In Reply.—We are pleased to note that pulmonary hypertension did not occur at 5, 10, or 15 min after an intravenous bolus infusion of 0.0–7.0 mg/kg of rPF4 injected to reverse heparin anticoagulation in humans after bypass.

We believe the following two comments are important:

First, almost all nonallergic clinical heparin-prostate reactions are characterized by explosive pulmonary hypertension occurring within the 1st minute after protamine injection, whereas central hemodynamics are returned to normal by 5 min. Thus, the first reaction provided by Gieckele and Alexander at 5 min may be too late to learn the incidence of heparin-PF4 reactions characterized by pulmonary hypertension.

Second, we have reported the incidence of nonallergic pulmonary hypertension in a prospective study of 925 patients at Massachusetts General Hospital of 1.5%. 1 A similar incidence of two reactions in 48 patients studied was reported by Morel et al. 2 Presuming that human allergy to rPF4 does not occur, reducing or eliminating the incidence of these occasionally catastrophic heparin-protease reactions is the sole medical rationale for developing rPF4, which is likely to be an expensive alternative to protamine. To justify this expensive recombinant molecule, a large controlled, randomized, blinded comparison in hundreds or thousands of patients will be required to show the efficacy of rPF4 at heparin reversal while causing less acute pulmonary hypertension than protamine. This will take a careful and major effort in many centers.

We still are uncertain why 100% of protamine injections to neutralize heparin in sheep and pigs produce thromboxane release and acute pulmonary vasocostriction, whereas this occurs in only 1.5% of humans. Perhaps some human lungs, like those of sheep, harbor pulmonary intravascular macrophages, presumably the sensitive cells producing thromboxane. The foreign protein reaction to rPF4 alone when injected in sheep was intense, thereby preventing us from examining the response to rPF4 neutralization. Interestingly, the foreign protein protamine does not produce pulmonary hypertension when injected alone intravenously into sheep. Apparently, rPF4 is far more stimulatory. Human experimentation with rPF4 in thousands of patients will be required. We believe this is a worthwhile pursuit and wish Repligen good fortune in the randomized, prospective, blinded clinical trials of rPF4.

Warren M. Zapol, M.D.
Matt M. Kurrek, M.D.
Department of Anesthesia
Massachusetts General Hospital
Boston, Massachusetts 02114

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Laryngeal Mask Airway for Resuscitation of a Newborn with Pierre-Robin Syndrome

To the Editor.—Paterson et al. have shown that the laryngeal mask airway (LMA) can be used as an effective method of airway management during neonatal resuscitation 3 as an alternative to bag-and-mask ventilation. 2 The investigators suggest caution in the use of the LMA in neonates beyond the population studied, which did not include neonates who were suffering from congenital oropharyngeal pathology. 2 The current report describes the use of LMA for resuscitation of a newborn with Pierre-Robin syndrome after failure of tracheal intubation and face-mask ventilation.

The newborn was a 5-day-old, 3.2 kg, full-term male with Pierre-Robin syndrome (micrognathia, cleft palate). The anesthesiology team was paged when serious airway obstruction and cyanosis developed that were not relieved by lateral positioning of the baby, traction of the tongue, and face-mask oxygen. Pulse oximetry showed the hemoglobin oxygen saturation (Sp02) to be 40% and the electrocardiogram showed sinus bradycardia (50 beats/min). An oropharyngeal airway was inserted, and ventilation via face mask with 100% O2 resulted in inadequate chest inflation associated with gastric distension. Direct laryngoscopy using different blades (Miller, Oxford) failed to visualize the larynx. A size-1 LMA was inserted easily, and its cuff was inflated with 5 ml of air. Ventilation with a T-piece circuit using 100% O2 resulted in adequate and easy chest inflation without

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Rigid Bronchoscope: A Possible New Option for Percutaneous Dilational Tracheostomy

To the Editor.—The performance of percutaneous dilational tracheostomy has increased in recent years with the advent of guidewire-based techniques and better materials.1,2 Claimed advantages over conventional tracheostomy are that dilational techniques are easier and quicker to perform at the bedside, with a low incidence of late complications.2 Technical problems associated with the procedure include (1) incorrect placement of the needle, (2) failure under withdrawal of the endotracheal tube (ETT), (3) slippage of the ETT by the needle or cuff puncture, and (4) ventilation difficulties during passage of the dilators. The first three problems may be avoided by passing the fiberoptic scope down to the tip of the ETT, allowing better control over needle placement and ETT position. However, this may make ventilation more difficult because gas flow through the ETT is limited by the presence of the fiberoptic scope.1 A possible improvement in selected patients is to exchange the ETT for a tracheal tube (LMA).3 This technique has limited application. Another option is to use the rigid bronchoscope.

A 25-yr-old, 68-kg man whose lungs had been ventilated for 2 weeks after a cardiac arrest underwent fiberoptic-guided percutaneous tracheostomy, a routine procedure at our institute. Two senior anesthesiologists were present, one to provide airway care and anesthesia, the other to perform the procedure. A superficial horizontal incision was made over the subclavicular area and a 14-G needle passed into the trachea between the second and third tracheal rings. A guidewire was inserted and the position confirmed by fiberoptic inspection of the ETT, which had been withdrawn into the larynx. A tracheal tube was then inserted by blunt dissection and the passage of progressively larger dilators until an 8-mm tracheostomy tube could be placed. The procedure was uneventful, but an hour afterward, the lungs became difficult to ventilate. A large blood clot was found to be obstructing the left main bronchus, an uncommon but well-documented complication of the technique. Several attempts at removing the clot with fiberoptic-guided suction and grasping forceps failed. Eventually, the tracheostomy tube was removed, and a rigid venturi bronchoscope (RVB) was used to extract a semisolid 20-ml clot, resulting in considerable improvement in lung function. There was no active bleeding from the tracheostomy site. Because the patient was stable, the percutaneous tracheostomy was repeated with the RVB functioning as a guide and for airway control. The approach to the trachea was made via the same incision, but the guidewire was inserted between the first and second tracheal rings to minimize the risk of further bleeding. The procedure was uneventful.

We subsequently used the RVB to perform percutaneous tracheostomy on six patients without difficulty and have been impressed with the advantages it offers over other techniques. It provides a clear, undisguised view of the surgical site and supports the tracheal architecture while the dilators are being passed. Also, there are none of the difficulties in ventilation that commonly accompany percutaneous tracheostomy. We found that the position of the bronchoscope was controlled easily and that tracheal suction could be performed readily. Potential limitations of the technique include difficulties in placing the RVB and damage to teeth. Aspiration is possible, but if this occurred, it would be identified immediately and cricoid pressure could be applied while the airway was made secure and suction was performed. Aspiration may still occur with the standard technique if the ETT is withdrawn too far or the cuff is damaged. In addition, the risk/benefit ratio of exchanging the ETT for the rigid bronchoscope must be considered. Perhaps the main limitation of

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Altered Taste

To the Editor—Some time ago I had an incident in which a 47-yr-old patient presented an uneventful general anesthetic some extraction. The patient complained of an altered taste and smell. I noticed that...