DR. SNOW ON CHLOROFORM IN SURGICAL OPERATIONS.

BY JOHN SNOW, M.D.

I have now been very much occupied in the administration of chloroform for a period of nearly eight years; and I am quite confirmed in the opinion which I long ago expressed, that the employment of the drug is extremely liable to give occasion to observation and reflection, and that, in its use, we are no longer bound by any of those rules by which the patient may be subjected to the operation, and the general result of these tables has been by our own observation of the clinical experience of other hospitals—have led us to the foregoing remarks. Dr. Smith, in particular, has gone through a series of experiments as to the effect of treatment on phthisis generally, and the comparison of the ingesta and exsesta in patients in marked consumption. Dr. Pollock has directed attention to the preliminary concomitants, or antecedents, of consumption; the latter appears to us of more immediate interest in the prophylaxis or prevention of one of the greatest evils to which the human frame, more particularly in this country, is subject.

ON THE EMPLOYMENT OF CHLOROFORM IN SURGICAL OPERATIONS.

Patients with fatty degeneration of the heart are liable to die suddenly in two distinct ways: first, with the cavities of the heart empty; and, secondly, with the cavities of the heart full of blood. In the latter case, death is caused by the accumulation of blood in the heart, and is in a condition to undergo a surgical operation. If it were simply a question of giving chloroform or not giving it, there are, indeed, some patients to whom one would prefer not to give it; but the question lies between exhibiting chloroform or inflicting the pain of an operation, and, according to my observation, the former is always the lesser evil of the two. The affection which is generally thought to be most opposed to the inhalation of chloroform is fatty degeneration of the heart; but from all that I have been able to observe, it is of great advantage, in such cases, to prevent the pain of an operation.

Dr. Pollock and Dr. Edward Smith—corroborated as the general result of these tables has been by our own observation of the clinical experience of other hospitals—have led us to the following remarks. Dr. Smith, in particular, has gone through a series of experiments as to the effect of treatment on phthisis generally, and the comparison of the ingesta and exsesta in patients in marked consumption. Dr. Pollock has directed attention to the preliminary concomitants, or antecedents, of consumption; the latter appears to us of more immediate interest in the prophylaxis or prevention of one of the greatest evils to which the human frame, more particularly in this country, is subject.

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Out of the entire number of deaths from chloroform which are recorded, there are very few in which any considerable difficulty was experienced. I have given it to a number of patients who are dead from chloroform were healthy persons in the best period of life—that is, from fifteen to thirty-five or forty, and it is most likely that they had, on the average, a sounder state of health than, upon the same ratio, is to be expected of the majority of patients who die from this cause, with impunity. It was no very uncommon occurrence for patients to die on the operating-table before the introduction of anesthesia, either just before the commencement of an operation or during its performance. Dr. Robertson, writing in 1852, says that two deaths had occurred on the operating-table in Edinburgh since the discovery of the effects of chloroform, in cases where that agent was not used. One died directly by the shock of the incision through the abdominal cavity, and the other instantly after the use of an abscess lancet. He also alludes to a case which occurred in Edinburgh just before the introduction of chloroform. Dr. Robertson had shaved the groin of a patient, and was proceeding to perform the operation for hernia, when the patient fainted, and died before any incision was made.

We have no information respecting the state of the heart in the patients who died suddenly on the operating-table before the introduction of ether and chloroform, but it is extremely probable that many of them were affected with fatty degeneration of this organ; and I believe that by the careful administration of this agent we shall be enabled to make examinations, and to perform operations that would otherwise be impossible.

The sudden deaths which occasionally took place on the operating-table, before the introduction of anesthesia, have something more to do with the state of the patient than as affecting deaths that have occurred during the use of chloroform; but, with a very few exceptions, this is not a correct view of the subject. In the instance at Mr. Robinson's, and in that at St. George's Hospital, the patient died suddenly, from mental emotion, without being affected by the chloroform, which they only just beginning to inhale: and in these cases, the death was probably the cause of death. With these, and perhaps one or two other exceptions, the deaths that have taken place under the influence of chloroform have nothing in common with those which happened on the operating-table before its introduction. In these latter cases, if the death did not arise from hemorrhage, it was occasioned either by pain or mental emotion; but as the patient neither feels nor thinks when fully under the influence of chloroform, he cannot die from either of the latter causes.

