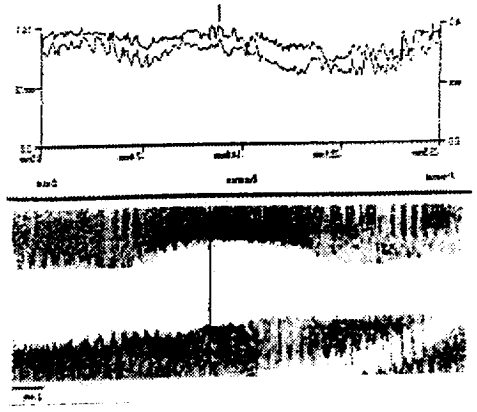
In total 14 stents were used: 6 Palmaz-Schatz, 3 AVE and 5 Wallstent. The images of all 14 coronary segments encompassing the full stent length and the adjacent reference segments were acquired by using a motorized pullback at a constant speed (1 mm/s) and immediately processed in the interventional suite using an automated contour detection algorithm based on acoustic quantification (Figure). Residual percent area stenosis (%AS) of the stented segment, automatically measured on-line after 3-D reconstruction, was compared with ICUS measurements obtained by direct review of the video-tape. In three pts studied before stent implantation on-line 3-D reconstruction facilitated the selection of the stent length by measuring length of dissection and distance between stenosis and left main or diagonal branch. After stent implantation, the absence of stent overlapping in three patients receiving multiple stents and the relationship with side branches could be assessed. The visual information from the 3-D longitudinal views and the on-line measurements triggered additional balloon inflations in 5 pts. The selection of frames and the measurement from tape required a longer time than 3-D reconstruction and measurement (4.4 vs 2.35 min, $p < 0.001$) and resulted in a slight underestimation of the residual %AS with 3 pts showing a >20% %AS with 3-D not recognized from tape analysis. *Conclusion:* On-line 3-D reconstruction of ICUS for intracoronary stenting facilitates stent selection, evaluates adequate stent deployment by rapidly and accurately measuring residual intrastent stenosis and detecting its relationship with anatomic landmarks.



901-21 Percutaneous Vascular Surgery: Suture Mediated Percutaneous Closure of Femoral Artery Access Site Following Coronary Intervention

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A new device (Prostar™, Perclose, Inc.) was developed to close femoral artery access sites percutaneously following coronary interventions in fully anticoagulated patients. The catheter deploys four needles with two pairs of sutures around the hole of femoral artery access sites. The sutures are then tied to close the arteriotomy site mechanically to achieve immediate hemostasis. As a pilot phase, the device was tested in six centers. The device was used immediately following coronary intervention in 91 access sites. Despite an average ACT at the time of the procedure of >300 seconds, immediate complete hemostasis was achieved in 82 sites (90%). The devices were not appropriately positioned in 8 cases and procedures were aborted followed by reinsertion of a sheath or manual compression. Two patients (2.2%) required surgical repair of the femoral artery; one with device mechanical failure and one with bleeding from the initial puncture site in the posterior wall despite successful closure of the sheath site in the front wall. There were no AV fistulae or pseudoaneurysms requiring surgery and no infection, distal embolism or need for blood transfusion.

In conclusion, this pilot study suggests that this suture mediated closure device appears to provide safe and effective hemostasis at the femoral access site in fully anticoagulated patients following coronary interventions.

CARDIAC PACING

901-22 Dual-Chamber Pacing for Patients with Hypertrophic Obstructive Cardiomyopathy: A Prospective Randomized, Double-Blind Crossover Trial

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Implantation of a dual-chamber permanent pacemaker (PPM) has recently been proposed as a therapeutic alternative for patients with hypertrophic obstructive cardiomyopathy (HOCM). To objectively determine the short-term benefit of PPM, we entered 11 patients with severely symptomatic HOCM (mean age, 53 ± 13 years; 7 males, 4 females) into a prospective randomized, double-blind crossover trial with 2 months of continuous atrial synchronous pacing (DDD) and 2 months of backup pacing (VVI). All medications were continued throughout the study. Clinical symptoms, oxygen consumption treadmills, and Doppler echocardiography were performed at baseline and after each of the two arms. During the DDD arm, 62% experienced subjective symptomatic improvement and 37% admitted to symptomatic improvement in the VVI arm. The data at baseline and after each of the two arms for maximum treadmill time (TMET-max), maximum oxygen consumption (VO2-max), and Doppler outflow tract gradient (GRAD) are shown:

	TMET-max (min)	VO2-max (mL/kg/min)	GRAD (mmHg)
BASE	5.7 ± 1.9	19.0 ± 5.8	76 ± 20
VVI	6.0 ± 2.3	20.0 ± 5.8	56 ± 25
DDD	6.0 ± 1.7	20.0 ± 6.0	47 ± 27*

*$p < 0.05$ vs. baseline

Conclusion: PPM for patients with HOCM provides subjective improvement and decrease in gradient for a select group of patients. However, not all patients will respond to PPM, and there is no overall statistically significant improvement in objective exercise parameters on short-term follow-up. DDD PPM should not be routinely implanted in all patients with HOCM until further results of larger prospectively randomized trials are available.

901-23 Atrial Synchronous Versus AV Sequential Pacing for Hypertrophic Cardiomyopathy (HOCM)

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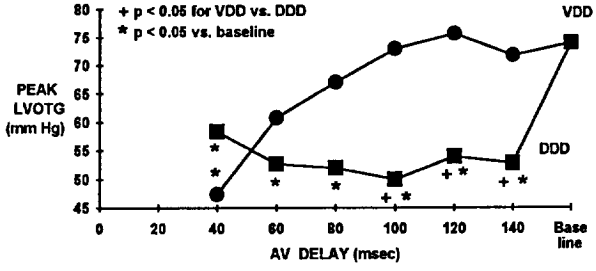
Dual chamber (DC) pacing has proven effective in reducing the left ventricular outflow tract gradient (LVOTG) in most patients (pts) with HOCM refractory to drug therapy. However, optimal pacemaker (PM) programming including pacing mode and atrioventricular delay (AVD) has not been established. Accordingly, we performed continuous-wave transthoracic Doppler echocardiography on 7 pts with DC PMs (5 male, 2 female, mean age 64.7 ± 12.7 years) with HOCM and a resting peak LVOTG exceeding 25 mmHg to evaluate the effects on peak LVOTG of atrial synchronous pacing (VDD) and AV sequential pacing (DDD) at 10 bpm above sinus rhythm while varying the AVD in steps of 20 msec to a minimum of 40 msec.



Conclusions: 1) At AVD of 100 to 140 msec, DDD pacing significantly reduced the peak LVOTG while VDD pacing did not. 2) At AVD less than 100 msec, VDD pacing significantly reduced peak LVOTG only at AVD of 40 msec, while DDD pacing at 10 bpm above sinus rhythm reduced peak LVOTG at all AVD used. Therefore PMs which have the capability to program different AVD for VDD and DDD modes and that provide programmable AVDs less than 60 msec are optimal for HOCM pts.