CORONARY OCCLUSIONS: RECURRENCE, MORPHOLOGY AND REPEAT ANGIOPLASTY

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Coronary angioplasty (PTCA) of occluded coronary arteries (OCCL) has been associated with a high recurrence rate. Of 205 Pts who had successful PTCA and repeat angiography (mean of 9.8 months post PTCA), 100 (49%) had recurrence, which presented as a re-occlusion in 34 and stenosis in 66. Of these 100 Pts, 17 were referred for elective bypass surgery (CABG) and 3 were treated medically. The remaining 80 Pts (20 with re-OCCL and 60 with stenosis) were submitted to a second PTCA (PTCA-2). Procedural success was achieved in 14 (70%) of the re-OCCL Pts and 56 (93.3%) of the stenosis Pts (p<.01). Only one Pt (stenosis group) required emergency CABG and had a q-wave infarction (QMI). There were no other complications or hospital deaths in either group. Follow-up (mean 26 months from PTCA-2) of the 70 successful PTCA-2 Pts showed that 56 (80%) were angina free, 1 had a late non-fatal infarction, and 5 required a third PTCA. Compared to stenosis Pts, re-OCCL Pts were more likely to have angina (35.7% vs 16.1%; p<.05) at late follow-up. There was one late cardiac death in each group, and a higher incidence of third PTCA in the re-OCCL group versus the stenosis group (14% vs 5%). In summary, OCCL which recur as stenoses have a high success rate with PTCA-2. Late follow-up suggests that outcome after PTCA-2 is favorable, especially for patients who presented with a stenosis rather than re-OCCL.

INCREASED RISK FOR ABRUPT CLOSURE DURING ELECTIVE PTCA IN THE POST-MYOCARDIAL INFARCTION PERIOD

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The performance of PTCA in the post-myocardial infarction period remains very controversial. Two trials (TIMI-2B, SWIFT) have shown no benefit from routine PTCA in the first few days after thrombolytic therapy. However, a subset of patients are often appropriately treated with PTCA because of post-infarction angina or ischemia. Previous studies have demonstrated an increased risk for abrupt closure in patients with unstable angina compared with stable angina. To determine the risk of abrupt closure during PTCA in the post-myocardial infarction period, we retrospectively evaluated our experience from 7/1/88 to 6/30/90. A total of 1436 interventions were performed. Excluded from this analysis were 143 patients because of stent or excimer laser therapy, left main or cardiogenic shock intervention, unstable angina with ischemic ECG changes, or insufficient data. Also excluded were 39 patients in whom the lesion could not be approached with a guide wire. Thus, 1254 procedures were evaluated.

PTCA	Acute Closure	
S/P Myocardial Infarction		
0-2 days	17/155	11.0%
3-14 days	24/168	14.3%
15-42 days	11/84	13.1%
43-365 days	2/37	3.4%
Elective	60/750	8.0%

The difference in abrupt closure rate in the post-infarction group (0-42 days) was statistically different from the elective group (12.8 vs. 8.0%; p=0.018). Thus, the risk for abrupt closure during PTCA is unusually high for several weeks following myocardial infarction.

IMPROVEMENT OF REGIONAL WALL MOTION FOLLOWING ELECTIVE CORONARY ANGIOPLASTY: QUANTITATIVE VENTRICULOGRAPHIC RESULTS

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To evaluate the frequency and predictive parameters for long term outcome of impaired regional myocardial contractility due to chronic ischemia in patients undergoing single vessel PTCA, we analysed the ventriculograms prior to PTCA and at follow-up of 250 consecutive Pts with successful elective single vessel PTCA. 100/250 Pts showed a regional wall motion abnormality (RWA) of the PTCA-vessel dependent myocardium by visual analysis prior to PTCA. Follow-up angiograms were obtained from all Pts 4-6 months later. By visual analysis, 61/100 Pts. showed improvement of RWA at follow-up.
In 85/100 Pts (6f, 79m, 53±8 years, 69 LAD, 16 RCA-stenoses) the ventriculograms were analysable using the centerline method. In 15 cases, one or both angiograms were not tracable for quantitative analysis of regional or global wall motion. 49 Pts had a history of myocardial infarction (MI) with a minimal interval of 6 weeks prior to PTCA, but showed provocable ischemia or angina pectoris in a stress test. 31 Pts had angiographic restenosis (>50% diameterreduction at PTCA-site) at follow-up.
RWA improved in 66% of Pts. The mean severity of hypokinesis decreased from -1.3±0.8 standard deviations/chord (SD/C) to -0.9±0.7SD/C (p=.001, paired t-test). The circumferential extent (% of LV contour) of RWA worse than -1SD/C decreased significantly at follow-up (reduction of 26.4%, p=.002), even for Pts with marked hypokinesis (worse than -2SD/C) at baseline (reduction of 43.7%, p=.002). Global ejection fraction (EF) increased slightly for all Pts from 58.2±8.9% to 60.1±7.2%.
In a regression analysis on 48 entry variables, severity of hypokinesis at baseline, prior MI, degree of stenosis prior to PTCA, age, and severity of angina at follow-up were the most predictive parameters for longterm outcome of RWA (multiple r=.70). In Pts with stenoses >70% prior to PTCA and no history of MI, RWA and even the global EF improved significantly more (p=.02) than in others. Restenosis, however, did not influence the outcome of RWA.

In conclusion, quantitative angiographic results confirm the visually estimated improvement of previously impaired regional LV function following elective PTCA. Also, even Pts with markedly decreased local contractility should be treated by angioplasty, if regional ischemia is provocable.

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Poster Displayed: 9:00AM–12:00NOON
Author Present: 11:00AM–12:00NOON
Hall F, West Concourse
Restenosis: Prediction and Prevention

IS THE RISK OF RESTENOSIS AFTER A SECOND PTCA HIGHER AMONG PATIENTS WITH A HISTORY OF PRIOR RESTENOSIS AT ANOTHER SITE?

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The relative importance of constitutional factors versus local arterial factors on the occurrence of restenosis following PTCA remains poorly understood. To determine whether the risk of restenosis after a second PTCA is higher among patients with a history of prior restenosis at another site, we analyzed 111 consecutive pts who had undergone a second PTCA of a new lesion and who had clinical follow up greater than or equal to six months. Forty-four pts were without angiographic restenosis at the site of the previous dilation (group I); 67 pts had angiographic restenosis (group II). There were no significant differences between group I and group II in gender (73% vs 79% males), mean age (57±10 vs 61±11 years), current smoking (25% vs 12%), history of diabetes (16% vs 18%), hypercholesterolemia (45% vs 47%), or prior infarction (61% vs 56%). Restenosis was documented by angiography in pts in whom clinical restenosis had occurred.
Angiographic data following the second PTCA reveal:

	Group I	Group II	p value
New segments dilated	56	71	NS
LAD site	34%	21%	NS
Mean stenosis pre-PTCA	87±12%	84±11%	NS
Mean stenosis post-PTCA	28±11%	29±10%	NS
Restenosis rate/lesion	14/56(25%)	21/71(30%)	NS

These data suggest that the angiographically confirmed clinical restenosis rate following PTCA of a new lesion among pts with a prior history of restenosis is not higher than among pts without prior restenosis.