In speaking of the benefits of chloroform, it is quite allowable to bring forward the sudden deaths which occasionally happened in the patients who died before the discovery of any agent; but to suppose that the patients who have died during the employment of chloroform are the same that would have died without it is undoubtedly a mistake. The late Dr. Richard Mackenzie related the case of a man who had a convolution during the operation, but who had used chloroform, but he had none with him. Within five minutes after Dr. Mackenzie left the house, the patient died instantaneously, whilst he was talking freely to those about him. He was a corpulent man, from sixty-five to seventy years of age, who had lived freely, and Dr. Mackenzie thought it probable that he had fatty degeneration of the heart, but there was no examination of the body. The cause of death, in this case, was probably the pain to which the patient had been subjected, and it is not likely that the employment of chloroform might have saved his life for a time. All events, there is no reason to conclude that the patient would have died in the manner he did if chloroform had been administered.

Surgical operations are, I believe, never performed during acute diseases of the lungs, and chronic affections of these organs, as phthisis and chronic bronchitis, form no objection to the employment of chloroform; and I have performed operations where one or other of these diseases was present, and there have been no ill consequences in any case. The mucous membrane of the air-passages is always irritatable, both in health and in disease, and when this agent is administered, it excites coughing at first. It is therefore necessary to begin by giving the vapour very gently in these cases, and in a little time the irritability of the mucous membrane is allayed, and indigestion and coughing is afterwards relieved, in nearly all these cases, for a time—often for two or three days, in cases of chronic bronchitis.
The most convenient position in which the patient can be placed whilst inhaling chloroform, is lying on the back or side, as he is then duly supported in the state of insensibility, and can be more easily restrained if he should struggle whilst becoming insensible. The semi-recumbent posture on a sofa also, does very well; and there is no objection to the sitting posture, when that is most convenient to the operator. In that case, however, the patient should be placed in a large easy chair with the back, so that the head as well as the trunk may be supported without any effort, otherwise he would have a tendency to slide and fall when insensible. It has been said, that it is unsafe to give chloroform in the sitting posture, or in the sitting posture only; but it would, I think, in all cases, so far reduce the power of the heart as to render it unable to send the blood to the brain. Observation has proved, however, that chloroform usually increases the force of the circulation; and although the heart itself is, generally, the best for a patient under an operation in all circumstances, I consider that the sitting posture is by no means a source of danger when chloroform is given, if the ordinary precaution be used which would be used without chloroform, that of placing the patient horizontally if symptoms of faintness come on. I have preserved notes of 647 cases in which I have given chloroform to patients sitting in a chair, and no ill effects have arisen in any of these cases.

The person who is about to inhale chloroform is occasionally in a state of alarm, either about that agent itself or the operation which calls for its use. It is desirable to allay the patient’s fears if possible before he begins to inhale, as he will then be able to breathe in a more regular and tranquil manner. In a few cases, however, the apprehensions of the patient cannot be removed, and they subside only as he becomes unconscious from the effects of chloroform only, and not to be administered if the patient is very much afraid, on the supposition that fear makes the chloroform dangerous. This, however, is, a mistake; the danger, if any, lies in the fear itself. Every object referred to, above, in which the patient died suddenly from fear, whilst they were beginning to inhale chloroform, and before they were affected by it; but the probability is, that if they had lived till the chloroform took effect, they would have been as safe as other patients who have inhaled it. If chloroform were denied to the patients who are much afraid, the nervous and feeble, who most require it, would often be deprived of its benefits. Moreover, the patients would either be prevented altogether from having the advantage of surgery, or they would be subjected to the still greater fear of the pain, as well as the pain itself; for whatever undefined and unreasoning fears a patient may have when the moment comes for inhaling chloroform, he has only chosen to inhale it on account of a still greater fear of pain. The practice I have always followed has been to try to calm the patient by the assurance that there is nothing to apprehend from the chloroform, and that it would be sure to prevent all pain; but where it has been impossible to remove the fears of the patient in this way, I have always proceeded to remove them by causing the arm to become insensible. As soon as the arm is insensible, the pulse, which just before may have been extremely frequent and small, from the effects of fear, generally falls almost to its natural frequency, and resumes its full volume and force.

