participate in medical education and publications. However, her assumption that the patient photographed for this article was unaware of the "consequences of the consent," is erroneous. Informed written consent was obtained; and the published photograph is quite appropriate for the topic of presentation. Any further framing of the face or torso would have resulted in less than optimal illustration of the necessity for correct patient positioning. Any suggestion of impropriety and breach of confidentiality in this case is unwarranted as consent was obtained and editorial and peer review determined the photograph educational. As Slue suggests, the practice of placing a bar across the eyes in a photograph does not ensure patient anonymity, is distracting, and probably should be abandoned in the medical literature.

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Breathing circuit occlusion due to defect in swivel port connector

To the Editor:

Equipment problems and failures are often reported in the anaesthetic literature.^{1,2} We wish to report two cases of occlusion of the breathing circuit secondary to obstruction of the swivel port by foreign bodies. One was operated by the rubber cap which closes the exhalation dome of an ICU ventilating circuit and the second by a black plug of the inflatable mask cushion occluding the swivel port. In the former case, we could not ventilate the patient's lungs after connecting the swivel connector. In the second the lungs could be ventilated but on exhalation airway pressure built up as the black plug worked like a ball valve. All the equipment should be checked prior to anaesthesia. However, these swivel connectors are supposedly disposable. These problems may occur when they are sterilized and reused.

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REFERENCES

- 1 Cook WP, Gravenstein JS. Breathing circuit occlusion due to a defective paediatric face mask. *Can J Anaesth* 1988; 35: 205-6.
- 2 Wright PJ, Mundy J, Mansfield CJ. Obstruction of armoured tracheal tubes: case report and discussion. *Can J Anaesth* 1988; 35: 195-7.

REPLY

Manufacturers have many concerns as do medical care personnel when devices are re-used. The problem of smaller components being trapped inside any lumen as noted in the letter from Gordon Urbach et al. is a constant potential. When there are bends, especially sharp turns, this may increase the potential of part entrapment. Other concerns for re-use include cleaning and sterilization. The effect on materials when they are processed and re-used may have unexpected effects. We want to emphasize that any critical pathway may result in serious effects if the lumen is plugged, whether it is during preparation for re-use or any time. The cautions stated in the letter are important and we concur with them.

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Airway management in C-spine injuries

To the Editor:

We read with interest the manuscript entitled "The adult cervical spine: implications for airway management" by Crosby and Lui (1990; 37: 77-93). We would like to comment on the authors' recommendations, and offer another option for airway management in patients with a known or suspected cervical spine injury.

Crosby and Lui conclude that based on the available data, "... the optimum mode of intubation in a patient with an unstable spine is an awake, fiberoptic bronchoscope-aided intubation ... when indicated." We would like to emphasize that fiberoptic intubation in the acutely trau-

matized patient is extremely difficult, even with adequate sedation, topical anaesthesia, and patient cooperation. Although fiberoptic intubation may be associated with a "high rate of success" and "a low rate of complications," these statements apply primarily to elective or semi-elective cases in experienced hands. The patient with a known or suspected unstable cervical spine injury is likely to have other injuries that may interfere with safe and rapid fiberoptic intubation, such as a concomitant intracranial mass or hypertension, and upper airway blood, vomitus, or anatomical disruption. We are unaware of data to support the safety and rapidity of fiberoptic intubation in these patients. Furthermore, relatively few practicing anaesthetists perform fiberoptic intubation with enough frequency to maintain the facility demanded in these cases. Although the authors' did suggest that "... anaesthetists should intubate the patients in the manner with which they have the most expertise," we feel fiberoptic intubation should be reserved for non-emergency patients.

Another option for airway management not mentioned by the authors is percutaneous transtracheal ventilation (PTV). This technique can be easily performed, even with minimal practice, and will provide adequate minute ventilation to maintain normo- or hypocarbia with excellent oxygenation in apnoeic adults.¹⁻³ Although often thought a temporizing measure, PTV has been used to ventilate apnoeic adults for up to 75 min.³ The equipment to perform PTV is readily available in the emergency department, intensive care unit, and operating room. A recent review by Benumof outlined the technique, materials, and contraindications for PTV.⁴ As with all methods of airway management with an unstable cervical spine injury, there are few prospective data to support the safety of this technique. However, no chin or neck manipulation is necessary during PTV, so that little harm would be expected. When properly performed, PTV may provide protection from aspiration in the supine patient.⁵⁻⁶ If desired, an elective fiberoptic intubation (using the transtracheal cannula as a landmark), cricothyroidotomy or tracheostomy can be performed in patients unable to have an oral or nasal tracheal tube placed safely under direct laryngoscopy.

We congratulate the authors on tackling a broad and controversial topic. As with many medical dilemmas, there is no single right answer or approach. We hope that our comments will aid the physician should an airway crisis occur in a patient with a suspected unstable cervical spine injury.

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REFERENCES

- 1 Jacobs HB. Emergency percutaneous transtracheal catheter and ventilator. *J Trauma* 1972; 12: 50-5.
- 2 Jacobs HB, Smyth NPD, Witorsch P. Transtracheal catheter ventilation: clinical experience in 36 patients. *Chest* 1974; 65: 36-40.
- 3 Spoerel WE, Narayanan PS, Singh NP. Transtracheal ventilation. *Br J Anaesth* 1971; 43: 932-9.
- 4 Benumof JL, Scheller MS. The importance of transtracheal jet ventilation in the management of the difficult airway. *Anesthesiology* 1989; 71: 769-78.
- 5 Yealy DM, Plewa MC, Reed JJ et al. Aspiration during manual low frequency jet ventilation. *Ann Emerg Med* 1989; 18: 458-9.
- 6 Klain M, Keszlar H, Stool S. Transtracheal high frequency jet ventilation prevents aspiration. *Crit Care Med* 1983; 170-2.

REPLY

We thank Yealy et al. for their interest in our review and would like to address their criticisms and comments. We did not "conclude that based on available data" that the optimum mode of intubation in an acutely traumatized patient with an unstable spine is an awake, fiberoptic bronchoscope-aided (FOB) intubation. The words in quotation marks are those of Yealy et al. and these remarks should not be attributed to us. We did express the opinion that, in a non-urgent situation and given that the anaesthetist is both familiar and comfortable with the technique of FOB intubation, the technique had some advantages when compared with other modes of intubation. We then outlined what we perceived those advantages to be. We did note that there is no evidence that neurological outcome is influenced by the mode of intubation, in this patient population. In the acutely traumatized patient requiring urgent airway intervention, we emphasized that intubation must proceed with both haste and care. We did not specify a particular technique but did comment, again, that there were no data to recommend one technique over another, in preserving neurological function. We did suggest, as Yealy notes, that anaesthetists should care for these patients in the manner with which they have the most expertise and the greatest comfort.

In the situation described, of a known or suspected unstable cervical spinal injury with concomitant mass or hypertension, upper airway blood or vomitus and anatomical disruption, we would regard percutaneous transtracheal ventilation (PTV) with high-frequency jet ventilation (HFJV) as a temporizing intervention only. While we recognize that adequate ventilation