

Sir,
Is suction of CO₂-enriched air under the drape during cataract surgery necessary

I would like to congratulate doctors Inan *et al*¹ on yet another well-conducted study into the extensively documented problem of Carbon dioxide (CO₂) retention under surgical drapes.² Their technique appears to be efficacious; however, the clinical need for such a system for cataract patients is questionable. In the recent surveys conducted by the Royal College of Ophthalmology, it was noted that there had been a drop in the rate of sedation for cataract surgery under local anaesthetic block from 45% in 1991 to 8% in 1996. This rate has probably reduced further since Katz demonstrated an improved safety record for unsedated patients.^{3,4} Where sedation with midazolam is required, a dose of 0.02 mg/kg or 1–1.5 mg is generally effective for the average cataract patient compared with the 3 mg used in the present study. In elderly patients, 3 mg may lead to hypoventilation, CO₂ retention and reduced cerebral responsiveness to CO₂.⁵ This may also explain the reduced oxygen saturations observed even in the treatment group.

The time for which the patients are kept under the surgical drapes was alluded to in the study. Periods greater than 60 min resulted in exclusion. The average draping time for surgery in both arms of the study was prolonged, the average time in our institution being approximately 10 min. In the study by Schlager into CO₂ retention, the time averaged about 20 min.⁶ The longer a patient remains below the drapes, the greater the likelihood of CO₂ retention and the resultant adverse physiological effects.

It has been demonstrated that a flow of between 5–10 l/min oxygen below surgical drapes will prevent rebreathing without any special equipment.⁷ In conclusion, in answer to the question posed by the authors, there is probably no clinical need for any aspiration system for cataract patients performed under local anaesthetic block provided excessive sedation and prolonged draping time are avoided and adequate flows of oxygen are maintained. The system may, however have a place in other forms of prolonged head and neck surgery under local anaesthetic with sedation.

References

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Sir,
Reply

First of all, we would like to express our appreciation for Dr Fry's valuable comments.

Safety doses of midazolam are between 0.01 and 0.1 mg/kg.¹ A total of 1–1.5 mg doses may be more suitable in senile cataract patients as noticed by Fry. In our study, a single dose of 3 mg midazolam was given 15 min before operation also utilizing the premedication effect, and another agent was not given during the entire course. The dose was given under monitoring and no sign of hypoventilation was observed until draping. Therefore, we did not think that hypoventilation observed after draping was related to the dose of midazolam used. Additionally, the patients may overcome the stage of local block more comfortably in the dose used. Fry states that there had been a drop in the rate of sedation for cataract surgery in recent years. A dichotomy between North American practice, in which i.v. sedation appears to be used routinely, and northern European practice, in which sedation is used less frequently, has been reported.² The choice of sedation may change according to trends and regions. Nowadays, use of topical anaesthesia in cataract surgery is being increased and the routine use of sedation is being abandoned at our clinic.