Myocardial Bridging: Prevalence, Morphology, Clinical Presentation and Coronary Angiographical Characteristics

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1. Background

Myocardial bridging is the most common inborn coronary anomaly. Though in most cases this is considered as a harmless vessel malformation, it causes myocardial ischemia in some patients. There have been only a few reports on myocardial bridging in Korean patients. This study was performed to evaluate clinical and angiographic characteristics and clinical outcomes of the Korean patients with myocardial bridging.

2. Methods and Results

We studied 123 patients (1.87%) with myocardial bridging out of 6583 consecutive patients underwent coronary angiography from January 1999 to July 2003. The mean age was 58±10 years and male was 74%. Myocardial bridging was the only angiographic abnormality in 32 patients. Myocardial perfusion scan was performed in 32 patients and 8 (25%) of them showed a reversible perfusion defect at the territories of bridging segments. The mean length of bridging segments and % stenosis during systole were 21±11mm and 60 15%, respectively. Myocardial bridging is most commonly localized in the middle segment of the left anterior descending coronary artery (97 patients, 71%). Thirty-three patients (27%) had left ventricular hypertrophy in echocardiogram. We modified bridging types by Ferreira to 3 types: perpendicular (superficial, 81%), transverse (deep, 14%), and mixed (5%). There was a significant correlation between symptom severity and the type of bridging in stable angina patients (correlation coefficient = 0.34, $p = 0.03$). Patients were divided into the 2 groups according to the presence of stenosis at just proximal to bridging segments. (Stenosis group: 42 patients(34%)) There were no significant differences in clinical and angiographic characteristics of bridging segments between the 2 groups. During follow-up (mean 21±14 mo) of 32 patients with normal coronary artery except myocardial bridging, no major cardiac events occurred.

3. Conclusions

There was a higher incidence of proximal stenosis and LV hypertrophy in patients with myocardial bridging. Deeper and more complex myocardial bridging were associated with symptom severity. In some patients, myocardial bridging was associated with a significant stenosis at just proximal to it.

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