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Preoperative platelet inhibition and bleeding after cardiopulmonary bypass

To the Editor:

Bizzari and associates¹ studied clinical events and potential bleeding complications in a group of patients who had undergone emergency or urgent cardiac surgery after treatment with tirofiban hydrochloride. They observed that patients treated with tirofiban had a smaller decrease in platelet count during cardiopulmonary bypass; other platelet suppressants have similar effects.^{2,3} Preoperative platelet inhibition will reduce the platelet loss associated with cardiopulmonary bypass because a preferential loss of activated platelets is observed during the period of extracorporeal circulation.^{4,5} The hemostatic function of the preserved platelets would, however, be impaired by heparin-induced plasma changes.⁶

The study was undertaken because of a concern that platelet inhibition may exacerbate bleeding after cardiopulmonary bypass. We among others have demonstrated that during cardiopulmonary bypass platelets lose the ability to form large stable aggregates (macroaggregates).⁶⁻⁹ This impairment persists for several hours postoperatively.^{7,8} Macroaggregation is important for platelet hemostatic function because it gives strength to a platelet plug and paves the way for clot retraction. As platelet macroaggregation is virtually abolished during

cardiopulmonary bypass,⁶⁻⁹ we suggest that additional platelet suppression is unlikely further to impair hemostasis or increase bleeding during the immediate postoperative period. Furthermore, after cardiopulmonary bypass platelets appear resistant to aspirin,¹⁰ an irreversible platelet inhibitor; it is therefore unlikely that even long-acting platelet suppressants that are administered preoperatively will significantly impair platelets late in the postoperative period. This would explain why patients who received platelet suppressants shortly before undergoing surgery using cardiopulmonary bypass did not appear to bleed excessively when compared with those who did not receive these drugs.¹⁻³

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Transapical aortic cannulation for acute aortic dissection with diffuse atherosclerosis

To the Editor:

We read with interest the article by Fukuda and associates¹ and congratulate them on their good results. We agree that femoral artery cannulation sometimes must be abandoned as arterial access for cardiopulmonary bypass. Recently we operated on an urgent basis on a 54-year-old man with type A acute aortic dissection. The femoral artery could not be used as arterial access because of tinea inguinalis. We chose the subclavian artery instead.

We doubt the reliability of transapical aortic cannulation in median sternotomy. We suspect that Fukuda and associates¹ happened to dodge the drawbacks of using this procedure by mere luck, because hypotension during elevation of the apex, dislocation of the cannula, incompetence of the aortic valve, and repair of the insertion site are usually inevitable. Insufficient myocardial protection because of the inability to clamp the ascending aorta and to administer cardioplegic solution remains a problem to be solved. If Fukuda and associates¹ have had experience with other

cases with this procedure, we wonder whether the results have always been good.

Although we have some points to be clarified, we again congratulate Fukuda and associates¹ on their successful results in this complicated case. In our opinion, transapical aortic cannulation should be the last alternative. No one can predict the results of this procedure.

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Reply to the Editor:

We thank Terada and Nakamura for their comments regarding our work.¹ Transapical aortic cannulation was originally described in the 1970s. However, it has been unpopular because of similar comments by the critics.

Originally this method was used in surgery for congenital heart disease or mitral valvular disease.² The main reason for the use of transapical aortic cannulation today is for surgery on diseased aorta without intracardiac abnormality. Thus the indication for this method today is different from that during the 1970s.

We have used transapical aortic cannulation in 4 patients (2 in median sternotomy and 2 in left thoracotomy) without any serious adverse effects. Although the volume of our experience is small, we would like to comment on it. With respect to hypotension during elevation of the apex, its duration was quite short, and the blood pressure recovered as soon as the apex was lowered into normal position. Although elevation of the apex of a beating heart can be an uncomfortable procedure for a cardiac surgeon, we were accustomed to this procedure from our recent experience with off-pump coronary artery bypass grafting.

In addition, hypotension during insertion of the cannula was advantageous to reduce the amount of bleeding during puncture of the apex. To prevent devastating hemorrhage during cannulation and to avoid dislocation of the cannula, purse-string suture with Dacron polyester felt was placed at the apex and

preliminary venous cannulation was performed. In 2 patients the femoral artery was cannulated as an accessory perfusion site to the lower extremities. We evaluated aortic regurgitation during aortic perfusion, and it was mild on duplex scanning. Intraoperative findings revealed a competent aortic valve with aortic cannula positioning at the center of the aortic orifice. Although clamping of the ascending aorta was impossible, all 4 patients underwent replacement of the aortic arch under deep hypothermic circulatory arrest either with or without selective cerebral perfusion, depending on the needs of each case.

Administration of cardioplegic solution was thus performed after the aorta was transected under deep hypothermic arrest. Therefore inability to administer cardioplegic solution was not an essential problem. Repair of the apex was completed during cardiac arrest, and systemic perfusion was resumed through cannula in the graft.

We concur with Terada and Nakamura regarding the usefulness of the axillary artery as the first alternative access to the femoral artery.³ We used axillary artery cannulation in 23 of 935 patients who underwent cardiac surgery with cardiopulmonary bypass. In the 4 patients who underwent transapical cannulation, both the femoral artery and axillary artery were inaccessible or inadequate as a systemic perfusion site because of compressed true lumen of the descending aorta, severe obesity, or subclavian artery disease. If a patient has these conditions, transapical aortic cannulation is indicated. We believe that transapical aortic cannulation is safe and useful for such selected patients.

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Thymectomy in ocular myasthenia gravis

To the Editor:

We read with interest the recent article by Roberts and associates¹ on thymectomy in the treatment of ocular myasthenia gravis (OMG). It represents an important step in the debate concerning this issue and in the consideration of OMG as part of a broad-spectrum disease and not as a distinct disease.

What we know from the literature is that the disease will progress in about 50% of patients with initial OMG.² On the other hand, thymectomy is considered a mainstay therapy for generalized myasthenia gravis (GMG), and the best outcome is expected in patients operated on early after the onset of the disease.

What we should simply do is predict when a pure OMG is an initial GMG and offer to such patients the best treatment, which might also include an extended thymectomy.

Apart from the presence of a thymoma, which makes the surgical procedure mandatory, no clear indication for thymectomy in OMG appears in the literature.

Only a few studies have focused on thymectomy in OMG,^{1,3-5} and when patients with OMG are merged with those with GMG, the assessment of the efficacy of thymectomy is difficult for the combined action of various medical therapies and for the lack of standardized methods for assessing patient status before and after surgical intervention and assessing the correct criteria of success.

A contribution to the discussion about this topic might be derived from our experience.

From 1993 to now, 29 patients with OMG underwent transternal extended thymectomy at our institution. In the same period, the same neurologist (R.R.) treated 343 patients with OMG, and consequently, the eligibility rate for surgical treatment of OMG was 8.5%.