

Correspondence.

"SUDDEN DEATH UNDER AN ANAESTHETIC."

SIR,—In your last issue (June 14th, p. 739) Dr. H. S. Gabbett of Eastbourne records another instance of sudden death under anaesthesia induced for the enucleation of tonsils by the dissection method. His case resembles many others which have proved fatal during the different methods of "operation for tonsils and adenoids" in that the patient was a young, "well-grown," and comparatively speaking healthy individual.

In his concluding paragraph Dr. Gabbett asks two questions which I would like to answer. My replies will not afford a scientific explanation of such a disaster as he records, but the means of obviating such a tragedy are, at least, the outcome of ripe experience which has not been acquired without having paid the price of such mental suffering as all of us must endure when we have been the principal actors in such a scene as "a sudden death under an anaesthetic."

1. To his first question I should answer that there is no danger in the operation of enucleation of tonsils assuming it is done with reasonable skill, but there is very real danger if anaesthesia is induced by chloroform, or by any mixture in which this drug is an important factor. On the other hand, the risk of the operation will be reduced to a minimum if deep narcosis is brought about by "open ether" preceded by a hypodermic injection of $\frac{1}{100}$ grain atropine, the object of the latter being to check the excessive secretion of mucus which would otherwise be induced by the ether vapour. The ether anaesthesia must be pushed until the pharyngeal reflexes are abolished, and the respiratory movements are quiet and regular in their rhythm. Then the patient may be gagged, and while the actual operation is being performed anaesthesia may be maintained by chloroform administered through a Junker's inhaler. Under these circumstances the stimulant effect of the ether will not be destroyed by the depressing action of chloroform.

2. To his second question, whether the necessarily light anaesthesia given by a Junker apparatus and tube when the mouth is widely open is a source of peril, I reply that light chloroform anaesthesia is surely unwise for any operation, and especially in the throat, where the reflexes are notoriously sensitive and well developed. Furthermore, it is impossible to perform enucleation by dissection in a satisfactory manner unless the pharyngeal reflexes are abolished.

These statements are based on an experience of some twenty years of hospital and private practice; during this time I have seen eleven deaths under anaesthesia induced by chloroform, or a mixture of chloroform and ether. Three were in my own practice. I have never seen a death under "open ether" induction. For the purpose of substantiating the views above expressed I have looked through my private case-books for the last five years and find a record of 575 cases of tonsils "enucleated by dissection." I never employ any other method.

During this last-named period, with very few exceptions, "open ether," preceded by atropine, has been the anaesthetic used. I have not seen a single case of heart failure, and, incidentally, have only had two cases of post-operative haemorrhage; one was really "continued" bleeding; the second occurred on the seventh day after operation.

Hence it is that I hold the very strong conviction that, as a general rule, both surgeon and anaesthetist run a grave and unnecessary risk when they agree to the induction of general anaesthesia by means of chloroform, or any mixture in which that drug is a powerful factor.—I am, etc.,

HERBERT TILLEY, B.S., F.R.C.S.

London, W., June 16th.

SIR,—The case recorded by Dr. Gabbett appears to me to be an instance of cardiac fibrillation during light chloroform anaesthesia, the mechanism and frequency of which has been so ably demonstrated experimentally by Dr. A. Goodman Levy. It appears that there are two distinct ways in which a patient may cease to breathe during chloroform anaesthesia. There is the ordinary overdose, the clinical picture being a slow failure, the respiration

becomes diminished in frequency and volume, cyanosis develops secondarily, and finally, as in ordinary asphyxia, the heart fails. From practical experience I think that death from this cause must be very rare, even if the condition is not recognized until respiration has ceased. These patients recover with the aid of a little gentle artificial respiration and the administration of oxygen. The other way is a primary cardiac failure and the respiration fails secondarily. The clinical picture is quite different. Suddenly, generally during the induction, the patient becomes intensely pale, the pupils widely dilated, the radial pulse either extremely rapid and irregular or absent, according to the severity of the attack. Respiration continues in a somewhat gasping way for a few moments; frequently the exaggerated sighing inspiration is the first indication of the sudden cerebral anaemia. The patients I have seen recover from this condition have done so suddenly, and recovery has been due to measures directed to restore the cerebral circulation—that is, elevation of the legs and inversion. The colour returns, the radial pulse becomes once more palpable, and breathing starts again. Dr. Levy has shown experimentally in animals that this condition occurs during light and incomplete chloroform anaesthesia following some slight stimulus, and is due to fibrillation of the ventricle. The evidence is, I think, in favour of this being the cause of most of the fatalities under anaesthesia in the human subject. Deaths under anaesthesia are nearly always due to chloroform or its mixtures. According to reports of fatal cases, the patient has frequently been particularly strong and healthy. A very small amount of anaesthetic has been used, but during the induction or at the beginning of the operation the patient has either moved, phonated, vomited, or swallowed, showing a light degree of anaesthesia, and then suddenly died with the symptoms described above.

When the operation of enucleation of the tonsil was introduced by Mr. George Waugh profound anaesthesia with chloroform, with abolition of all reflexes, was advocated. In my own experience of the anaesthetics in a large number of these operations I have never seen a death with profound chloroform anaesthesia, but although it may not be dangerous under these circumstances chloroform anaesthesia sometimes looks rather alarming, and certainly requires very close and constant care, and is consequently a little difficult to manage in the darkened rooms used by some operators. Experiments with ether for this operation were conducted some time ago, and it was found that if a really profound anaesthesia is induced by a so-called "open ether" method—that is, using many layers of gauze and several ounces of ether and pushing the anaesthetic until the respiration begins to get shallow, the pupils widely dilated, and all the pharyngeal and laryngeal reflexes abolished—an absolutely motionless field of operation is obtained, which has always been insisted upon for this operation. With ether this condition is obtained without the slightest anxiety; the patients are pink and rosy.

The chief point raised by this discussion seems to be the possibility of enucleation of tonsils without danger. Whatever the scientific explanation, we know that deaths do occur with deplorable frequency under chloroform. Why, then, induce anaesthesia with chloroform or its mixtures in any case in which it is possible to avoid it?—I am, etc.,

London, N.W., June 16th.

FELIX ROOD.

SIR,—To Dr. H. S. Gabbett's request for information whether there is any special danger in the operation of enucleation of tonsils, I would reply that we may assume enucleation of the tonsils to be a major operation and subject to great risks which cannot be entirely obviated. The question arises whether the slight gain from complete dissection of the tonsils is worth the extra risk in what is, after all, a minor malady. I am certain that this operation is passing out of fashion amongst the experts. As your correspondent states, several deaths have been recorded. There are many more which have not been published.

The operation, to be satisfactory, is fairly prolonged, and involves much interference with free respiration whilst the tonsils are pulled inwards, in addition to the traction on the nerves of the neck. Here occurs a combination of dangers. Many of these patients are of lymphatic type