intraoperative high versus low mean arterial pressure. *J Thorac Cardiovasc Surg* 1995;110:1302-14.

2. Katz ES, Tunick PA, Rusinek H, et al. Protruding aortic atheromas predict stroke in elderly patients undergoing cardiopulmonary bypass: experience with intraoperative transesophageal echocardiography. *J Am Coll Cardiol* 1992;20(1):70-7.
3. Hartman GS, Peterson JC, Konstadt SN, Hahn R, Szatrowski TP, Charlson ME, et al. High reproducibility in the interpretation of intraoperative transesophageal echocardiographic evaluation of aortic atheromatous disease. *Anesth Analg*. In press.

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Mitral valve repair

To the Editor:

My colleagues and I read with interest the article by Hvass and associates (*J Thorac Cardiovasc Surg* 1995;110:859-62), in which they described a technique for mitral valve repair that closely resembled a procedure we described in this Journal in 1994 (1994;107:635-8). We both described a technique of grafting the posterior leaflet of the tricuspid valve, with the chordae tendineae and papillary muscle, to the mitral valve leaflets for the correction of mitral valve insufficiency.

To our surprise, the authors made no reference to our work in their article. Inasmuch as our letter was published in the same Journal, we thought that it could not have escaped the attention of either the authors or the referees.

We would also like to draw attention to the fact that we suggested further use of this technique for partial replacement of the leaflets in the case of localized calcification of the mitral valve.

We are glad that Dr. Hvass and his group have confirmed the efficiency of this technique, which we have now used successfully in 20 cases.

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A simple switching technique from cardiopulmonary bypass to a long-term extracorporeal life support system

To the Editor:

We read with great interest the article by Muehrcke and associates¹ in the September 1995 issue of the Journal.¹ They summarized their clinical experiences with an extracorporeal life support (ECLS) system and reported that limb ischemia was the most common complication, found in 70% of patients who underwent percutaneous ECLS. Besides limb ischemia, bleeding from the surgical wound is also a life-threatening complication of ECLS.^{1,2} Since 1965 we have used ECLS in more than 60 patients with severe cardiopulmonary failure.^{3,4} To overcome the aforementioned problems, we recently began routinely using the following technique (Fig. 1).

Fig. 1. A cannulation technique to switch from CPB to ECLS for postcardiotomy cardiac failure. A Dacron vascular graft is sutured to the right femoral artery. A 12F wire-reinforced cannula is inserted through the saphenous vein to the distal femoral vein. A 21F heparin-bonded cannula is inserted through the femoral vein to the right atrium. The lines are connected to a heparin-bonded ECLS system. The CPB flow is decreased and the ECLS flow is increased to allow the switch. A, artery; V, vein.

When a patient is difficult to wean from cardiopulmonary bypass (CPB) because of cardiac failure, an intraaortic balloon pump is initially inserted in the left femoral artery after an 8 mm sealed Dacron prosthesis has been sutured to the left femoral artery in an end-to-side fashion. The intraaortic balloon pump is started in a 1:1 mode. The ECLS is set up during CPB. The entire system is heparin-bonded and composed of a capillary membrane oxygenator (Maxima: CB1380, Medtronic Inc., Cardiopulmonary Div., Anaheim, Calif.), a Bio-Medicus model 540T centrifugal pump (Medtronic Bio-Medicus, Eden Prairie, Minn.), and tubes and connectors. Our switching procedure is illustrated in Fig. 1. The right femoral artery and vein are taped. A second 8 mm sealed Dacron prosthesis is sutured to the femoral artery in an end-to-side fashion and then connected to the arterial line of the ECLS system. A 12F wire-reinforced cannula is inserted through the saphenous vein to the distal femoral vein and fixed with 3-0 silk. The CPB flow is decreased 50% and the inferior vena caval cannula used for CPB is removed. A 21F heparin-bonded wire-reinforced cannula with multiple side holes (Medtronic) is inserted through the femoral vein to the right atrium and fixed with two Teflon tapes with double ligation. The two venous cannulas are con-