REFERENCES


REPLY

We thank Drs. Tiong and Brieger for their interest in our work and their suggestion that shear-induced down-regulation of Mac-1 (CD11b/CD18) on the surface of neutrophils, depending upon the experimental work by Fukuda et al. (1), might limit our study. We evaluated the trans-cardiac gradient of neutrophil Mac-1 expression by sampling both coronary sinus and peripheral blood in the study (2) cited by Drs. Tiong and Brieger as well as in our previous ones (3–7). Although in this study we did not precisely address the sampling method for peripheral blood, the sampling site for peripheral blood was the femoral vein and was consistent at each sampling point in our study series. The method was based on the sampling via 6-F femoral venous sheath that was left for access for 5-F coronary sinus catheterization for 48 h post-percutaneous coronary intervention (PCI) course, also consistent at each sampling point. As Drs. Tiong and Brieger observed, the most reliable determination of trans-cardiac gradient requires strict sampling of both coronary sinus and peripheral blood with the same catheter sizes. Using our technique, however, we can envision that shear stress might be quite less, compared with the technique with a 21-gauge needle puncture. Formerly, we evaluated the Mac-1 expression at different sampling sites by the same method and by different methods at the same site. As a result, we confirmed that the values were identical between samples via 6-F sheath under 5-F catheter insertion and those via 5-F catheter (T. Inoue et al., unpublished data, 1996). In addition to this evidence, we believe that the consistency of the methods at each point provides our results with a significant value.

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Coronary Arteries
After Arterial Switch Surgery

I read with special interest the recent study by Pedra et al. (1) on intravascular ultrasound (IVUS) imaging of the coronary arteries after switch operation for transposition of the great arteries. Given my long-term interest in coronary congenital anomalies and their IVUS imaging, I was quite curious to know the findings at one of the most experienced centers in the Jatene operation. I was especially impressed by two conclusions made by the investigators: 1) the finding of only one case of ostial stenosis out of 37 ostia, and 2) the benign nature of the described pathologic findings (6.4% mean arterial obstruction or intimal thickening). Such findings, as reported, should be placed in some context.

First, the IVUS-studied population may not be a representative sample of the whole series of patients who underwent the switch operation. Especially, their exclusion criteria for switch procedure and for IVUS study should be discussed in more detail. The cases of postoperative sudden death and myocardial infarction should also be an intrinsic part of the consideration. The same investigators report that in two of their cases, IVUS could not be performed because of technical difficulties (1). In how many others was the IVUS study not even attempted because of similar technical problems? The fact is that coronary ostial anomalies and the anomalies of the proximal coronary course, jointly with acquired compression, torsion, and stretching, are the most likely and ominous coronary findings expected in such patients (2) and not likely the coronary atherosclerotic changes. I am not sure the researchers were fully aware of such pathologies and of their IVUS manifestations.

To give an example, their Figure 5 (1) illustrates typical findings in ectopic coronary arteries, with an intramural (aortic) course (3,4). Figure 5A illustrates an intramural (intussuscepted) coronary segment, with typical coronary hypoplasia (its circumference is much smaller than the one of a more distal segment, as seen in Figure 5B), with an elliptical cross section as compared to the more distal circular one (Fig. 5B). In similar cases, real-time cross-sectional IVUS imaging consistently shows systolic lateral compression (phasic in nature) of variable degree, which may further