ACIDOSIS FOLLOWING THORACIC SURGERY

Sir,—Dr Pandit and his colleagues suggest that patients develop a mixed respiratory and metabolic acidosis following a thoracotomy (Brit. J. Anaesth., 1973, 45, 79). However, the results they present do not necessarily support this conclusion. The investigation would have been more convincing if measurements had been made at each stage in all the patients. Incidentally, there are some discrepancies between the figures; for example, for the preinduction phase there are 20 values for pH and base excess but only 18 for the carbon dioxide tension. We are not certain which patients were given sodium bicarbonate, for whilst figure 3 divides the base excess values for the 60-min stage into those who did and those who did not receive bicarbonate, figures 1 and 2 show no such classification for the pH and Pco₂ values.

It is well known that indices of a metabolic acidosis such as base excess will show an apparent metabolic acidosis as the carbon dioxide tension of a patient is increased (e.g., Holaday, Ma, and Papper, 1957; Stoker et al., 1972). The mean values for the pH and Pco₂ for the "pre-reversal" and the "15-min postoperative" stages presented by Dr Pandit would fit such an in vivo carbon dioxide titration curve. Thus there appears to be no need to invoke an additional metabolic acidosis.

Whilst in individual patients sodium bicarbonate may be of therapeutic benefit following a thoracotomy we do not feel that its routine administration is supported by the results given in this paper.

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REFERENCES


Sir,—Dr Norman and his colleagues are quite correct in pointing out that there are discrepancies in the number of dots displayed in the scattergrams contained in our recent paper. We admit that we did not count these meticulously after the design was drawn; however, we would assure them that the mean values obtained were checked and are valid.

Perhaps we did not make it clear that this finding was a side issue to two more detailed studies involving other aspects of controlled ventilation: (1) the comparison of three relaxants by Pandit, Dundee and Stevenson (1971), and (2) the M.D. thesis of Galway entitled, "A clinical investigation of postoperative pain". For this reason each author was not working together now and this may take some time.

It should be pointed out that nowhere in our paper do we advise routine bicarbonate therapy after operation. On the contrary we have shown (fig. 3) that the metabolic element of the acidosis is likely to revert back to normal within 60 min after operation, with or without bicarbonate therapy. In contrast, we have not up to date any evidence of elective ventilation of certain categories of patients and our view is supported by the work of Stoker and his colleagues in our discussion of the above point one must not lose sight of the object of the paper. One of the main findings of our study was the differing response after thoracic and upper abdominal surgery and also the effects of even small doses of parenteral narcotics.

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