Letters to the Editor

The effect of the dynamic air bubble trap on cerebral microemboli and S100 β

To the Editor:

We read with interest the article by Schoenburg and colleagues¹ regarding the use of an air bubble trap during coronary artery bypass grafting. The authors used measurement of S100 β as an indicator of cerebral injury. It is not clear, however, whether they took steps to minimize auto-transfusion of S100 β from extracerebral sources. There is good evidence to show that blood aspirated from the surgical field and returned to the patient through cardiomy suckers will result in significantly higher serum levels of S100 β .^{2,3}

The study showed no significant difference in serum S100 β between the two groups at the end of the operation and 6 hours afterward. If the hypothesis that microemboli are the main cause of cerebral injury with a resultant rise in S100 β is correct, then a significant reduction in cerebral microemboli should be accompanied by a significant reduction in S100 β at these time points. In fact the higher, albeit not statistically significantly, mean S100 β levels in the placebo group could be accounted for by the longer mean cardiopulmonary bypass time in this group. A longer bypass time implies that more blood is suctioned from the mediastinum, with increased return of mediastinal blood rich in extracerebral sources of S100 β to the circulation, thus resulting in higher serum levels of S100 β .⁴

Furthermore, the statement that there was a significant difference in S100 β values at 48 hours is misleading. The Sangtec 100 immunoradiometric assay (Sangtec Medical AB, Stockholm, Sweden) that was used in the study has a lower detection limit of 0.2 μ g/L. The mean S100 β value for both the bubble trap and placebo groups was below this level, and thus normal. We therefore do not agree with the conclusion that the dynamic air bubble trap reduces S100 β early after coronary artery bypass grafting. A more sensitive analysis of

S100 β could have been carried out with the immunoluminometric method (Sangtec LIA 100; Sangtec Medical AB), which has a functional detection limit of 0.02 μ g/L.

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Improved pain control after cardiac surgery

To the Editor:

We read with interest the article by Dowling and associates¹ about improved pain control by means of intraoperative intercostal nerve block followed by postoperative continuous infusion of ropivacaine. We performed a similar study that will be published soon.² We randomly assigned 47 patients to two groups. The study group (n = 23) was treated by soft-tissue infiltration with bupivacaine (10 mL 0.5% bupivacaine) followed by 36 hours of continuous infusion (bupivacaine 0.5% at 120 mL/24 h) through a small-diameter catheter positioned anteriorly to the sternum. In the control group (n = 24) the catheter was posi-

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