glucose metabolism in experimental left bundle branch block. *Circulation* 1992;85: 1125–1131.

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Septal Perfusion in Left Bundle Branch Block

REPLY: We thank Drs. Richter and Munz for their interest in our article. Their comments can be summarized in two issues: (*1*) septal perfusion for diagnostic accuracy for CAD detection and (*2*) pathophysiological considerations in patients with left bundle branch block (LBBB).

We agree with their comments on stress perfusion abnormality in septal regions. Many authors pointed out the limited values of exercise perfusion imaging in LBBB patients. Stress-induced perfusion defect is often seen in septal regions in these patients without organic coronary stenosis (*1–3*), but the specificity of perfusion imaging may be significantly increased by use of dipyridamole stress instead of exercise stress (*4,5*). On the other hand, caution is needed to interpret perfusion abnormality, since stress-induced septal hypoperfusion and LBBB is often caused by left anterior descending artery stenosis which improved after coronary angioplasty (*6*).

Our article did not intend to improve diagnostic accuracy by use of gated SPECT acquisition in stress myocardial perfusion study in these patients. All of our data were collected at resting condition. Our study indicates a decrease in tracer uptake in septal region mimicking "hypoperfusion" in nongated perfusion study due to decreased wall thickening in this area. But, this artifact can be eliminated by use of end-diastolic images with gated acquisition. Thus, gated perfusion studies can assess perfusion and function separately. This technique can be applied for evaluation of pathophysiological conditions in the patients with various cardiac disorders, such as stunned myocardium where regional dysfunction persists after recovery of perfusion.

Another issue is the potential mechanism of a decrease in regional wall thickening in septal region. Ono et al. (*7*) showed a decrease in perfusion and metabolism in experimental LBBB induced by right ventricular pacing. Such decrease may be considered as a result of increased intramyocardial pressure. A decrease in glucose metabolism is often observed in LBBB patients as well on FDG-PET study (Fig. 1), indicating a decrease in energy metabolism without evidence of organic stenosis of coronary arteries, probably due to decreased contraction rather than myocardial ischemia. Further study with more cases is necessary. Echocardiographic studies indicated a reduced magnitude of systolic septal motion which may cause reduced left ventricular ejection fraction in these patients (*8,9*). Grines et al. (*8*) showed the displacement of the septum due to relative increase in right ventricular volume increase or pressure. This displacement may cause paradoxic systolic motion of the septum. However, precise assessment of regional function in relation to perfusion and metabolism may be required with radionuclide studies.

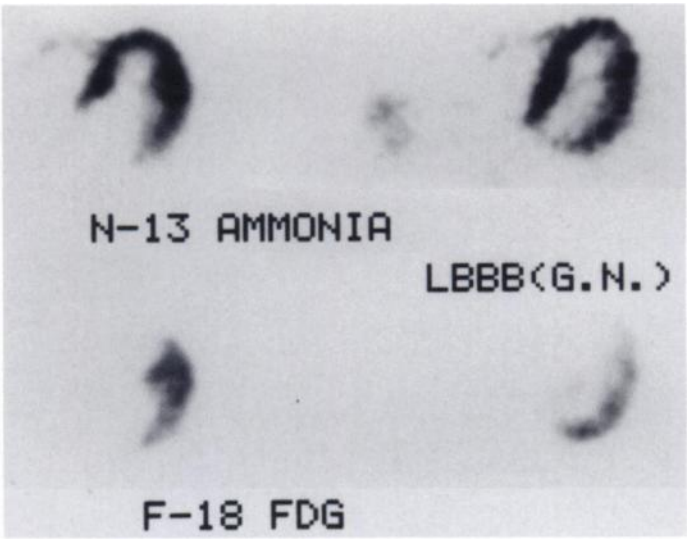

FIGURE 1. Two representative transverse slices of ^{13}N-ammonia perfusion and ^{18}F-FDG images of a patient with LBBB. While myocardial perfusion is normal, FDG uptake is significantly decreased in septal region, indicating a decrease in glucose utilization.

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