PREOPERATIVE DRINKING AND GASTRIC CONTENTS

SIR,—We share Professor Strunin’s puzzlement [1] that there is an implication of something revolutionary in the paper of Drs Phillips, Hutchinson and Davidson [2] on preoperative fasting. In July of 1991, we published a paper [3] which investigated virtually the same regime and drew exactly the same conclusion. Of particular note is the similarity of the confidence intervals of the difference in the residual gastric volumes of the two groups in each paper. This was present despite smaller sized study groups.

Among the minor differences between this new study and ours are the following: we allowed only water whereas they allowed “clear fluids”; they used a double-lumen tube to empty the stomach: we used a single-lumen tube and rolled the patient during aspiration; all our patients were premedicated with temazepam; the mean gastric pH of both our groups were less than 2.5 (in both studies the confidence intervals of differences in gastric pH were wide).

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SIR,—Thank you for the opportunity to reply to Dr Russell’s comments. We did not advocate the use of continuous subarachnoid infusions of local anaesthetic for analgesia instead of extradurals, but merely reported our findings when using a technique which had not been used before during labour.

The implication that the instrumental delivery rate in our group of primiparæ (40%) receiving regional analgesia during labour is exceptionally high is unfounded. Others have reported rates greater than 40% [1–3]. Kaminski, Stafl and Aiman compared a group of primiparæ receiving extradural analgesia with a control group. The frequency of instrumental delivery was 52% in the extradural group, compared with 23% in the controls [4]. The rotational forceps rate of 15% in our study is similarly unexceptional, as other groups have reported midcavity forceps delivery rates of 12% in primiparæ receiving extradural analgesia [4]. This suggests that pelvic muscle relaxation during intrathecal infusions did not lead to malrotation of the fetal presenting part.

All new techniques are associated with a learning curve. The aetiology of long-term backache after labour is not yet known, and as yet there are no prospective studies linking the degree of motor block to the incidence of long-term backache [5]. Our assessment of motor block was indeed on a four-point scale as described by Bromage [6]. Full flexion of both knees and feet implied absence of motor block; that the mother was just able to move her knees indicated partial motor block; no knee movement but still foot movement implied almost complete block; inability of the mother to move either feet or knees indicated complete motor block.

Only four women required extension of the subarachnoid block for Caesarean section. Although one block took 13 min to reach T4, the other blocks were established in 5, 6 and 10 min. Whereas the appropriate drug and volume for an extradural top-up are known, we were naturally cautious when we administered bupivacaine into the subarachnoid space. As experience with this technique increases it will become more refined and, similarly, as different infusion rates are used throughout labour the number of top-ups required to maintain analgesia will decrease.

New techniques are associated with a learning curve. The advantages of a rapid onset of good analgesia, with the potential for manipulation of the solution injected and ease of extension of the block in the case of an operative or instrumental delivery, suggest that there may be a place for subarachnoid infusions during labour. However, further use of the technique will be limited until results of cauda equina syndrome in America. These have led to the Food and Drug Administration recalling all licences for intrathecal use of microcatheters. In these cases the drugs involved were 5% lignocaine with 7.5% glucose (three cases) and 1% amethocaine with 10% glucose (one case). The aetiology of the neural damage has been postulated to result from a combination of maldistribution and a relatively large dose of local anaesthetic around the nerve roots [7].

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addition to a diluent and "lining" effect of copious tracheobronchial secretions, might have made aspiration a survivable insult. The contemporary practice of i.v. agent and suxamethonium in rapid sequence does not afford the lungs this potential protection.

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Sir,—I agree with Professor Strunin [1] that it is time for new guidelines on preoperative starvation. I wish to raise one issue and make one comment.

