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ABSTRACTS OF THE 57TH SCIENTIFIC SESSIONS

VIDEODENSITOMETRIC ANALYSIS OF CORONARY STENOSES FOLLOWING ANGIOPLASTY

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Transluminal coronary angioplasty (PTCA) may disrupt atherosclerotic plaques and create irregular angiographic outlines. As a result, calculation of percent diameter narrowing based on edge detection may not accurately represent the three-dimensional changes in the coronary lumen induced by PTCA. An alternative method of calculating percent stenosis is with videodensitometry, which measures the relative density of contrast media and is independent of irregular lumen geometry. To determine if these two methods yield different results, digital subtraction coronary angiograms were obtained in 11 patients pre- and post-PTCA of 16 stenoses. Two observers independently measured percent diameter narrowing with computer graphics by the edge detection and densitometric methods. The mean stenosis pre-PTCA was $67 \pm 14\%$ by edge detection and $65 \pm 18\%$ by densitometry ($p=NS$). The mean stenosis post-PTCA was $34 \pm 20\%$ by edge detection and $29 \pm 17\%$ by densitometry ($p=NS$). Thus, despite potential errors due to lumen irregularities, the edge detection method for measuring coronary narrowing yields results comparable to videodensitometry and appears to be accurate in quantitating stenoses post PTCA.