published today, could be compacted to almost abstract proportions, and still transmit a few cryptic messages. But we disagree most strongly with Dr. Steen's view that our material could or should have been presented in a single paper, for the following reasons.

First, our volunteer study set out to ask three questions: 1) Do effective analgesic doses of epidural morphine bestow a limited segmental block as originally believed, and if so for how long? 2) Are the analgesic side effects of intravenous morphine different from those of epidural morphine, and if so how long does each last? 3) How can the side effects be treated, and can we establish a working hypothesis for their causes? The first and second questions were answered, and the third partially answered, at least insofar as it cleared up some existing misconceptions in the literature. In our view, the mass of new data generated from 500 hours of observation and measurement could not be reduced and contained in a single paper, without losing much of its force and argument. The data fell naturally into two distinct parts, with rostral spread as one, and the side effects as another. There was indeed some overlap in the two papers, but this seemed a necessary price to pay for clarity of the overall picture. Unfortunately our respiratory data was not fully reduced (and is still not fully processed), and the reviewer of our second paper requested that this incomplete respiratory data be either expanded or deleted. We felt the latter course was more prudent in view of the difficulties that we were experiencing in agreeing upon the correct statistical treatment of the respiratory material. Thus, the paper on side effects lost some of its more important content and the final version was less complete than we had intended.

Our second reason for full reporting and discussion was the strategic nature of the study. A literature review had failed to unearth any continuous study on the analgesic and side effects of morphine over periods of more than 6 to 8 hours. Our protracted protocol of 24-to 26-hour sessions was therefore unique both in duration, and in the quantity and diversity of the information it yielded. Moreover, the new information had both clinical and conceptual immediacy that required early and complete treatment for reasons of safety and good practice.

We trust that these observations will give Dr. Steen some insight into the events and intents that led to the publication of two papers instead of a single truncated and incomplete version of the total picture.

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(EDITORIAL COMMENTS)

The interested reader is encouraged to compare the two Bromage et al. articles before arriving at a judgment.

THE EDITOR

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Respiratory Assistance Secured by Jet-Ventilation during Broncho-Fiberscopy in Forty-nine Infants

To the Editor.—Bronchofiberscopic examinations remain hazardous in infants with respiratory distress. To prevent dramatic impairment of gas exchange, we developed a method of respiratory assistance using jet-ventilation which has been used in 49 infants of three days to three years of age. Similar to the study of Satyanara et al.,¹ the injector was connected directly to the suction-channel of the fiberscope, which served as the jet-channel. Ventilation variables were regulated preoperatively by measuring delivered oxygen pressure and volume at the tip of the bronchoscope. Insufflation time was limited to 0.3–0.5 s with an inspiratory to expiratory ratio

[Note: The text is cut off at this point.]
of about 0.8–1.0, and respiratory rates regulated in accordance with infants’ ages from 60 to 50 min. Maximal Venturi effect was controlled through endotracheal tubes of various size. We made sure that the delivered volume could never exceed 10 ml/kg (normal tidal volume). Premedication comprised atropine sulfate (0.02 mg/kg) and diazepam (0.1 mg/kg). Anesthesia was induced by the continuous infusion of Althesin®, 2 mg/kg⁻¹·h and d-touferin, 0.1 mg/kg, iv. The fiberscope then was introduced and jet ventilation induced. After every distal exploration, the fiberscope was removed above carina for ensuring bipulmonary insufflation for 15 s. Monitoring procedures did not reveal significant disturbances. The eight infants who benefited by continuous measurement of tissue Pco₂ showed only slight variations ranging from 81–159 mmHg. The three patients whose tissue Pco₂ could be obtained continuously demonstrated a tendency for slight hypercarbia (greatest value: 47 mmHg). We did not observe any complication during the jet-ventilation itself. Severe bronchospasm occurred during induction in a 5-month-old male infant with an unrecognized intrabrachial foreign body. At the end of the procedure, and after removing the fiberscope, two infants remained dyspneic for about one hour, and two other infants experienced slight bronchospasm which did not require special treatment support except for oxygen supplementation for a few minutes.

Following this procedure of jet-ventilation, no additional material had to be introduced into the respiratory tract and the jet source (tip of the fiberscope) could be controlled visually without interruption. This and the precise regulation of delivered gas volumes and pressures prevented either damage to the pulmonary parenchyma. or to the fiberscope. In this way, we think that such a procedure for jet-ventilation is suitable in children and especially in infants in poor conditions.

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REFERENCES
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A New Anatomic Laryngoscope

To the Editor—During laryngoscopy, a problem frequently encountered is placement of the narrow blades directly into the esophagus. One of us (H.v.Z.B) designed a blade to fit the broad base of the tongue bordering on the base of the epiglottis. After a study of postmortem specimens, we decided that the beak would fit best between epiglottis and tongue if it was broadened to more than twice that of presently used blades.

Three sizes were designed: a small size for children, a medium size for the average adult, and a large size for exceptionally large and morbidly obese patients (fig. 1).

We have used the new blades for teaching students, house staff, and residents, as well as for routine practice in all branches of clinical anesthesiology for over a year. Particularly, beginners appreciate the ease with which the lubricated blade slides over the tongue directly into the glosso-epiglottic recess, so that very little if any portion of the tongue encroaches on the field of vision. A return to the traditional Magill and Macintosh laryngoscopes is now unthinkable to us, except during the first three years of life, when the relatively bulky tongue reduces the efficacy of the curved, Macintosh principle by limiting the upward (horizontal) lift of the laryngoscope. We believe the straight Magill laryngoscope remains the instrument of choice for visualization of the anterior glottis during the first three years of life.

The beak of the Beukes blade should be passed as far down in the valleculae as it will comfortably go with the cervical spine of the patient flexed by support of the head into the “sniffing” position. This maneuver significantly shortens the distance from teeth to glottis, as