As a general rule, it is best to place the patient in the position in which the operation will be performed before he inhales the chloroform; but in cases of disease of the large joints, and other instances where motion causes pain, it is an advantage to give the chloroform to the patient in bed before he is removed to the operating-table. It is often desirable also to give it to children in another room, that they may not see any of the preparations for the operation.

(To be concluded in our next.)

ON PARALYSIS OF THE MOTOR NERVES IN NEURALGIC AFFECTIONS.

BY C. HANFIELD JONES, M.B., F.R.C.P., F.R.S.
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Dr. Macoulloch is almost the only writer that I am acquainted with who distinctly states that paralysis is a mode of neuralgic affection. Dr. Cullen, in recognizing the nervous system as essentially debilitating and prostrating, tending to produce numbness of sensory nerves, palsy of motor, and fatuity or mental debility when it affects the brain. Of the general correctness of his opinions I feel strongly convinced, although it must be admitted that the conclusion that the disorder is dependent upon an interference of the nerves in many cases is not drawn with the same degree of confidence in many cases. The recognition of the fact, that impairment of motor power may be owing to the cause just mentioned, seems to me so important that I offer the following histories in illustration:

CASE 1.—R. B., aged sixty-five, male, labourer, admitted June 17th. Had been ill three or four days, a stout and healthy-looking, not subject to rheumatism; says he has lost the use of his right hand, can hardly grasp at all with it; the parts supplied by the median nerve are numb, but never in the parts supplied by the ulnar, some stiffness of the fingers of the right hand, which he denies, the arm is still a little enlarged; the affection came on suddenly; no pain in the head; no giddiness; pulse large and full; skin warm; tongue large, moist, with long white papillae; urine natural. His condition appeared so decidedly acentic, that although I was much inclined to regard the disorder as of neuralgic character, I thought it prudent to test, as it were, the system I had to deal with by other agents, before administering chloroform. I therefore gave him citrate of iron and quinine, five grains; water, one ounce, three times a day. On this treatment—the iron and quinine being increased after a fortnight to eight grains—he improved steadily, and was discharged June 23rd, having almost completely regained the power of his hand, as well as its sensibility. He said that at the time he had been so weak he could not use a knife or pen. Such a case illustrates very well M. Trousseau’s remark, that "paralysis du traitement a eu connaissance Ia nature des maladies."

CASE 2.—Is. E., aged fifty, female, married, one child. Has been ill since Christmas; admitted March 22nd; of short stature; complains of numbness and weakness of both arms, of the right more especially; dyes for neurasthenia, and hemiansthenia are all affected; has pain mostly in the arms, and numbness in the hands; cannot scrub, or use her hands in anything that requires strength; is not worse at night; skin cool; pulse rather weak; digestion good; bowels regular; tongue clean; no catamenia for nine years; has much soreness in an old blistered spot on the right arm. Moderate doses of quinine and iron were given up to May 3rd, conjointly at one time. He took then sixteen gr. of general compounds of iron, and quinine, (or cinchonine, which is supplied to out-patients), at ten grains, three times a day. On this treatment the patient improved. For the next two weeks she took ten grains of citrate of iron and quinine, with five grains of citric acid thrice daily, but at the end of the week after, (medicine having been omitted one week,) she complained that her arm was weaker, and all her limbs. I then began to give her larger doses of quinine, (or cinchomine, which is supplied to out-patients), first eight grains three times a day, and afterwards twelve grains. Under this she improved very much. By July 12th she no longer had a tendency to slide and fall when insensible. It has been impossible to remove the fears of the patient in this way, I have always proceeded to remove them by other agents, before administering chloroform. I now thought I might give the chloroform to the patient in bed before he is removed to the operating-table. It is often desirable also to give it to children in another room, that they may not see any of the preparations for the operation.

(To be concluded in our next.)