Methoxamine and blood loss in prostatic surgery

Sir,—I wish to comment on the significance of the findings of Dr Chambers and colleagues [1] in investigating the effects of methoxamine on blood loss during transurethral prostatic resection.

A brief review of their references and a further literature search succeeded in finding only one paper where postoperative blood loss was considered. Clarke and colleagues, in studying patients receiving total hip arthroplasty, found that only 55% of measured blood loss occurred in theatre; the rest of the blood loss occurred in the postoperative period [2].

As all patients who undergo transurethral prostatic resection in this district undergo bladder irrigation overnight, one can only assume a similar picture in this group of patients, and therefore perhaps continuing the study into the postoperative period may have added to the relevance of the findings.

Also, if indeed glycine was maintained at a height of 500 cm H$_2$O above the patient, then the operating theatres must have impressively high ceilings!

M. ALEXANDER-WILLIAMS
Department of Anaesthesia
Leicester Royal Infirmary
Leicester


Sir,—I agree that postoperative blood loss could be calculated in a similar fashion and add to the relevance of our findings. However, I feel that it would not be accurate to assume comparisons between patients undergoing total hip arthroplasty and transurethral prostatic resections. The height of the glycine should have read 200 cm H$_2$O instead of 500 cm H$_2$O, as you correctly observed.

F. A. CHAMBERS
Department of Anaesthesia
University of California
San Francisco
CA, USA

Sir,—I was interested to read of the use of methoxamine to reduce prostatic volume and hence vascular capacitance in patients undergoing transurethral resection of the prostate under spinal anaesthesia in an effort to reduce blood loss [1].

The effect of methoxamine, given as an a agonist to reverse hypotension, lasts 60-90 min [2] and the effect on the prostate could be expected to be the same. As the effects of methoxamine decline, then previously uncoagulated vessels would dilate, exacerbating blood loss at a time when the patient is either in the recovery room or back on the surgical ward with less haemodynamic monitoring in progress.

It would have been interesting to compare the admission and discharge haemoglobin concentrations in patients undergoing transurethral resection of the prostate under spinal anaesthesia in an effort to reduce blood loss [1].

H. HOWELLS
Nuffield Department of Anaesthetics
John Radcliffe Hospital
Headington, Oxford


Sir,—I agree with Dr Howells that the effect of methoxamine could be expected to last approximately 90 min, but its effect is not directly on the prostatic blood vessels, as he suggests, but on a receptors in the prostatic adenoma and capsule causing an in vivo contractile response [1]. As most of the prostatic adenoma was resected during surgery, it is unlikely that the remaining blood vessels would dilate after the effects of methoxamine had declined. A comparison of admission and discharge haemoglobin concentrations would be difficult to interpret as changes in haemoglobin concentration could occur because of haemodilution and could not be attributed to blood loss alone. I agree that total perioperative blood loss could be calculated in a similar fashion, and would have provided us with additional information.

F. A. CHAMBERS
Department of Anaesthesia
University of California
San Francisco
CA, USA


Posture and autonomic cardiac control

Sir,—In a recent issue of the journal [1], McHugh, Robinson and Galletly reported on the effect of the Trendelenburg position and leg elevation on autonomic control of sinus node function. They used three different body postures in healthy volunteers: the supine position, head-down tilt position (−10°) and supine position with 50 cm leg elevation from the hip. In these settings they failed to find any significant alterations in the time and frequency domain indices of heart rate variability.

We studied the effect of postural changes on cardiac vagal control in healthy subjects in the supine position with head-up (70°) and head-down (−30°) tilts. We found that postural changes from supine to head-up tilt and from head-up tilt to head-down tilt positions resulted in changes in cardinal autonomic tone.

The postural changes from the supine to the head-up tilt position caused a significant reduction in parasympathetic indices of the time and frequency domain measures of short-term heart rate variability (i.e. mean normal RR interval, percent of consecutive normal RR interval differences > 50 ms, root mean square successive difference, high frequency power), and an increase in the low frequency/high frequency ratio, indicating a shift towards sympathetic tone, was also seen. Similar results were reported elsewhere [2, 3]. These observations could be explained by the decreasing load on the arterial baroreceptors. This hypothesis was substantiated further by our findings that in the head-down tilt position, parasympathetic tone increased and sympathetic tone decreased, as reflected in the variables mentioned above.

The differences between our findings and those of McHugh, Robinson and Galletly are probably related to different designs.

In the −10° head-down tilt position there is presumably very little change in the loading conditions of the arterial baroreceptors. The low pressure receptors might have been triggered; however, in the absence of arterial and/or intracardial pressure recordings, no data were available on the real extent of the baroreceptor challenge. The same holds for the leg elevation manoeuvre.

We feel that further studies with continuous pressure recordings are warranted to clarify the issue.

A. KARDOS
L. RUDAS
J. SIMON
Second Department of Medicine
Albert Szent-Györgyi Medical University
Szeged, Hungary

