Sir,—Dr Mehta (Brit. J. Anaesth. (1972) 44, 601) showed that fluid can accumulate in the trachea and larynx above the tracheal tube cuff and can find its way into the lungs at the end of the operation when the cuff is deflated, prior to extubation. He also found that two methods were effective in eliminating this risk: (1) placement of the proximal end of the cuff just beyond the true vocal cords and (2) tilting of the operating table 10 degrees head-down. Such findings certainly have important clinical implications in the prevention of aspiration of regurgitated material when the cuff is deflated.

However, the presence of the cuff just beyond the true vocal cords cannot be relied upon since any movement of the tube will result in displacement of the tracheal cuff. Furthermore, it has been suggested by Hahn, Martin and Lillie (1970) that pressure could be exerted within the larynx by a tracheal cuff placed just below the cords and could compress the nerve endings at that side against the thyroid cartilage, resulting in unilateral vocal cord paralysis. This complication could perhaps be prevented by proper positioning and fixation of the tube.

There are two additional safety measures that need to be mentioned. First, is the application of positive airway pressure after suctioning of the pharynx and deflation of the cuff. This will tend to bring up any material that had accumulated above the cuff to the pharynx and render it accessible to suctioning. Second, is performing extubation while maintaining positive airway pressure of about 20 cm H₂O. This manoeuvre, by inducing reflex coughing upon removal of the tube, helps prevent inhalation of material already present in the pharynx and larynx.

M. RAMEZ SALEM
Chicago

Sir,—I am grateful to Dr Salem and yourself for the opportunity of a prompt reply. Taking in order the points made by Dr Salem, I would offer the following comments.

After positioning the cuff just below the true vocal cords by withdrawal of the tube after cuff inflation it can be retained in place by fixation of the tube either by adhesive tape or by ordinary tape around the neck. This procedure will prevent any displacement of the tracheal cuff.

Hahn, Martin and Lillie (1970) have reported five cases of unilateral vocal cord paralysis following intubation with a cuffed endotracheal tube. They related this complication to the defective cuff permitting irregular inflation leading to compression of the recurrent laryngeal nerve endings at that side against the thyroid cartilage resulting in vocal cord paralysis. I have by now anaesthetized over 700 patients in whom the tracheal tube cuff has been placed in the larynx just below the true vocal cords and have so far not come across this complication.

I agree with Dr Salem that the application of positive airway pressure after deflation of the cuff is yet another method to prevent aspiration of material that has accumulated above the cuff. In theory this seems a sound method but its effectiveness in practice has yet to be proved. As a matter of fact I am already investigating the usefulness of this procedure and hope to publish the results in the near future. However, I feel that it is better not to let any material accumulate above the cuff, in the first place, rather than prevent its aspiration after letting it collect in the trachea.

S. MEHTA
Burnley

REFERENCE

MIDLAND SOCIETY OF ANAESTHETISTS

Programme for 1972/73

1972
November 21 (Tuesday) at the Postgraduate Medical Centre, East Birmingham Hospital. Dr S. A. Feldman, "The Rational use of Relaxants."

1973
February 15 (Thursday) at the Walsgrave Hospital, Coventry. Registrars' Papers.
March 1 (Thursday) at the North Staffordshire Medical Institute, Stoke-on-Trent. Professor J. Parkhouse, "Trichlorethylene".
March 20 (Tuesday) at the South Staffordshire Medical Centre, Wolverhampton. Debate concerning Committees for investigating deaths under anaesthesia.
June 9 (Saturday) All-day meeting and Biennial General Meeting at Shrewsbury. Detailed arrangements will be circulated nearer the date.

Ordinary meetings will start at 8 p.m. and there will be a buffet beforehand from 6.30 p.m.