BRONCHOSPASM DURING ANAESTHESIA

Sir,—Bronchospasm occurring during anaesthesia is not common, and the aetiological factors are well known; a further cause, as illustrated by the following case report, is recorded here.

Case Report.

A 54-year-old male was admitted to hospital for prostatectomy the following morning. He had presented in hospital with symptoms of prostatitis, six months before and had undergone a full urological investigation though no organisms were isolated or cultured at any stage. His initial response to conservative treatment, including prostatic massage, had been satisfactory; but his symptoms returned despite further treatment, and he was therefore scheduled for prostatectomy.

Pre-operative history was entirely negative. No history of respiratory disease or allergy was elicited. Physical examination of all relevant systems was normal.

Premedication consisting of pethidine 75 mg and atropine 0.6 mg was administered one hour pre-operatively by intramuscular injection. Induction was by intravenous thiopentone 250 mg and alcuronium (Alloferin) 12.5 mg, followed by intubation using a 9.5 mm cuffed or-tracheal tube.

Maintenance was by IPPV using a Radcliffe ventilator with carbon dioxide absorption in a semi-closed circuit, the fresh gas mixture consisting of nitrous oxide 70 per cent, oxygen 30 per cent with halothane 0.5 per cent. An intravenous infusion of lactate Ringers Solution was commenced a few minutes after induction.

Nothing untoward occurred until 35 minutes after induction when it was noted that the bellow of the ventilator was not emptying. At the same time the tidal volume, which was being monitored intermittently on the built-in Wright anemometer, was diminishing. Auscultation of the chest revealed diminished breath sounds with expiratory wheezing and a few inspiratory rhonchi. The endotracheal tube, its cuff, the ventilator and anaesthetic circuit tubing was checked, but no fault was found. In order to ensure that the observed signs were not due to the diminishing effects of the relaxant a further dose of alcuronium 3 mg was administered but produced no improvement, and a diagnosis of bronchospasm was made. This responded gradually to slow intravenous injection of aminophylline (total 350 mg) and hydrocortisone 100 mg. An hour later, following cautious reversal of the neuromuscular block with atropine 1.2 mg and neostigmine 3.5 mg the patient was extubated. He returned to the ward with all reflexes intact, and in a satisfactory condition.

Comment

Bronchospasm under anaesthesia means different things to different people (Hunter, 1968). Truly allergic bronchospasm is rarely encountered during anaesthesia (Mark, 1967). The signs can also be produced by vigorous expiratory contractions of the flat abdominal muscles, often as a reaction to a local irritant in the air passages such as an endotracheal tube, irritant anaesthetic agents or aspirated foreign material. This is very much like a cough and can be corrected by deepening anaesthesia or by the administration of a relaxant drug. In the case reported above, no immediate cause was apparent. No drugs had been administered during the preceding half-hour, and there was no history of allergy. However on interviewing the patient's wife after the operation, the following history, subsequently confirmed by the patient, was elicited. In 1957 he had been advised to change his employment with the Wheat Control Board, as his doctor had warned him that he would "become an asthmatic." He had no further respiratory difficulty, but had noted that after each prostatic massage his chest had "become tight," and for this he obtained tablets from his pharmacist.

It is known that prostatic infection may act as a primary focus for metastatic infection, and that such infection may flare up when the prostate is massaged (Campbell and Harrison, 1970). This is thought to be due to the release into the system of specific toxins to which the patient has become sensitive (bacterial allergy). No organisms were isolated from the present case, but Campbell and Harrison (1970) state that it is difficult to find specific organisms in the prostatic secretion, and when they are found, the relative frequency is as follows: Staphylococci 60 per cent, Streptococci 30 per cent, and bacilli and others 10 per cent. The gonococcus is rarely isolated.

It is therefore suggested that, since bronchospasm in this case occurred at a time when the gland was being surgically manipulated, and in view of the history obtained subsequently, the bronchospasm was caused by the release from the gland of a substance to which the patient had been sensitized during previous prostatic massages.

E. C. BLOCH
Port Elizabeth, South Africa

REFERENCES


THE EFFECT OF HYPERVENTILATION ON THE SIZE AND SHAPE OF ALVEOLI

Sir,—The following acknowledgements were omitted from the recent article, Forrest, J. B. (1970), Brit. J. Anaesth., 42, 810:

"This work was performed in the Institute of Physiology of the University of Glasgow. I am grateful to Dr Sheila Jennett for her considerable guidance and advice and to Professor R. C. Garry and Professor I. A. Boyd for having had the opportunity of working in their department."

J. B. FORREST
Glasgow