with those which obtain when the disease manifests itself elsewhere. We have to bear in mind:

1. That it is vain to expect faradism and massage to restore the tone of diseased muscles so long as these are over-stretched—hence a preliminary tenotomy is essential.

2. That operative measures, though necessary, are by no means the most important part of the treatment. Stimulation of the weakened opponents must be carried on for some months and exercises for many years. If this is not done, or if the muscles have been severely damaged by the original attack, relapse is almost certain to occur.

3. In giving a prognosis one should take into account the age of the child, the amount of faradic irritability remaining on the convex side, the bony deformity of the spine, and, lastly, the degree of facial disfigurement. A full consideration of these points will often avoid much disappointment to parents and damage to the reputation of the physician.

In conclusion, I would urge that every case of acute infantile palsy should be kept under observation for some time with a view to the possibility of a supervening wry-neck. If the lesions in the cranial nerves concerned have been but slight, the deformity may not manifest itself for many months. The sooner the condition is diagnosed and treated, the better are the prospects of cure. In the early stages faradization alone may suffice to check the deflection of the head. It must also be remembered that the tendency of the facial hemiatrophy is to increase from year to year, just as a paralysed limb fails to keep pace with its fellow in rapidity of growth. Faradic stimulation, if begun sufficiently early, does much to lessen these inequalities of development; the interrupted current should, therefore, always be given a careful and persistent trial.

A RECORD OF FOUR HUNDRED CASES OF GENERAL ANAESTHESIA PRECEDED BY SCOPOLAMINE.

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THE advantages of the administration of hypnotic drugs as a preliminary to the use of general anaesthetics is obvious from the point of view of the patients. Apart from the immediate advantages of removing the element of fear, it enables the patient to embark upon the perils of an operation in a tranquil condition, which may contribute much to his subsequent safety. The effect of fear and excitement upon the course of anaesthesia is very great, the acceleration of the pulse lasting long after consciousness is obliterated, and rendering the patient much more liable to cardiac failure from reflex inhibition. Also the irregularity of respiration so often associated with an excited condition exposes the patient to a greater risk of overdose during the stage of induction.

A large number of cases have been recorded in which operations have been performed under scopolamine alone. In these cases, although all the advantages of the hypnotic effects of the drug were obtained, large and repeated doses were necessary to obtain complete analgesia. Consequently there is a great risk of cardiac failure from the large amount of scopolamine injected.

All the advantages of the hypnotic effect together with complete safety can be obtained by not exceeding $\frac{1}{100}$ grain of scopolamine and using a safe drug, such as ether, for the purpose of maintaining anaesthesia subsequently.

In the following series I have endeavoured to follow the same technique in all cases. Briefly, the scopolamine combined with morphine and atropin is given by hypodermic injection forty-five minutes before operation. The patient is then left with screens around the bed, or in a darkened room. The anaesthetic is commenced in bed, and complete surgical anaesthesia obtained before moving the patient.

The 400 cases I have considered under the following headings:

1. The Dose.

The scopolamine, morphine, and atropin is prepared in such a manner that 5 minims of sterilized solution contains the dose required. The solution is placed in hermetically sealed glass capsules, each containing one dose.

In the first 50 cases $\frac{1}{100}$ grain of scopolamine, $\frac{1}{100}$ grain of atropin sulphate, and $\frac{1}{2}$ grain of morphine tartrate was given to 27 women forty-five minutes before operation, while in the case of the 23 men a preliminary injection of $\frac{1}{2}$ grain of morphine was given one and a half hours before operation, followed by the $\frac{1}{100}$ grain of scopolamine, $\frac{1}{100}$ grain of atropin, and $\frac{1}{2}$ grain of morphine three-quarters of an hour before operation.

The remaining 350 patients all received $\frac{1}{100}$ grain of scopolamine, $\frac{1}{100}$ grain of atropin, and $\frac{1}{2}$ grain of morphine with the exception of 20 children between the ages of 10 and 16 years, who each received $\frac{1}{100}$ grain of scopolamine, $\frac{1}{100}$ grain of atropin, and $\frac{1}{2}$ grain of morphine.

2. The Induction of Anaesthesia.

The first 40 patients were anaesthetized with ether by the open method. But it was found that the pungent ether vapour sometimes caused those patients who were only lightly asleep to wake up. In order to obviate this in the remainder, anaesthesia was induced to the second degree with chloroform and then continued with ether by the open method.

There was no stage of excitement during the induction; the majority of the patients passed under the influence of the anaesthetic without the slightest movement.

3. The Course of the Anaesthesia.

The most marked effect was upon respiration, which was in most cases indistinguishable from or even quieter than is the case in chloroform anaesthesia. In 25 patients, men of a plethoric and muscular type, the respirations were certainly exaggerated, but even then the movement of the abdomen was much less than with ether alone.

A noticeable effect was the marked insusceptibility of these patients to reflex troubles, either respiratory or cardiac. In 30 cases of thyroidectomy, including 16 of exophthalmic goitre, there was stridor during removal in 2 cases only, and in no case was the pulse accelerated. In 28 operations upon the upper abdomen with pulling upon the mesentery or peritoneum there was no stridor.

With regard to the relaxation to be obtained by this method, it appeared to be in direct proportion to the amount of ether administered. The tranquil respiration was obviously an advantage in abdominal surgery.

The amount of ether used was certainly much less than that required to produce a corresponding depth of anaesthesia without the previous injection of scopolamine, morphine, and atropin.

4. The After-Effects.

Here, again, the usual course of anaesthesia was much modified, the patients usually remaining unconscious for from four to six hours after the completion of the operation. The time varied to a certain extent with the amount of ether administered. In 43 cases, in which the operation lasted over two hours, the average period of unconsciousness was six hours, while in 9 cases, in each of which there was rather severe shock, the patient remained unconscious for seven hours.

With regard to post-anaesthetic vomiting, of the 400 patients 255 did not vomit at all, 120 vomited once or twice, and the remaining 25 vomited several times during the first few hours after recovering consciousness. Most of these 25 patients had had long operations, with a large amount of anaesthetic.

Conclusions.

Judging from these results, I think that it is safe to urge that the method has many advantages.

From the point of view of the patient it either blots out or robs of its terrors the preliminaries of an operation, which in some cases, as, for instance, exophthalmic goitre, is a very real advantage.

It also diminishes the discomforts of after-pain, etc., by lengthening the period of unconsciousness; post-anaesthetic vomiting also is certainly lessened.

The freedom from sepsis and salivation obtained by the administration of ether by the open method, in combination with atropin, greatly reduces the tendency to pneumonia.

From the point of view of the operator the quiet respiration and relaxation which is usually obtained is of great assistance.

Finally, there is the undoubted advantage of being able to substitute with equally good results a safe drug, such as ether, for a dangerous one, such as chloroform.