



## BETA BLOCKERS IN PATIENTS WITH DIABETES AND CORONARY ARTERY DISEASE

■ *To the Editor:* I read with interest the article by Dr. Simpfendorfer on the use of beta blockers in patients with diabetes and coronary artery disease.<sup>1</sup> I felt that the author should have mentioned that many patients with diabetes fit the pattern of a metabolic syndrome that has been tentatively named "syndrome X." This complex includes high triglyceride and low HDL cholesterol levels, insulin resistance, central obesity, fluid retention, and hyperuricemia, especially during treatment with traditional diuretics.

If a patient with diabetes fits the pattern of syndrome X, adding some beta blockers may further elevate the triglyceride level. This may worsen the cardiovascular prognosis and create myalgias from the high triglyceride levels. In addition, high triglyceride levels appear to be a separate risk factor for coronary disease and may be correlated with the size of infarction. Using "lipid-neutral" beta blockers can avoid some of these actual and theoretical problems. I believe that pindolol, acebutolol, and possibly labetalol are the only lipid-neutral drugs with beta-blocking properties that should be considered when a patient with diabetes fits the pattern of syndrome X.

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1. **Simpfendorfer C.** Efficacy of beta blockade, thrombolytic therapy, and coronary angioplasty in diabetic patients with coronary artery disease. *Cleve Clin J Med* 1993; 60:145-149.

■ *Dr. Simpfendorfer chose not to reply.*

## THE MAZE PROCEDURE FOR REFRACTORY ATRIAL FIBRILLATION

■ *To the Editor:* I read with interest the article by McCarthy and associates<sup>1</sup> on the "maze procedure" for atrial fibrillation. As more patients with atrial fibrillation undergo this new surgical procedure, cardiologists caring for them should be aware of two side effects.

The authors mentioned peripheral edema due to fluid retention. This was postulated by Cox et al<sup>2</sup> to be due to a temporary depletion of atrial natriuretic factor caused by the multiple atriotomies. Therefore, all patients should receive spironolactone or another diuretic for at least 6 weeks after surgery.

The other side effect is postoperative electrocardiographic alteration.<sup>3</sup> Because of the incisions involved in the maze procedure, the P wave is often invisible before the QRS complex. A cardiologist who is not aware of this may think that a patient's heart rhythm is junctional when, in reality, the rhythm is sinus.

I agree with the authors that, as experience grows, the maze procedure will increasingly be added as a "secondary" operation with concomitant cardiac surgery. The maze procedure is ideally suited to be performed in conjunction with an open mitral valve operation. In fact, my colleagues at the Guangdong Cardiovascular Institute (Guangzhou, China) are planning to combine the maze procedure with open heart operations routinely for mitral stenosis or regurgitation to achieve a permanent restoration of not only an optimal hemodynamic status but also a normal sinus rhythm in all patients with preoperative atrial fibrillation.

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1. **McCarthy PM, Castle LW, Trohman RG, et al.** The Maze procedure: surgical therapy for refractory atrial fibrillation. *Cleve Clin J Med* 1993; 60:161-165.
2. **Cox JL, Boineau JP, Schuessler RB, et al.** Successful surgical treatment of atrial fibrillation. Review and clinical update. *JAMA* 1991; 266:1976-1980.
3. **Cheng TO.** Maze surgery for atrial fibrillation. *Hosp Pract* 27(3):18.

■ *In reply:* Dr. Cheng has pinpointed two areas of postoperative care following the maze procedure that should be communicated to the general cardiology community.

First, peripheral edema, postulated to be due to the depletion of atrial natriuretic factor (ANF), is a significant problem; of our 24 patients who underwent the maze procedure, 8 (33%) had to be readmitted because of it. However, we have not found an early depletion of ANF: in fact, we have found elevated levels of ANF during the period of fluid retention. The mechanism for this fluid retention is as yet unknown, but it is the subject of active research.

Second, we agree with Dr. Cheng that sinus rhythm has occasionally been misdiagnosed as junctional rhythm in patients who have undergone the maze procedure. The absence of the P wave on the surface electrocardiogram is thought to be due to atrial depolarization occurring sequentially in different areas of the maze of incisions. During the early postoperative phase we routinely perform "atrial electrocardiograms" through the temporary atrial pacing wires to confirm the resumption of sinus rhythm before a P wave is evident on the electrocardiogram.

Finally, we are performing this operation as a secondary procedure in patients undergoing open

heart surgery, but we have not been as aggressive as Dr. Cheng's surgical colleagues. Many patients with atrial fibrillation of recent onset will resume sinus rhythm after correction of their underlying mitral valve disease. This is especially true for patients who have normal or only mildly enlarged atria. In addition, following mitral valve *replacement*, the potential for technical disaster due to left ventricular free-wall rupture is present if any of the posterior atrial suture lines bleed and need surgical repair. For these reasons, we have limited mitral valve repair with the maze procedure to patients who have been in chronic atrial fibrillation for one or more years and who have enlarged atria. Although the maze procedure is an effective operation, it is not innocuous. Therefore, we recommend combining it with other heart operations only if there is little chance that sinus rhythm would return otherwise. We have now performed mitral valve repair combined with maze procedures in six patients and have also combined the maze procedure with coronary artery bypass operations.

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