CORRESPONDENCE

ANAESTHESIA FOR ADENOTONSILLECTOMY

Sir,—I would like to offer my congratulations to Dr. Andrew Doughty for his excellent paper entitled "Anaesthesia for Adenotonsillectomy" (Brit. J. Anaesth. (1957), 29, 407). As Dr. Doughty so rightly points out, the child should be entitled to receive the maximum benefits from the improvements in anaesthetic techniques which have taken place during recent years.

I cannot, however, agree with Dr. Doughty's outright condemnation of the oral route of premedication, although I decided some time ago that quinalbarbitone was a too long acting drug to use for the purpose. Having made this decision I began to investigate the use of methylpentynol as a premedicant for children undergoing adenotonsillectomy and have recently completed a series of 500 cases. I did not use the papaveretum and scopolamine combination as advocated by Dr. Doughty because, although I agree that children tolerate this combination well in the correct dosage, some depression of the respiratory centres and cough reflexes must result from the use of these drugs, and such depression I consider undesirable in children undergoing operations upon the nose and throat.

The method of premedication I used in my series was as follows: The child was given methylpentynol (Oblivon Elixir) 1 1/2 hours before operation and atropine sulphate subcutaneously 1/2 hour before operation. It is important that an oral premedicant is given well before the dose of atropine or scopolamine being used, otherwise absorption from the stomach will be delayed.

Children weighing from 21 to 35 lb received two teaspoonfuls of the elixir (500 mg of methylpentynol). Children weighing from 36 to 55 lb received three teaspoonfuls of the elixir (750 mg methylpentynol), and children weighing over 55 lb received four teaspoonfuls of the elixir (1000 mg methylpentynol). This corresponds very roughly to a dose of 18 mg per pound body weight.

At the beginning of the series all children were anaesthetized by the "standard method"; i.e. ethyl chloride and open ether or nitrous oxide induction followed by nitrous oxide, oxygen and ether insufflated down the side tube of a Boyle-Davis gag. It was then decided to investigate the intravenous technique, using thiopentone for induction followed by suxamethonium chloride, intubation, and maintenance with nitrous oxide, oxygen and minimal ether. At first this technique was used only for the older children and then, as the results proved very satisfactory, it was gradually adopted for the younger children as well.

The series of 500 cases premedicated with methylpentynol and atropine is therefore composed of 325 patients anaesthetized by the ether insufflation technique and 175 patients anaesthetized by the intravenous technique.

Twelve patients of the series arrived in the anaesthetic room asleep and anaesthesia was induced smoothly without the patient awakening. Four hundred and thirty-four patients arrived awake and in an apparently peaceful frame of mind and were quiet and co-operative during the induction, whichever method was used. The remaining 54 patients arrived in an apprehensive state of mind but 39 of these could be reassured; this was a notable feature following methylpentynol, and induction was carried out smoothly. Fifteen patients out of the 500 remained nervous and unco-operative and the effects of the methylpentynol were not considered satisfactory; only 2 of these, however, were being induced by the intravenous route.

Only 2 patients in the series vomited during induction and both these were thought to have done some illicit drinking pre-operatively. Five others made attempts to vomit but this was considered to be due to ether rather than methylpentynol. No patient who was induced with thiopentone vomited or regurgitated stomach contents during induction.

None of the patients gave cause for anxiety during operation, but 5 patients showed some
degree of laryngeal spasm immediately post-operatively 3 of these being induced by inhalation and 2 intravenously and intubated. All responded to pharyngeal toilet and posture.

Thirty-five patients were unduly restless post-operatively and it is interesting to note than 28 of these were from the 175 intravenous cases and only 7 from the 325 inhalation cases. The longest case of restlessness lasted 30 minutes.

All cases were examined personally post-operatively and apart from the 5 who developed some laryngeal spasm, mentioned above, all were considered to be very satisfactory. The nursing staff were well pleased with the pre- and post-operative behaviour of these children.

In conclusion, I would wish to agree heartily with Dr. Doughty that the intravenous and intubation technique provides very satisfactory anaesthesia for adenotonsillectomy in children, but would submit that oral premedication with methylpentynol followed by subcutaneous atropine sulphate offers a satisfactory alternative to papaveretum and scopolamine, and does not possess the possible depressant effects of the latter drugs upon the vital centres and reflexes.

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CONTROLLED RESPIRATION IN NEUROSURGICAL ANAESTHESIA

Sir,—May I express my substantial agreement with the experiences of Dr. Diana Furness using controlled respiration for neurosurgical operations (Brit. J. Anaesth., 1957, 29, 415)?

I have used continuous controlled respiration by mechanical respirator for all the neurosurgery at Frenchay Hospital for over three years, and have records of about 500 cases.

The technique throughout has been: premedication with atropine; induction with thiopentone; curarization with tubocurarine; intubation with a cuffed tube, and nitrous oxide and oxygen with a circle absorber, but with excess gases and semiclosed circuit. In about one-fifth of the cases, morphine 10–15 mg has been given intravenously.

In view of the duration of operation, it is usually preferable to extra doses of thiopentone. In all cases with papilloedema and/or indications of raised intracranial tension, intravenous sucrose, 50 to 100 ml of 50 per cent solution, has been given immediately after induction and intubation.

The advantages appear to be:
(a) Low intracranial tension, with normal arteriolar vascularity and blood pressure. This seems to me important, as the cause of tissue death in cases of raised intracranial tension is vascular ischaemia, as it is in the case of strangulation of a hernia, secondary to venous engorgement. It does not seem sound practice to lower the blood pressure in such cases, often with a pressure already raised in an attempt to compensate for defective cerebral circulation, unless access can be obtained by no other means.

The bloodlessness, and lack of cerebral congestion and swelling, obtained by the technique outlined are as good as that obtained by me with safe degrees of controlled arterial hypotension, and are without the hazards of reactionary oedema, secondary to unmeasurable inadequacy of the cerebral circulation.

Though it has been apparently confirmed that the total circulation through the head is not affected by the use of controlled hypotension, personal observations have convinced me that the cerebral cortex can be made relatively ischaemic for long periods by permitting a low blood pressure, and it is possible that a shunt is responsible for the apparent anomaly.

Bleeding, after all, is in the main from the veins and capillaries, and cerebral decongestion (which is the primary object of craniotomy) is a more logical approach to its control than arterial hypotension.

(b) Recovery at the end of surgery is immediate. Neostigmine and atropine are usually given, and the patient is awake, with normal pharyngeal reflexes and tongue and jaw tone, as the tracheal and pharyngeal toilet is performed and the tube withdrawn.

This means that any neurological abnormality then or subsequently can be observed, and one does not have to try to guess how much of a given picture is due to narcotic depression, and how much to pathology or the effects of surgery.

(c) Postoperative course. The incidence of postoperative brain swelling is now almost nil. Prior to the use of this anaesthetic technique,