on the afferent side is an important adjunct. For this reason we prefer to spray the throat in all cases with a 2% solution of amethocaine hydrochloride at the beginning of anaesthesia: in bronchoscopies 1 ml. of the solution is introduced into the trachea by means of a laryngeal cannula or by injection through the cricothyroid membrane. It is not known whether decamethonium iodide has any protective effect against possible cardio-inhibitory and other reflexes of the vago-vagal type; although it is uncertain how common or dangerous such phenomena may be, topical anaesthesia provides an additional safeguard in this respect. Notable advantages of the method are lack of explosion danger, greater safety than chloroform anaesthesia, low toxicity, and speed.

Technique

Suitable premedication, including atropine or scopolamine, is given one hour pre-operatively. The estimated dose of decamethonium iodide (ranging from 3 to 5 mg. in adults) is injected intravenously and is immediately followed by little more than a sleep dose of thiopentone (0.3–0.5 g.) given slowly through the same needle. An oral airway is inserted and the 2% amethocaine hydrochloride spray directed down it. Oxygen is then administered by inhalation or inflation for three to four minutes until the relaxant effect is maximal. This is an important point, as apnoea, should it occur, is well tolerated in the presence of full oxygenation of the lungs. A small additional dose of thiopentone is now given and the endoscopy is begun or the endotracheal tube introduced.

Maintenance is usually ensured by further doses of thiopentone given intermittently during the operation. Where an endotracheal tube is used nitrous oxide and oxygen are administered; trichlorethylene has occasionally been employed as a supplement. In rare instances where the operation has lasted more than 15 minutes, further doses of decamethonium iodide have been given as indicated.

Should respiratory depression or apnoea occur, it is the duty of the anaesthetist to maintain adequate oxygenation of the patient; this involves (1) the maintenance of a clear airway and (2) artificial ventilation. The former is secured by the instrument in bronchoscopy or by the tube in other cases. Adequate respiratory exchange should be ensured by gentle compression of the flanks and lower ribs (as in Schäfer's method) or, in the intubated cases, by rhythmic pressure on the rebreathing bag of the anaesthetic apparatus.

Discussion

The method described has been used in 50 operations for peroral endoscopy and in 250 cases for endotracheal intubation. The ages of the patients ranged from 3 to 82 years. Satisfactory operating conditions were obtained in all.

The dosage of decamethonium iodide has approximated to 0.5 mg. per stone (6.35 kg.) body weight. This high rate is important, as adequate curarization is an essential part of the technique. In no instance has delayed return of respiration been encountered. Recovery can always be confidently predicted within a 20-minute period from administration; however short the operation, the residual period elapsing before recovery can only be brief, and during this interval oxygenation can easily be maintained by ventilation with oxygen, simple anaesthetic apparatus being used. For this reason the antagonist—pentamethonium iodide—has never been employed. The unfortunate side-effect of ganglionic block by this drug renders its use

inadvisable on most occasions; its employment in surgery is likely to be limited to the deliberate production of hypotension to reduce haemorrhage during certain operations—for example, fenestration. This technique is unsuitable where the administrator is not skilled in the care of the apnoeic patient or where adequate facilities and equipment are lacking. Dyspnoea is a contraindication to the use of the method.

Jaw clonus has been encountered occasionally during the induction period; this may be associated with the anticholinesterase effect of decamethonium iodide. However, in all instances it has been transitory and has provided no obstacle to intubation.

No qualitative difference has been evident in comparison with other relaxants: an apparently greater ease of laryngoscopy noted early in the series is probably due to the fact that a relatively high dosage of the short-acting decamethonium iodide was employed. In contrast to the observations of Doughty (1950), irritability of the respiratory tract has not been greater than with other relaxants; our experience in this respect is confirmed by Harris and Dripps (1950).

It is believed that this method possesses definite advantages, especially over D-tubocurarine, in that the short-lived action of decamethonium iodide approximates closely to the average duration of these relatively short procedures.

I am indebted to my colleagues for access to their records in the preparation of this paper.

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Medical Memoranda

A Toxic Effect of Thiouracil Hitherto Undescribed

The object of this communication is to set on record a hitherto undescribed side-effect of thiouracil.

CASE REPORT

The patient, a woman aged 48, during a period of intense business anxiety in November, 1947, became "nervy," developed palpitation, and lost 42 lb. (19 kg.) in weight during the next six months. In July, 1948, her doctor asked me to see her because she had a persistent tachycardia and had failed to regain her normal weight in spite of considerable improvement in her general condition with rest and sedatives.

She was a small-boned but not very thin woman, and weighed 7 st. 6 lb. (47.2 kg.) in her indoor clothes. In spite of some nervous agitation under examination she did not give the impression of being a neurotic subject. Her pulse was regular at 120, the thyroid gland was slightly enlarged, and she had a fine tremor of the outstretched hands. There was no exophthalmos or other abnormal eye sign, and her skin was not unduly moist. Her heart was normal and her blood pressure 160/74.

