maximum which it was thought safe to give in these cases—it had to be supplemented with¹ intravenous thiopentone. Rectal paraldehyde was therefore substituted for bromethol, but it also had to be supplemented with thiopentone, and, in addition, since it is chiefly excreted by the lungs, it was felt that its volatility might affect the blood gas analysis.

It was now considered that if thiopentone was required as a supplement to basal narcosis it might well become the primary anaesthetic agent. Rectal basal narcosis was discarded and oral pentobarbitone sodium substituted; the technique now used is as follows.

Technique

The child is premedicated with atropine, 1/150 gr. (0.43 mg.), and pentobarbitone. It should be emphasized that the pentobarbitone should be prescribed on a basis of weight rather than age, for many of these patients are grossly underdeveloped (one child for investigation was aged 4½ years but weighed 16½ lb.—7.5 kg.). The formula employed in this series has been approximately 3/5 gr. per stone (6 mg. per kg.) body weight. Forty-five minutes later the child is taken to the x-ray theatre, where there is an anaesthetic trolley equipped with a laryngoscope, endotracheal tubes, and oxygen under pressure. If possible there should also be available some form of suction for use in an emergency.

The child is now anaesthetized with thiopentone 5%, given slowly enough to avoid respiratory depression. Procaine 1% or 2% is injected round the selected vein, serving the double purpose of supplementing the anaesthesia and diminishing the risk of venospasm, and the catheter is inserted in the usual way.

From now on anaesthesia is maintained by small divided doses of thiopentone through the catheter. Usually 1 ml. is sufficient at any time, and the indication for a further dose is recognized by some movement of the child's body.

A careful watch on the child's pulse, respiration, and general condition should be kept at all times, for if the investigation is difficult or unduly prolonged the anaesthetist should be responsible for its curtailment. In most cases the injection of the contrast medium for angiocardiology leaves the child comparatively undisturbed, but occasionally it is accompanied by a brief period of respiratory arrest and some degree of surgical shock. Should there be a severe reaction the investigation is stopped, but otherwise it seems to be perfectly safe to allow a second oblique angiocardigram to be taken if required, although it is the practice to wait for half an hour to allow the first dose of contrast medium to be excreted.

In a limited number of cases angiocardiology alone was performed, and consequently there was no objection to the use of a non-explosive volatile anaesthetic agent. On these occasions it was found that, with the same pre-medication, "trilene" and oxygen administered through a Boyle machine produced a safe, smooth, and completely satisfactory anaesthetic, which did not appear to produce any cardiac irregularity beyond that which might already be present.

Some 40 investigations have been carried out by the technique described above. The children have usually arrived in the x-ray theatre sleepy or asleep and with less cyanosis than normal, presumably due to a lowered basal metabolic rate and a reduction in physical activity. With one exception their behaviour under anaesthesia has been perfectly satisfactory, the exception being a child who was known before the operation to be subject to

attacks of spasmodic coughing with accompanying distress and increased cyanosis. An attack was precipitated by the injection of the contrast medium, but recovery was rapid when oxygen was administered under slight positive pressure. In no case has there been any tendency to vomit under anaesthesia or any other complication, and the investigations have as yet been free from any mortality.

Medical Memorandum

Mongolism in One of Twins

Mongolism is the most frequent growth disorder of children, affecting from two to three in every thousand births; the condition is therefore of considerable importance. The occurrence of mongolism in one of twins, however, has very rarely been reported in British literature, the last time being by Armstrong (1928), although according to Benda (1947) a total of over 80 cases had by then been reported in world literature. The case here recorded may therefore be of interest.

CASE REPORT

The twins were born on October 10, 1946, the boy weighing 6 lb. (2.72 kg.) and the girl 7 lb. (3.17 kg.). From birth it was obvious that the boy had all the typical features of the mongoloid. The children were born when the mother was aged 40, after a gap of 12 years from the birth of a normal baby girl. There had been three miscarriages in the intervening years. This case illustrates perfectly the thesis by Benda (1947) and others before him that mongolism usually occurs towards the menopause or after a period of infertility, during which there may be miscarriages.

Treatment.—Benda believes that mongolism is due to hypofunction of the pituitary, as previously suggested by Brousseau (1928) and others, and thinks that the best treatment is with anterior pituitary extract plus thyroid, which has been favourably reported upon by Timme and others. The present case was treated with thyroid extract plus vitamin B from birth until the age of 20 months (July 1, 1948), when he was also given "antuitrin growth" by injection. He seemed to improve immediately; the stools rapidly changed from small hard pellets to normal and he began to lose his lethargy. His weight, which was only 15 lb. 6 oz. (6.97 kg.), began to increase by 1 lb. (0.45 kg.) each fortnight for the first time. During a period of one month when the pituitary extract was unobtainable he lost weight and interest in food, slept more, the stools deteriorated, and lethargy returned.

When treatment was resumed, so did the improvement. The mongoloid appearance started changing so that he looked more normal. He took an interest in and played with his toys, he became possessive and jealous, his hair improved in lustre and texture, the flesh became firm, the skin stopped flaking, the nails improved, and the feet broadened. He started to say a few words.

With his spine becoming firm he could first sit up and then stand up with support on August 20. He could propel himself across the room by November 18, and pull himself upright.

The family moved in January, 1949, and did not keep up correspondence, so unfortunately I do not know his present condition.

A. R. GRAHAM, M.B., Ch.B., D.P.H.

Barrister-at-Law; Medical Officer of Health,
City of Lancaster.

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