documentation of the neurodevelopmental and cognitive outcome of these patients.

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Reply to the Editor:

We appreciate the comments of Rodriguez and colleagues. Although the patient was not actively cooled, a low ambient temperature allowed the patient's body temperature to initially drift to around 33°C, necessitating active rewarming at the end of the operation. It is known that moderate to mild (26°C-35°C) hypoperfusion can attenuate the so-called excitotoxic cascade associated with cerebral hypoperfusion. Similarly, there is a fairly steep exponential fall in the cerebral metabolic rate for oxygen, with temperatures ranging from normothermia to 35°C. These facts, taken together with the short superior vena cava clamp time, should minimize the risk of neurologic damage.

We will endeavor to supplement future attempts at performing the bidirectional Glenn procedure without bypass with near-infrared spectroscopy of transcranial Doppler assessment of cerebral blood flow. In addition, we agree with the authors that demonstrating the safety of this operation will need detailed assessment of the patients by neurologic and psychometric testing.

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Preimplantation retrograde pneumoplegia in clinical lung transplantation

To the Editor:

I read with interest the article by Venuta and associates¹ concerning 14 consecutive patients who underwent lung transplantation. The first patients, group I, had antegrade pneumoplegia with Euro-Collins solution preceded by pulmonary arterial flushing with alprostadil (prostaglandin E₁). In group II, additional retrograde flushing was given via the pulmonary veins just before implantation. The authors concluded that retrograde flushing is not detrimental and helps to improve early graft function. The chest x-ray score was significantly better in group II, intubation time was less, and the ratio of arterial PO₂ to inspired oxygen fraction was improved, although the differences did not reach statistical significance.

My colleagues and I² were the first group to use retrograde pneumoplegia in clinical transplantation. However, we did not use antegrade pneumoplegia in those patients, nor did we use alprostadil. The retrograde pneumoplegic solution was given via the left atrium and the flush solution was vented through an incision in the pulmonary artery. This was done immediately after the aorta was crossclamped and cardioplegia established. The lung almost seemed to light up as the retrograde infusion started. Retrograde pneumoplegia was associated with excellent oxygenation, which remains the most sensitive indicator of the adequacy of lung preservation, as well as the lack of any reimplantation response postoperatively, a finding also shown by the current study. What Venuta's study really demonstrates is that retrograde pneumoplegia may confer additional benefits to lung preservation compared with those of antegrade pneumoplegia alone.

Two criticisms can be leveled at this study. First, retrograde pneumoplegia was given after harvesting of the donor lung, not at the time of the harvesting. This point has already been addressed, and the current practice of the group is to give the retrograde perfusion solution immediately after the antegrade perfusion is finished. The second criticism is that pneumoplegic solution was given individually into each pulmonary vein. This method is at variance with our technique, in which the pneumoplegic solution was given into the left atrium and therefore had a uniform distribution through both lungs, something that cannot be guaranteed if individual veins are perfused separately.

I do congratulate Venuta and his colleagues for highlighting the potential advantage of retrograde pulmonary perfusion in clinical lung transplantation.

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