


**Sir,**—We welcome an opportunity to respond to the important issues raised in the letter of Drs VanDerSpek and Wilton.

"Suxamethonium spasm" is a clinical observation which therefore defies accurate definition. The patients we analysed were referred to this laboratory after an "event" which raised the suspicion of malignant hyperpyrexia (MH). The inclusion of all referrals, and not only those with suxamethonium spasm, was to enable the reader to observe the incidence of the condition.

Spasm following suxamethonium, which can be "defined" as a sustained increase in skeletal muscle tone sufficient to hinder intubation or passive movements of the limbs, is uncommon. So too is MH. Therefore if 50% of patients with the one are found to have the other, this is an important association which cannot be glibly dismissed as by your correspondents, who state "indicating that there is no difference in the incidence between the two groups". They clearly have not appreciated that the two groups under discussion exist only after intravenous screening. If the diagnostic tests were not performed we would see only one group containing 50% MH susceptibles—but which 50% is which?

The message we wished to convey seems to have reached the target. We are delighted that Drs VanDerSpek and Wilton concluded their letter by paraphrasing the most important point of our paper (which was even included in the summary of the latter) namely, "however, it might be prudent to monitor for MH and to consider referral to an appropriate medical facility".

F. RICHARD ELLIS
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**SPINAL MORPHINE IN ENURESIS**

**Sir,**—Many authors point out that urinary retention is a side effect of the subarachnoid injection of morphine, and urodynamic investigations have demonstrated that detrusor muscle activity is decreased soon after the extradural administration of morphine, and this is associated with an increase in bladder capacity (Rawal et al., 1983). In contrast, children with enuresis were found to have a more active detrusor and a smaller bladder capacity when compared with normal subjects (Lindeholm, 1966). If these two findings are valid, could the subarachnoid injection of morphine benefit children with enuresis?

A random group of 75 young patients (54 boys), ranging in age from 5 to 19 (12.4) yr were treated between December 1982 and April 1984. The enuresis was labelled as primary in 48 patients and secondary in the other 27. Twenty children wet the bed only intermittently.

As both the parasympathetic and sympathetic nerves are involved in micturition, the morphine was injected, on one occasion, as described by Eriksson (1970), at two spaces: T11–12 (extradural) and L2–3 (subarachnoid). Morphine hydrochloride was administered according to the body weight: (subarachnoid) 0.25–1.5 mg in 0.25–1.5 ml of normal saline; (extradural) 1–5 mg in 2–7 ml of normal saline. Following treatment, the patients were placed in an intensive care unit for about 48 h. They were allowed fluids.

Severe itching was noticed in the great majority of the patients, and nausea and vomiting in 65. Sedation was marked in 68 patients. Six children developed respiratory depression, 5 h after morphine injection. Of these, two had the lungs mechanically ventilated and the rest required large doses of pimeclom (a central nervous system stimulant). Naloxone was deliberately omitted.

Interesting results were noted regarding the act of micturition: Urinary retention for about 12–36 h in 24 patients.

Improvement in the sensation to pass urine, and a decrease in the micturitions per day, in all reliable children.

Twelve patients showed no improvement. Twenty patients completely stopped bedwetting. Fifty-three continued to wet the bed, but more rarely. Forty of these had periods of 1 week to 2 months when they did not wet the bed.

The reversal of urinary retention after subarachnoid morphine and recent experimental (cats) investigations (Jubelin et al., 1984) suggest a role for endogenous opiates in micturition. Our results are clinical evidence of such a role. All side-effects noted in this study are in accordance with the known rostral migration of morphine (Bromage et al., 1982). The high incidence of respiratory depression is surely the result of the large doses of morphine injected. The two levels were used to penetrate as many nervous structures as possible. That is why large quantities of pimeclom were necessary to antagonize the respiratory depression.

Many patients showed no improvement, as urinary retention was not present in all cases. Urinary retention as a side effect of subarachnoid morphine rarely exceeds 24 h. However, the partial and the good results obtained in this study were long in duration—in some patients for 15 months.

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**REFERENCES**


**AIR BREAK RECEIVER UNITS**

**Sir,**—The three articles on this subject (*Br. J. Anaesth.*, 55: 661, 671, 681) provide details of the performance of some cumbersome devices to scavenge anaesthetic gases. Unfortunately, the inconvenience and expense of these devices militate strongly against their acceptance, and are largely responsible for the deplorable British record for the use of scavenging systems.

Since none of the three articles makes any reference to the Northwick Park Hospital system (*Br. Med. J.* (1976), 2, 1219) we feel that your readers should be reminded of the existence of this simple and effective system, which has been in continuous use...
hose. A plastic miniature air break (fig. 1) with a proximal reservoir bag, when required, is attached to any anaesthetic circuit gas release point and extraction is through the theatre suction line or any other system giving the required 40-litre min$^{-1}$ air flow. The air break prevents any possibility of a strong negative pressure being communicated to the patient and limits the positive pressure, if suction should be inadvertently interrupted, to a few centimetres of water.

This system has been shown to decrease contamination below the very rigorous limit set by the American NIOSH (Anesthesiology (1980), 35, 554). It is extremely simple to use and, since no engineering works are required, the cost for a major hospital is only of the order of £500, if the central theatre suction is used. Dour warnings about the effect on the pumps of the central vacuum system have proved to be totally unfounded, and our, and many other hospitals have ample spare capacity (Br. Med. J. (1978), 1, 918). We believe that the trend for more cumbersome and expensive systems, and for new regulations which are even less likely to be applied in practice is totally unrealistic, misdirected and, in these times of financial stringency, inappropriate. We would like to suggest that potential users should consider this well-tried, inexpensive and highly convenient system.

