

	No of samples	Sample size (g)	Sampling efficiency	Safety
FB-41ST	7	0.168	42.8%	100%
FB-42ST	8	0.145	50.0%	100%
FB-43ST	8	0.173	87.5%	100%
Cordia	5.4 F	6	0.194	33.3% 100%

sampling efficiency 82.7%, safety 100%. No major complications occurred, while minor complications included short run VT (1/10), pain at the sheath placement site (8/10 pts), and the transient fever afterwards (5/10 pts).

In conclusion, PCS with Olympus HYF-1T enables excellent visualization if used after the proper drainage of PE. Pericardial biopsy sampling is safely and most effectively performed with fenestrated forceps with a needle in the center.

1193-26 Simultaneous Left and Right Ventricular Contractile Dysfunction Induced by Right Coronary Ischaemia Is Partly Relieved by Pericardiectomy

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Aim: To examine the effect of proximal right coronary artery (RCA) occlusion on simultaneous left and right ventricular (LV and RV) contractile performance.

Methods: Twelve 40 kg pigs were studied. Following anaesthesia and sternotomy, a combined conductance catheter and micromanometer was inserted into the LV and RV with the pericardium intact. The chest was then loosely sutured closed. Ventricular volumes were calibrated from a transit time flow probe placed around the pulmonary artery. RCA occlusion was achieved with a PTCA balloon placed just distal to the conus branches. Measurements were taken at baseline and at 210 secs of occlusion. Contractile indices were determined by transient inferior vena cava occlusion. The chest was then reopened, the pericardium removed and the measurements repeated as above.

Results: are expressed as mean change from baseline following 3.5 mins RCA occlusion. Paired t-test was used for comparison.

	ΔRV EDV	ΔLV EDV	ΔRV ESP	ΔLV ESP	ΔCO	ΔCVP
+pen	13.4	-6.5	-4.9	-27.8	-0.67	0.58
-pen	10.2	5.2	-6.9	-9.6	-0.32	0.1
P	NS	0.013	NS	0.02	0.026	0.04

	ΔRV ESPVR	ΔLV ESPVR	ΔRV PRSW	ΔLV PRSW
+pen	-0.01	-0.71	-4.31	-35.0
-pen	0.16	-0.14	-1.52	9.8
P	= 0.03	= NS	= NS	= 0.0009

EDV/ESV = end-diastolic/systolic volume (ml), ESP = end-systolic pressure (mmHg), CO = cardiac output (l/min), CVP = venous pressure (cmH₂O), ESPVR = end-systolic pressure volume relations (mmHg/ml), PRSW = preload recruitable stroke work (mmHg ml). +/- pen = with/without pericardium.

Conclusions: The biventricular contractile dysfunction seen with RCA ischaemia is partly due to the conformational change/septal shift caused by RV dilatation within an intact pericardium. Pericardial constraint may be partly responsible for the haemodynamic compromise seen in acute inferior MI.

1193-27 Impact of Pericardial Opening on the Early Diastolic Intraventricular Pressure Gradient and Color Doppler M-Mode E-Wave

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The significance of pericardial effects on diastolic function have not been investigated in relation to intraventricular pressure gradients and flow propagation. Previous investigations in an animal model have demonstrated the ability to noninvasively estimate diastolic intraventricular pressure gradients through application of the Euler equation to color Doppler M-mode echocardiographic data under conditions that included pericardial opening for direct catheter measurements.

Methods: To investigate the impact of pericardial opening on diastolic intraventricular pressure gradients, we introduced a multisensor Millar catheter into the carotid artery and advanced the transducers across the aortic valve to record intraventricular pressures at the apex and base. Pressure recordings were obtained simultaneously with color Doppler M-mode images in five animals at baseline and following pericardial opening. The peak intraventricular pressure difference from the left ventricular (LV) base to apex was

measured in five cardiac cycles from each animal. A characterization of the color M-mode early filling distribution was obtained by eigenvector analysis on these same 5 cardiac cycles from each animal.

