Figure 1. The opened wall of a large ascending aortic aneurysm. Note that the wall of the aorta has become so thin that the markings on a ruler can be read right through the aortic wall.

strain. In our echocardiographic studies on normal and aneurysmal ascending aortas, we have consistently found that the anterior wall of the aorta (the “greater curve,” so to speak) expands more than the posterior wall. These data were recently presented at the American Society of Anesthesiologists meeting in Las Vegas (October 23-27, 2004). This finding agrees with the mechanical concept that an unsupported tissue layer (the anterior wall) experiences more stress compared with a supported layer (the posterior wall, which is supported by the pulmonary artery and the associated central mediastinal fibrous tissues). These findings validate and support the importance of regional variations in mechanical properties of the aorta that Dr Sundt and colleagues have detected.

We share Dr Sundt’s skepticism regarding ruptured vasa vasorum as the cause of intramural hematoma. In fact, prompted by an insightful observation by Dr Kouchoukos some years ago, we have scrutinized the internal lining of the widely opened aorta during deep hypothermic arrest in cases of intramural hematoma. In most, but not all, cases one can find an intimal tear that was not appreciated even on high-quality preoperative radiographic images. In a small minority of cases, no intimal tear exists. It is specifically to explain such no-tear intramural hematomas that the concept of rupture of the vasa vasorum has been postulated. Also, our

echocardiographic measurements have confirmed Dr Sundt’s hypothesis that stress on the adventitia is greater than stress on the media. We agree with Dr Sundt that uneven distribution of wall stress across the layers of the aortic wall might play a role in the genesis of intramural hematoma. This thesis awaits scientific confirmation.

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Correlation of autologous skeletal myoblast survival with changes in left ventricular remodeling in dilated ischemic heart failure

To the Editor:

McConnell and colleagues¹ present a well-designed study with implantation of skeletal myoblasts into an infarcted area. The infarction was created by interventional closing of the circumflex artery, and this resulted in dilated ischemic heart failure. The results, however, were somewhat disappointing. As assumed in the editorial by

Tang,² the small number of surviving myoblasts could be one reason for this outcome. Of course, there might be several reasons for cell loss of transplanted cells, but one important issue has not been addressed by both authors: ischemia. The cardiomyocytes of the target area were lost because of insufficient blood supply. There is no reason why the transplanted cells should be more tolerant to ischemia than the native myocardial cells! Therefore the restoration of blood supply to an infarcted area is possibly one important measure to improve survival of transplanted cells. Additionally, further cell division and differentiation also depend on sufficient oxygen and nutrition supply.

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Intercoastal muscle flap without increase of pain and blood loss after lung surgery

To the Editor:

We read with interest the article by Cerfolio and colleagues.¹ This report demonstrated that harvesting the intercoastal muscle flap (ICM) reduces the pain of thoracotomy. We also have some data about the pain in comparison of cases with ICM harvesting and other cases without ICM harvesting (non-ICM), as in the study performed in our institution. ICM is very mobile and vascular rich. Therefore the ICM was used in the reinforcement of perforated esophagus or bronchopleural fistula.² In our series of patients, performing lobectomy with reinforcement of ICM to bronchial stump never resulted in bronchopleural fistula over the decade.

We had 35 patients who had ICM flap with lobectomy (ICM group) and 51 pa-

Figure 1. Statistical analysis. All statistical analyses were performed on a personal computer with the statistical package JMP version 5.0 for Windows (SAS Institute). The incidence and significance of pain scores was compared with harvesting ICM factors by using the χ^2 test as appropriate. Analysis of variance was used for the analysis comparing 2 groups. Analysis of variance was also used for the intercostal muscle (ICM) flap for drainage. All tests were 2 tailed. **Left,** Six-point scale pain score for 4 hours after lung surgery. No statistically significant difference could be observed between the groups ($P = .47$); however, on the whole, the pain score is lower than for the non-ICM group. **Right,** Volume of chest tube at day 1 after the operation. No statistical difference could be observed between the groups ($P = .62$); however, the median is also lower than for the non-ICM group.

tients who did not (non-ICM group) in the last 2 years in our institution. We compared the pain of patients between the groups using a 6-point scale pain score for 4 hours after lung surgery (Figure 1). There was no statistically significant difference between the groups ($P = .47$).

Because we wondered whether harvesting the ICM might lead to an increase of blood loss from the muscle after the operation, we also examined the blood loss after the operation observed from the chest tube. The drainage volume from the chest tube at day 1 after the operation was 215 mL in median (range, 30-480 mL) in the ICM group and 272 mL (range, 10-530 mL) in the non-ICM group (Figure 1). There was no statistically significant difference between the groups ($P = .62$). We believe that harvesting with cautery causes no increase of bleeding. When harvesting, maintaining a good blood supply is very important in this technique. It was reported that ICM sometimes results in calcification in the flap itself,³ resulting in various complications in the short and long term after the operation. We believe that enough blood supply in the ICM does not lead to calcification of the ICM because use of ICM in our institution never resulted in calcification of the ICM. In addition, there was no complication caused by harvesting the ICM in our series of patients, such as subcutaneous seroma or abscess.

Again, in our series of patients, there was no difference in terms of pain. We suspect that there might be 2 reasons why our results were different from your results. One possibility is that not cutting the rib in the author's procedure of non-ICM surgery might strongly press the nonharvested intercostal nerve and increase the pain, resulting in the difference of pain between the ICM group and the non-ICM group. When we open the chest with standard thoracotomy, we usually cut the rib, and we joint the rib at the end of the operation. We believe that cutting the rib releases the tension of the rib in the operation to some extent and reduces the patients' pain. The other possibility is that the different procedure of the wideness of the chest opening might cause the difference in pain. When opening the chest, we take care to hardly retract the rib and not to damage the intercostal nerve. We would like to hear your opinion.

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Reply to the Editor:

We appreciate the letter from Dr Maniwa and colleagues. The authors have tried to confirm our results in their own study. The authors have retrospectively, I believe, compared the pain scores in patients using a "6-point scale pain score." My understanding from their letter is that they assessed the pain for "4 hours after lung surgery." If I understand their study correctly, and I apologize if I do not, I invite them to perform a prospective randomized study between 2 similar groups and to compare the patients' pain several days, weeks, and even months after the operation by using an objective reproducible scale. As for their explanation as to why they found no difference, I would cite the methodology difference between our 2 studies. Importantly, we strongly disagree that cutting the rib leads to less pain. There is no data for that concept, and our opinion is that, if anything, it might lead to more pain because the intercostal nerve might be injured when the rib is shingled. We used to perform our thoracotomies in this manner but changed our technique in 1997. Finally, the authors also decided to analyze the blood loss difference between the patients who had an intercostal muscle flap harvested compared with that in the group that did not have a flap. In our experience there is almost no blood loss during the harvesting of an intercostal muscle flap. As described in our article, we do it using the Bovie and hug the undersurface of the top rib so as to avoid the neurovascular bundle. The bundle is very close, and it is not uncommon to have small side branches that have to be bovied, but the amount of bleeding is negligible. In this respect our studies have similar findings. We thank Dr Maniwa and his colleagues for their interest in our article and wish them well.