MECHANISM OF ACTION OF KETAMINE

Sir,—A survey of the recent literature indicates that the well-known cardiovascular stimulation seen during ketamine-induced anaesthesia is a result, in part, of potentiation of catecholamines (Uptake) — a cocaine-like activity (Nedergaard, 1973). We have shown that ketamine potentiated vascular smooth muscle, not by a cocaine-like effect, but by inhibition of extraneuronal catecholamine uptake (Uptake) (Lundy, Colhoun and Gowdey, 1972; Lundy, Gowdey and Colhoun, 1976). Recent unpublished observations from our laboratory were that ketamine possessed little if any cocaine-like activity in vascular tissue.

Salt, Barnes and Beswick (1979) showed that a large portion of uptake inhibition in heart tissue was also a result of inhibition of extraneuronal mechanisms. A critical review of the literature would dispel the apparent acceptance of ketamine as an inhibitor of Uptake, in vascular smooth muscle at least. Moreover, ketamine, although apparently possessing some cocaine-like activity in some tissues, cannot be referred to as a cocaine-like compound without reference to the tissues examined and to the importance of Uptake.

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REFERENCES

ANAESTHESIA FOR LARYNGOSCOPY

Sir,—In the past few years several techniques of anaesthesia for direct laryngoscopy utilizing the principle of jet ventilation with oxygen or Entonox through the open airway have been described (Smith, Babinski and Petruscak, 1974; Poling, Wolfson and Siker, 1975; Gillick, 1976; Tobias, Nassar and Richards, 1977; Pybus, O’Connor and Henville, 1978). A recent fatal incident during anaesthesia with the technique using the Nuffield Anaesthetic Ventilator (Pybus, O’Connor and Henville, 1978) in a child of 4 years undergoing laryngoscopy for removal of laryngeal papillomata highlights a hazard of these techniques. Anaesthesia was induced with i.v. thiopentone followed by suxamethonium. Following inspection of the larynx, topical anaesthesia was induced with 10% lignocaine 5 mg kg⁻¹. An 8-f.g. catheter was introduced through the vocal cords until the tip was estimated to lie in the midtracheal region. The catheter was connected to a Penlon Nuffield Anaesthetic Ventilator driven by Entonox supplied from a cylinder fitted with an Airmed reducing valve giving an output pressure of 410 KPa. The flow rate was set to provide 0.25 litre s⁻¹ and inspiratory and expiratory times set to 1 s. Gross surgical emphysema appeared in the neck and face as the abdomen became distended and rigid. The catheter was removed and following tracheal intubation 100% oxygen was given by IPPV. The peripheral pulses were absent and full resuscitative measures were instituted. A massive right pneumothorax was drained, after which the heart sounds reappeared and peripheral pulses became palpable. Despite the rapid institution of a regime for the treatment of cerebral hypoxia, brain death occurred. At postmortem there was no gross evidence of damage to the tracheobronchial tree or lungs.

The cause of this tragedy must have been the presence of excessive pressure within the lungs. Whenever this technique is used it is essential to ensure (a) the correct size (length and width) of catheter in relation to age, (b) a guaranteed expiratory pathway, (c) minimal inspiratory time, (d) adequate expiratory time and (e) the monitoring of chest movement during each inspiration and expiration.

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REFERENCES

ROYAL SOCIETY/JAPANESE SOCIETY FOR THE PROMOTION OF SCIENCE—FELLOWSHIPS

Sir,—May I use your columns to draw attention to an agreement reached recently between the Royal Society and the Japanese Society for the Promotion of Science, for a number of new fellowships to be established. Under the terms of the agreement it would be possible for a member of a British department of anaesthesia which already has links with Japan to apply to undertake research in a Japanese department for a period of between 12 and 24 months.

During his recent visit to this country, Professor Kenjiro Mori indicated that he would welcome a British anaesthetist to study neurophysiology in relation to anaesthesia in his department in Kyoto. Professional communications could be conducted in English and the University of Kyoto maintains a guest house for the accommodation of overseas visiting workers. Enquiries and applications should be addressed to the Executive Secretary of the Royal Society at 6 Carlton House Terrace, London SW1Y 5AG, but I should also be pleased to offer further information to anyone who is interested in taking advantage of this very unusual opportunity.

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