REPLY

I wish to thank Dr. Drummond for his kind words and comments. A section in my initial draft was removed from the manuscript, as it soon became apparent that a discussion of brain damage associated with craniotomy as a result of the pathology, surgery and anaesthetic techniques would greatly increase the size of the review. Since reports of good studies on regional cerebral blood flow during deliberate hypotension were scarce, Pinaud et al's. data obtained during cerebral aneurysm surgery were used to show that the normal brain is tolerant of nitroprusside-induced hypotension.

The risks of brain damage from deliberate hypotensive anaesthesia are minimal if the patients are carefully selected, the arterial blood pressure monitored closely and controlled, and the hypotensive agents used properly. Although these principles may be applied to most surgical procedures, they were intended for use in general surgery in my review, and not to endorse the use of hypotensive anaesthesia during aneurysm clipping.

Dr. Drummond's update on the changing practices regarding deliberate hypotension for intracranial aneurysm surgery is most timely. Indeed, cerebral vasospasm is a major cause of neurological morbidity and mortality among patients with ruptured cerebral aneurysm. Cerebral perfusion may be further compromised by a reduction of perfusion pressure. Dramatic improvements in the coma scale are often seen when the perfusion pressure is raised by volume expansion guided by pulmonary pressures.

We are aware of the current concerns regarding the use of deliberate hypotension during aneurysm clipping. Until more clinical data are available, our neurosurgeons still prefer to use deliberate hypotension. However, the degree and duration of controlled hypotension are kept to a minimum. Usually, a mean systemic blood pressure of between 55 and 70 mmHg is adequate. Only rarely is a lower pressure used for a few minutes at the time of clip application on large aneurysms.

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Critical incident report: total airway obstruction secondary to design of a tracheostomy set

To the Editor:

We wish to report an incident involving the use of a Rüsch tracheostomy set. The patient, a 61-yr-old woman requiring prolonged ventilatory support after cardiac surgery, had an elective tracheostomy performed in the operating room with insertion of a Rüsch Ultra Tracheoflex® no 7 tracheostomy cannula. Uneventful mechanical ventilation was resumed in the intensive care unit. Shortly thereafter, the patient was turned to her side and immedi-

FIGURE 1 View of the tracheostomy cannula in normal position in a human adult cadaver specimen of the larynx and trachea. Part of the tracheal rings have been cut away to enable the cannula to be visualized. The oesophagus is to the right, in contact with the soft posterior wall of the trachea.

ately became tachypnoeic. Within minutes, she was cyanosed and ventilation via the tracheostomy cannula was impossible. The cannula was withdrawn completely, the trachea intubated via the oral route and normal ventilation resumed while waiting for surgical reinsertion of another tracheostomy cannula. The patient remained haemodynamically stable throughout the incident and suffered no apparent sequelae.

The Rüsch cannula is composed of two separate parts: (1) a cannula and (2) an adjustable flange to secure the cannula in the neck. The cannula is fixed in position by tightly screwing the metal locking ring (arrow, Figure 1) on the restraining collar of the adjustable flange.

It became rapidly apparent that displacement of the tracheostomy cannula was the cause of the patient's airway obstruction. Turning the patient to her side led to