First, in the United States several children are admitted just before surgery and may have been hungry or been light, chewing bubble gum! There are several approaches amongst anaesthesia staff; some ignore the chewing of gum and accept the children as starved; others take the view that chewing gum increases gastric secretion via conditioned and unconditioned reflexes, such as sight, smell and taste, leading to increased gastric volume, at low pH, which requires a 6-h postponement [2]; yet others believe that chewing gum is equivalent to a clear liquid challenge and should be cleared from the stomach within a 3-h postponement; a fourth group argue that the child who drank recent clear fluids will have diluted his gastric contents and will thus be at less risk than the child who has only chewed gum. This last group would recommend offering a clear liquid drink and postponing for 3 h. Until recently, I followed the first option, but I am now considering adopting the last approach. A small postponement would be less disruptive to the theatre list, but may also discourage the child from chewing gum before any subsequent surgery.

Second, in healthy patients presenting for elective surgery it is perfectly acceptable to allow a 6-h starvation period for solid foods and 3 h for clear liquids. However, despite this apparent simplicity, I have still found patient, nurse and surgical confusion in trying to implement such instructions. The "double time limits" adds to errors, and to the number of rules broken. There have also been several episodes of misunderstandings associated with the term "clear" liquid. Patients have interpreted this to mean "pure", and have allowed themselves assortments of pureed fruit, such as apple. This concept must be made clear to patients or perhaps, as a compromise, patients might only be allowed to drink once in hospital and under nursing vigilance.

If in doubt, a conservative approach is the safest.

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Sir,—Drs Read and Vaughan gently chide me for having missed their paper [1] in my editorial [2]. It is, however, nice to see that their results regarding preoperative fasting in Wales are similar to those observed in England and North America. This statement should not be construed as facetious or unkind. Among the many objections that the Medical Ethics sub-Committee of the University of Calgary raised to the procedures of the Canadian studies refereed in my editorial [2] was their belief that results obtained in other countries relating to gastric emptying [3] could not be assumed to be the same as may be obtained in Canada. Studies such as those of Read and Vaughan have proved the Ethics

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Committee wrong. One criticism that can be levelled at Drs Read and Vaughan is that, having shown that allowing preoperative patients unlimited oral water until 2 h before anaesthesia was not hazardous, they made no recommendations with regard to changing current practice. Others have taken this step and have drawn up guidelines with regard to what is meant by "clear fluids" [4–6] and have not found that patients have difficulties in distinguishing between solids and liquids. It seems that water, carbonated drinks, non-particular fruit juices and modest quantities of milk or sugar in tea or coffee are all acceptable within the definition of "clear fluids".

The description of ether anaesthesia by Drs Levy and Tunstall may be relevant in relationship to Mendelson's observation [7] that none of his patients died after fluid aspiration. However, ether anaesthesia need not be quite so unpleasant and yet may be safe for obstetrics even by open drop [8]. I still hold the view [graphically described in the Report on Confidential Enquiries Into Maternal Deaths in England and Wales, 1976–1978, pp. 80–81] that, although pulmonary aspiration of gastric contents may be the starting point for a potential maternal death, it is other factors such as repeated attempts at tracheal intubation accompanied by intermittent positive pressure ventilation without a secure airway and the resultant hypoxia, inadequate equipment and inexperienced personnel that combine to make death a certainty.

With regard to children, or adults for that matter, chewing gum, I know of no study which equates this with eating and therefore these patients may be managed in the same way as any other starved individual. However, as the letter [9] by Kradel, Hackett and Johnstone describes suctioning gum from the stomach after tracheal intubation, there may be some hazard if patients are anaesthetized still chewing their gum. Therefore, bearing in mind the old Lonnie Donegan song "Does your chewing gum lose its flavour on the bedpost over-night?", perhaps the preoperative check list should include making sure that patients have deposited their gum in an environmentally friendly place before induction of anaesthesia.

L. STRUNIN
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Sir,—Thank you for the opportunity to respond to Drs Read and Vaughan. As they (and the Editorial accompanying our article) have pointed out, there is nothing revolutionary about suggesting that the period of fluid fasting before surgery should be reduced. What is surprising is that the majority of anaesthetists still expect and teach that a 4-6 h fast is necessary before elective surgery. In practice, this period is often much longer; in our study the mean fasting time exceeded 12 h [1]. Indeed, the increasing body of research into this subject continues to find that the current guidelines are excessive [2–4].