H. T. DAVENPORT
J. F. NUNN
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London

Sir,—We appreciate the comments of our colleagues at the Northwick Park Hospital on our and other Air Break Receiver Units, but cannot accept their view that these are in general over-designed.

It is important that, in protecting the staff from the somewhat unquantified hazards of pollution by waste anaesthetic gases, we do not cause a fresh hazard for the patient. To this end, stringent standards have been laid down by the Department of Health and Social Security (DHSS) for safety and performance of air break units (Department of Health and Social Security, 1980). We believe these standards are reasonable and must be respected by equipment designers and that, in particular, attention must be paid to possible malfunctions introduced by the rigours of the working environment. Our experience has shown that many simple units do not perform safely when tested in this way. Paper or plastic film can be drawn into the relief ports of air break units not provided with a cover having vents of large area. We feel that a test simulating these conditions should be applied to all systems, since a fault of this nature applies a negative pressure of many kilopascals to the patient.

The Northwick Park Unit, a sample of which was kindly supplied by Dr Martin Wright, when tested, achieved the performance claimed by its designers at the recommended scavenge rate of 40 litre min$^{-1}$. The scavenge flow in the unit is, however, not regulated and depends on the mode of connection to the vacuum line and can reach 60 litre min$^{-1}$ via a Medishield Vacuum Controller or 75 litre min$^{-1}$ when connected directly to a suction point by 4.5 m of 8-mm hose. At these high flow rates, negative pressures which could be applied to the patient reached —350 Pa (seven times the DHSS limit of —50 Pa$^{-1}$). When plastic film was brought in contact with the relief holes of the unit at flow rates greater than 40 litre min$^{-1}$, the film was held in place by the suction and drawn down onto the relief holes. The result of negative pressure applied to the APL valve depended on chance bedding down of the sheet and varied from $-4$ kPa to $-20$ kPa in a series of tests. Although the chance of such a fault occurring is
the myocardium. I would agree with Dr Sethna and depicted, both as regards "cannon" waves and the secondary considerable detail in two chapters in Prys-Roberts (1980). Both and classified in relation to anaesthesia. Most of the comments (1984) would seem to imply that these observations on the three forms of junctional rhythm have not been previously described that time. The haemodynamic consequences of the transient mechanisms responsible for the development of junctional rhythms have not been previously described forms of junctional rhythm have not been previously described an additional large flow rate demanded by a scavenging system is to be provided by the hospital vacuum system, the plant must be uprated to take account of the higher flow rates. Whether the extra flow capacity is provided for the development of junctional by installing a dedicated scavenging system, expense is incurred. It seems reasonable, therefore, to provide a dedicated disposal reason of safety block. When used in this way, the Northwick Park device becomes a machine-mounted system and surrenders its claims to cheapness and simplicity without reaching the very high levels of safety and silence embodied in the Barnsley Receiver.

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OBSERVATIONS ON "JUNCTIONAL RHYTHMS" DURING ANAESTHESIA

Sir,—The correspondence from Sethna, Deboer and Millar (1984) would seem to imply that these observations on the three forms of junctional rhythm have not been previously described and classified in relation to anaesthesia. Most of the comments that they have made on isorhythmic dissociation are covered in considerable detail in two chapters in Prys-Roberts (1980). Both Smith (1980) and I discussed at length the nature and mechanisms responsible for the development of junctional rhythm, and included a critical review of the existing literature at that time. The haemodynamic consequences of the transient changes from sinus rhythm to isorhythmic dissociation are well depicted, both as regards "cannon" waves and the secondary effect on myocardial perfusion. I would agree with Dr Sethna and his colleagues that true wandering pacemaker or AV nodal rhythm with inverted P waves are very uncommon during anaesthesia, while isorhythmic dissociation is an everyday event.

C. PRYS-ROBERTS
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REFERENCES


TACTILE OROTRACHEAL INTUBATION

Sir,—We read with the greatest interest Dr Tunstall’s report (Tunstall and Geddes, 1984). We would like to draw attention to another method that could be a valuable alternative in such a case: the tactile orotracheal intubation. This very old and often forgotten technique (MacEwen, 1880) has been recently refined (Stewart, 1984) and has the major advantage of not requiring any movement of the head and neck and, especially, not needing any sophisticated apparatus. This would be particularly important when difficulties occur on “the firing line”.

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REFERENCES


Sir,—With regard to bringing tactile orotracheal intubation to the attention of your readers, it may stimulate people to try it and report back on it. The writers of the letter do not indicate whether they themselves have tried it on a 116-kg mother with large breasts, receiving cricoid pressure, with a possible full stomach, fetal distress etc.

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HYPOXIC VENTILATORY DRIVE IN THE DOG UNDER ALTHESIN ANAESTHESIA

Sir,—I was concerned to read the paper by Dr Gaudy and his colleagues (1984) entitled "Hypoxic ventilatory drive in the dog under Althesin anaesthesia". The steroid combination of alphaxalone and alphadolone is solubilized in saline by Cremophor EL. The preparation has the trade names “Althesin” (Glaxo) and, for veterinary use, “Saffan” (Glaxovet). In veterinary anaesthesia, the preparation is licensed for use only in cats and monkeys. The data sheet states specifically “Saffan is contraindicated in dogs because the solubilising agent causes the release

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