

CORRESPONDENCE

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In Reply:—We appreciate the comments by Weigand *et al.* concerning our use of ventricular fibrillation to facilitate endovascular stent-graft repair of thoracic aortic aneurysms. The use of adenosine is viable for induced asystole during endovascular stent-graft deployment if the time of anticipated deployment is known with a high degree of certainty and if the period of absolute asystole necessary is less than 15–20 s. Longer durations will result in unpredictable breakthrough ventricular escape beats that may compromise stent-graft positioning. In our experience, commercially produced large angioplasty (valvuloplasty) balloons of 30–40 mm in diameter necessitate inflation and deflation times well in excess of 30 s; the exact duration of asystole necessary for successful deployment may be variable and not easily determinable until the time of stent-graft deployment. This need for a prolonged duration of stent-graft deployment is especially necessary during endovascular repair of the thoracic aortic using angioplasty balloon-activated devices (self-expanding endovascular devices do not necessitate this duration of time for deployment). This variability of stent-graft deployment times often is related to the complexity of the anatomy within the vascular segment being repaired. As described in our report, we have required from 55 to 172 s of asystole.¹ Because of interpatient variability in the action of adenosine, there is a risk of escape ventricular beats. Such unanticipated ventricular escape beats would probably adversely effect stent-graft position.

We agree with Weigand *et al.* that adenosine has some advantages over ventricular fibrillation during endovascular stent-graft deploy-

ment, most notable its consistently benign effect on the patient. The purpose of our case report was not to argue for the replacement of adenosine with ventricular fibrillation, but rather to suggest that induced ventricular fibrillation may be another viable method for providing asystole in a subgroup of patients undergoing endovascular repair in which controlled cardiac arrest was mandatory. We agree that further experience will assist in delineating the indications for each of these modalities.

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Reference

1. Kahn RA, Marin ML, Hollier LH, Parsons R, Griep R: Induction of ventricular fibrillation to facilitate endovascular stent graft repair of thoracic aortic aneurysms. *ANESTHESIOLOGY* 1998; 88:534–6

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New Double Intrabronchial Tube (Naruke Tube) for Tracheostomized Patients

To the Editor:—Conventional double lumen intrabronchial tubes are designed for insertion through the oral cavity. They are not designed for use through a tracheal stoma.

In a previous report, Brodsky *et al.*¹ reported a development of a tracheostomy double-lumen tube. However, it was not designed for patients with permanent stoma, and we have encountered circumstances in which the tube did not fit the patient's trachea and bronchus well. We have, therefore, developed a new tube for use in such patients.

Composition of the Tube and Its Assembly

The new endobronchial tube is a silicon, spiral, wire-reinforced double-lumen tube (fig. 1). The tube was made in three individual parts—the distal section beyond the tracheal orifice, the middle section between the tracheal cuff and the point of bifurcation, and the

proximal bifurcated part—and assembled later. Assistance with the design and all tube construction and fabrication work was performed by Koken Medical (Shinjuku-ku, Tokyo, Japan).

The Middle Section

The middle section of the tube is the trunk. It is constructed of two thin-walled silicon tubes that are glued together with an inner diameter of 5.0 mm, reinforced with a stainless spiral wire, and covered in a silicon coating. Two pilot balloons were included that ran within the walls of the two inner tubes, one of which exited the wall of the tube to supply the tracheal cuff, which also is made of silicon.

The Distal Section

The distal section, containing the bronchial lumen and the cuff, is also constructed of wire-reinforced silicon. The dimensions are based