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Br. J. Anaesth., 39, 815.

Sir,—We welcome an opportunity to respond to the important
issues raised in the letter of Drs Van DerSpek 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 in vitro MH 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
recipient. We are delighted that Drs Van DerSpek 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
P. JANE HALSALL
Leeds

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 pimecrole
(a central nervous system stimulant). Naloxone was deliberately omit-
ted.

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 adverse side effects noted in this study are in accordance with the known rostral migration
of morphine (Bromage et al., 1982). The high incidence of respira-
tory 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 pimecrole
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 par-
tial and the good results obtained in this study were long in dura-
tion,—in some patients for 15 months.

E. CARDAN
Cluj-Napoca, Romania

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62, 641.

AIR BREAK RECEIVER UNITS

Sir,—The three articles on this subject (Br. J. Anaesth., 1983,
55: 661, 671, 681) provide details of the performance of some
devices to scavenge anaesthetic gases. Unfortunately, the
inconvenience and expense of these devices motivate 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
CORRESPONDENCE

FIG. 1. Northwick Park Hospital air break, in use. Note the ring of six recessed holes which limited the negative pressure to 1 cm H$_2$O at 40 litre min$^{-1}$ suction. The relatively large size of the device compared with the suction pipe is necessary because of the British Standards specification for a 30-mm fitting.

here for 9 years. 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 (Anaesthesia (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. Dire 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
B. M. WRIGHT
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 overdesigned.

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.). 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...