At that time I did not regard the clinical evidence of thyrotoxicosis as strong enough to justify a change in treatment. Six months later, however, though there had been no alteration in weight, her thyroid gland had enlarged and she had developed exophthalmos of the right eye; moreover, she complained of always feeling hot, and her skin was moist.

Treatment with methyl thiouracil, 100 mg. twice daily, was begun and considerable clinical improvement followed. After two weeks she complained of "difficulty in focusing her eyes," and her doctor noted that she had horizontal nystagmus to right and left. The dose of thiouracil was reduced to 100 mg. once a day during the next week, but she stated that she felt "light-headed" and that everything she looked at "seemed to be jumping about." After another four days she developed such intense vertigo that she could not stand or even sit up in bed unless she kept her eyes closed, and any attempt to get up and move about caused nausea and sickness. Gross nystagmus was present in all planes. Thiouracil was stopped and the more severe symptoms subsided during the next three days, but she remained unsteady and immediately became sick when she tried to walk. At no time was there any headache or skin rash, and apart from the symptoms described above she felt quite well.

Her general condition was good and the signs and symptoms of thyrotoxicosis were definitely improved—pulse 100, exophthalmos much less noticeable, skin normal, and no complaint of feeling hot. She was in fact very pleased with the effect of treatment and most anxious to continue to take the thiouracil in case symptoms should return. The only abnormal finding in a full examination of the central nervous system was a very coarse nystagmus in all planes. Romberg's sign was negative and the ocular fundi and tympanic membranes were normal. The condition of the heart and the blood pressure were unchanged, except that a few extrasystoles were noted.

During the next three weeks she gradually improved and was able to go out if accompanied. She still found reading difficult. Her thyrotoxic symptoms, however, increased again, and partly on this account and partly because of the unusual effects of the thiouracil treatment she was sent to Professor Himsworth. He agreed that the development of nystagmus could, in reason, be attributed only to the thiouracil, but could neither recall having encountered a similar case himself nor, in spite of wide inquiry, both in this country and abroad, find anyone else who had done so. He advised surgical treatment for the thyrotoxicosis without delay.

The patient was admitted to hospital on May 24, 1949; and on June 3 subtotal thyroidectomy was performed by Mr. John Griffith. During the first week after operation nystagmus increased, but by the fourteenth day, when the general condition was excellent and the pulse rate had become stabilized between 70 and 80, it became less marked and she made no complaint of visual disturbance. She was then discharged from hospital.

Sections of the excised gland were examined by the pathologist (Dr. R. W. Johnson), who reported that the appearances were typical of thyrotoxicosis.

When last seen, on July 15, 1949, six weeks after operation, she looked and felt well and had gained a stone (6.4 kg.) in weight. Nystagmus, however, was still present, being most marked when she looked to right and left, but also when the eyes were raised upwards. She said that she could read without difficulty but that "things jumped about" when she looked to either side. Apart from the nystagmus, examination of the central nervous system was negative as before, and there was no evidence of cardiovascular sclerosis or ear disease.

COMMENT

When thiouracil produces toxic effects they are generally manifest on or about the fourteenth day after the beginning of treatment. In the present case visual symptoms and nystagmus appeared at this time. These receded again with omission of the drug. There is therefore strong presumptive evidence that this was an effect of thiouracil. The absence of history or physical signs of disease of the central nervous system or of vascular sclerosis makes any alternative explanation improbable.

It might be suggested that the particular sample of thiouracil used contained an impurity which could be held to blame; some of the tablets were therefore sent to the manu-

facturers for analysis, but they were found to be in every way normal pure samples of methyl thiouracil.

In the circumstances it is of course impossible to give a prognosis, but as four months have elapsed since thiouracil was discontinued and signs and symptoms are still present it seems unlikely that complete recovery will now take place.

Acknowledgment is due to Dr. Fitzgerald Frazer for permission to publish these notes of his patient and for his own careful records of the case while she was under his care. I have also to thank Professor Himsworth for his interest and advice.

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Fulminating Staphylococcal Pneumonia Treated with Massive Doses of Chloramphenicol and Penicillin

Fulminating staphylococcal pneumonia has in recent years shown itself to be a rapidly fatal condition despite penicillin therapy. We have recently encountered a case following influenza B infection in which the organism was resistant to penicillin. Early treatment with chloramphenicol was instituted, but the patient's condition deteriorated rapidly; however, with increased dosage he recovered after a critical illness.

CASE REPORT

The patient was a male nurse aged 39. His first symptoms were those of a severe febrile cold. After four days he developed a slight pain in the left side of his chest. During the next six hours this increased to such an extent that breathing became difficult; it was at this stage that he attended the casualty department of University College Hospital.

Physical examination showed a severely ill man with marked respiratory distress, temperature 100.6° F. (38.1° C.), pulse 100,

FIG. 1.—Radiograph taken on March 22.

respirations 26. Movement on the left side of his chest was considerably reduced and rhonchi were widespread. Radiographs of his chest taken at that time (March 22, 1950) showed consolidation in the anterior and middle basal segments of the left lower lobe (Fig. 1). A diagnosis of aspiration pneumonia was made, and after blood and sputum had been collected for laboratory examination he was given 2.5 g. of chloramphenicol