ARRHYTHMIAS DURING LAPAROSCOPY

Sir,—I was interested to read the study by Burns and colleagues [1] on the effects of nadolol on arrhythmias during laparoscopy performed under general anaesthesia. However, I am disturbed by some of the statements made by the authors. In the introduction they mention as a cause of arrhythmias increased vagal tone, secondary to peritoneal manipulation, which may lead to severe bradycardia, asystole, or both [2]. Other authors have reported such occurrences [3–6]. At our institution in the past year there have been at least five patients who developed severe bradycardia during laparoscopy. Beta-blockade may increase the incidence of such life-threatening arrhythmias, and may inhibit treatment. Indeed, in the study of Burns and colleagues, the dose of nadolol was decreased to 20 mg, following four cases of profound bradycardia. Carmichael [3] suggested the administration of atropine 0.4–0.6 mg before insufflation of carbon dioxide, to minimize the risk of bradycardia.

The liberal definitions of sinus bradycardia as less than 60 beat min⁻¹, and sinus tachycardia as greater than 100 beat min⁻¹, obscured clinically useful information. It would be more interesting to know the number of patients with a sinus rate of less than (say) 50 beat min⁻¹, or more than 120 beat min⁻¹. It was significant to learn that four of the nadolol-treated group had profound bradycardia requiring treatment with atropine. The only patients in the trial who required intervention were the nadolol-treated group, perhaps itself illustrating clinical significance.

I feel the above discrepancies preclude a recommendation of nadolol to reduce the incidence of arrhythmias during laparoscopy.

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REFERENCES


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Sir,—Thank you for allowing us to reply to Dr Myles’ letter. His group have had five patients with profound bradycardia who required therapy during this type of surgery. We feel that this incidence is high, and may reflect the method of anaesthesia which is used within his institute. Bradycardia may be the result of using a routine policy of artificial ventilation, and the newer neuromuscular blocking agents. We cannot compare our results with his, as we are unaware of the anaesthetic techniques which he used. We feel that the high incidence of arrhythmias noted in our study reflects the effect of halothane anaesthesia. Enflurane may be less arrhythmogenic, and at present we are conducting a study to compare the two agents during laparoscopy.

Dr Myles states that the administration of beta-blocking compounds in this setting may increase the incidence of life-threatening bradycardia. We have demonstrated that this is not necessarily the case, for example during dental anaesthesia, where the incidence of bradycardia was significantly reduced following pretreatment with metoprolol [1].

In our present study, four patients were stated to have profound bradycardia—they were pretreated with nadolol 40 mg. None was symptomatic, the procedure was uncomplicated following intraoperative administration of atropine, and there were no sequelae. This point perhaps is not expressed adequately in our paper, and we apologize for this oversight. We agree that the use of atropine for premedication would be a reasonable course of action. In a study to examine the incidence and modification of arrhythmias by therapy, pretreatment with atropine may obscure the true incidence of both sinus bradycardia and sinus tachycardia, hence its avoidance in our study.

In terms of the definition of arrhythmia, any study must have predetermined limits of heart rate, and we believe that those used in the present study are reasonable. It is difficult to see how our range obscures clinically useful information. We have clarified that four patients received atropine, but the bradycardia was unimportant clinically, and had no sequelae.

We feel that the observations, results and conclusions made under the conditions of this study are appropriate. It is up to each individual anaesthetist to decide whether or not to consider the use of beta-blockers routinely, or to limit their use to patients who may benefit from such premedication.

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