Results: The magnitude of the intraventricular pressure difference decreased from 1.43 ± 0.13 to 1.13 ± 0.18 mmHg ($p < 0.002$, $N = 4$) following pericardial opening. While the propagation velocity of the early filling distribution was not significantly effected, the velocity distribution was shifted towards the LV base (0.88 ± 0.16 to 0.73 ± 0.16 cm from the mitral valve, $p < 0.005$, $N = 4$).

Conclusions: 1) Pericardial opening has a statistically significant, although relatively small, effect on the magnitude of the intraventricular pressure difference. 2) This leads to a slight shift in filling volume away from the LV apex.

1193-28 Does Deceleration Time Predict Outcome in Patient With Constrictive Pericarditis?

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Background: Constrictive pericarditis (CP) is characterized by an inspiratory decrease in left ventricular filling and a short deceleration time (DT). The influence of DT on outcome in these patients has not been described.

Methods: We reviewed the echocardiographic features of 28 patients ages 59 ± 13 years diagnosed with CP by echocardiography, magnetic resonance imaging, cardiac catheterization, and surgical findings. Patients were subdivided by treatment into two groups. Group A ($n = 9$) were treated conservatively, Group B ($n = 18$) required pericardiectomy. One patient expired after diagnosis. We compared mitral inflow peak E and peak A velocities, the percent change in Doppler flow velocities from expiration to inspiration (%E), and DT between the two treatment groups.

Results:

Mitral Inflow	Group A	Group B	P-Value
DT (ms)	151 ± 34	105 ± 30	0.01
E/A	1.6 ± 0.7	1.7 ± 0.7	0.50
%E	18 ± 10	20 ± 11	0.37

Patients treated by pericardiectomy had a statistically significant shorter DT than patients followed conservatively. The patient who expired had a short DT of 75 ms. No statistically significant respiratory variation noted between the two groups.

Conclusion: A short deceleration time is a predictor of outcome in patients with constrictive pericarditis and is a reflection of advanced disease marked by pericardial constraint.

1194 Complications of Valve Prostheses: Endocarditis

Wednesday, April 1, 1998, Noon-2:00 p.m.
Georgia World Congress Center, West Exhibit Hall Level
Presentation Hour: Noon-1:00 p.m.

1194-18 Role of Transesophageal Echocardiography in Differentiating Pannus From Thrombus in Obstructed Prosthetic Valves

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Background: Distinction of pannus (Pn) from thrombus (TH) on obstructed prosthetic valves (PV) is essential, since thrombolytic therapy has emerged as an alternative to reoperation.

Methods: We analyzed clinical, surface and transesophageal echo (TEE) data in 24 patients (age 59 ± 13 yrs) presenting with 25 obstructed PVs and compared the findings to pathology at surgery.

Results: There were 14 bileaflet, 8 tilting-disc, and 3 ball-cage PVs (15 mitral, 10 aortic). Twelve PVs had TH, 10 Pn, and 3 had a combination. Patients with Pn had longer time from PV insertion to malfunction, longer duration of symptoms and higher rate of adequate anticoagulation (all $p \leq 0.001$). Pn formation was more common in aortic PV (70% vs 25%, $p < 0.04$). TEE detected abnormal PV motion in 60% with Pn and in all cases with TH ($p < 0.02$). A mass was seen by TEE in 70% of Pn and 92% of TH ($p = 0.19$). TH tended to be larger than Pn (maximum dimension 1.25 ± 0.79 cm vs 0.82 ± 0.66 cm, $p = 0.29$). Furthermore, in mitral PVs, TH extended more often into the left atrium (44% vs 0%). Ultrasound video intensity ratio (VIR = VI of the mass/VI of the PV) was higher in the Pn group (0.71 ± 0.17 vs 0.44 ± 0.13 , $p < 0.004$). All TH appeared soft (VIR < 0.70), while 71% of Pn were

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