

## Original Communications.

### ON THE INHALATION OF CHLOROFORM AS A REMEDIAL AGENT.

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[Read before the South Hants Medico-Chirurgical Society.]

ALTHOUGH the administration of chloroform as an anæsthetic is as highly estimated as it is extensively practised, it certainly is not so much used as a means for the relief of disease as it might be; and feeling persuaded that its useful agency in this particular is not fully appreciated or resorted to, I am induced to report a few cases, which might serve the purpose of drawing attention to the subject.

In the following remarks, I shall confine myself exclusively to the uses of chloroform by inhalation as a remedial agent; and not allude to the great blessing of freedom from pain through its agency during operations, nor to the opportunity thereby afforded the surgeon of undertaking many cases, wherein, without such means, severity of pain, or risk of the effects of shock, might have checked his hand, and deprived the patient of the benefit of his art.

The first thing to be observed in the consideration of administering a remedy through the respiration, is the facility of application, and our absolute independence of the patient's will, power of swallowing, and condition of stomach; for, whereas in some cases the irritability of this viscus at once ejects every medicine we may give, leaving the sufferer unrelieved, so, in other cases, difficult or impeded deglutition altogether hinders us from the administration of physic. Another great advantage, almost peculiar, is the promptitude with which the effect desired can be produced.

The first case which I would bring before your notice is one of uncomplicated spasmodic asthma in an otherwise healthy man, of middle age, to whom I was called five or six years ago, when suffering from a worse than usual paroxysm. He was sitting in an armchair, with shoulders raised, and in the greatest distress imaginable; was living, as it were, with his chest full of air, yet nearly suffocated. The chest was resonant; but the lung-tissue was so affected as to be unable to expel the air it already contained, and receive a fresh supply. I hardly ever witnessed greater distress than at this moment; the patient had been seen by me in the morning, and was taking full doses of compound sulphuric ether. His residence was but a few yards from my own house, so I quickly fetched some chloroform, more quickly gave him complete relief without producing insensibility, and in a few minutes left him quite comfortable, and found him so the next day.

Since this case occurred, Dr. Hyde Salter's very able work on *Asthma* has been published, in which he says:—"One of the most powerful and speediest remedies which we possess for asthma, to which I should, perhaps, give the first place of all, is chloroform. Its marked physiological effects early suggested its appropriateness, and the result has fully justified the trial. I have not had many opportunities of witnessing its effects personally, because when asthmatic patients consult one they are generally not suffering from the disease at the time; but in the cases in which I have witnessed it, I have been very much struck with the completeness of the control which it exercises over the asthmatic condition, and with the absence of all danger in its administration, provided the asthma is of the uncomplicated spasmodic form. If the only source of dyspnœa is bronchial spasm, it seems to me that it may be as safely

given to an asthmatic in the height of a paroxysm as to a healthy person."

I at once proceed in the narration of another and different kind of case, my object being to pass these shortly in review; and then, from the conclusions we should arrive at, at the end of their recital, to express our opinion as to what class of remedies chloroform should rank in, and what variety of human ill it is most fitted to remedy.

Two years ago, a powerful young man, a cooper by trade, who had twice previously been under my care for delirium tremens, was rushing about the streets only partially dressed, wielding a large sledge-hammer, and vowing vengeance against a respectable inhabitant of the town who had offended him. After some trouble, two men closed upon him, took him to his home, and sent for me. I found him being forcibly restrained, and his room full of spectators attracted by curiosity. I sent out all who were likely to be of no service, and persuaded C. P. to come quietly to his bedroom. He was very tractable, as such patients generally are with one who shows that whilst he is kind he will be firm and determined. At my bidding, he took off his boots and trousers and got into bed. I took three opiate pills from my pocket, and, taking a cupful of water from his dressing-table, desired he would swallow the pills. With much civility, he took pills and cup from my hand, but tossed the former violently away, dashed first the water and then the cup into my face; drew me on the bed with one arm around me, and gave me a violent blow with the fist. All this was the work of an instant; and had not two men come up from below, I fancy it would have been quite an unequal contest, in which I should have come badly off. I left the house to fetch a restraining belt from my surgery, and before I could get back again, met a messenger to say that C. P. was running about the street in his shirt again, on the look out for his fancied offender. He was taken into his house once more; but we could do nothing with him until I had procured and quieted him with some chloroform; whilst he was under the influence of this, I put on the belt, made of a broad piece of web similar to that used for girths, having affixed thereto wristbands, also of web, lined with wash-leather, the whole secured by appropriate buckles. I continued for some little time to hold the inhaler occasionally before his face; and within an hour he was sufficiently quiet to take some medicine, and be left to the care of two men who volunteered their assistance. After taking a few doses of tartrate of antimony and opium, with plenty of cold water, he was pretty well, and in two days at his work.

I might enumerate and enlarge upon cases of convulsions in children, in whom life seemed endangered by the immediate effects of the fit, but was staved off by the effects of chloroform as the fits threatened or approached, until the removal of irritating matters from the intestine, or the lancing of gums, etc., has more permanently cured the cause; but it will be unnecessary to take up your time by reading these cases, since the good of their recital will be better shown by the report of other, and, to a certain extent, analogous cases; so I pass on to a well marked one of this type.

William B., aged 52, foreman in a brewery, but of very temperate habits notwithstanding his occupation, consulted me some few years ago for what I considered nightmare. He told me that every three or four weeks he would suddenly awake from an apparently disturbed sleep in which dreams had been frightening him; that after a few minutes he recovered, and was soon asleep again. He had some symptoms of indigestion, for which I prescribed, and advised some necessary alteration as to kinds of food, and hours when taken, and thought but little of his case. Some months later, his wife called upon me, and described a worse train of symptoms as seizing her husband, but exactly similar in mode of

attack; that is, he would be to all appearance in perfect health, go to bed quite well, and soundly to sleep; but that she would be awakened in the night by a loud snoring, and find her husband slightly struggling, from which, in a few moments, he would recover, awake to perfect consciousness, and in the morning be quite well, and ignorant of the slight temporary disturbance of the night. I again gave advice and medicine; and for some months heard no more. Then I was called to him one night as being in a fit; but in the quarter of an hour it took me to dress and get to him, he was so thoroughly recovered that I could hardly imagine there had been much the matter; there was no history of foaming at mouth, no bitten tongue, and in this short space of time no confusion of intellect. A few weeks later, I was again called in the night to see a most severe attack of epileptiform convulsions. There was great struggling of one side, the opposite limbs being paralysed; the face was drawn to one side; there was foaming at the mouth; the eyes were staring, and the pupils slightly contracted and inactive; the veins of the head and face were distended; the skin thereof was dusky, and its whole surface perspiring profusely. I gave directions for such remedies as were at hand; such as mustard poultices to nape of neck and feet, cold water rags to forehead, etc.; and putting the patient in a favourable position in the bed, I ran home for my inhaler and chloroform-case, which is ever kept ready "charged." This only took a few minutes. On returning, I found W. B. just as I had left him; wailing and lamentation in his family; and the neighbours giving up all as without hope. The struggles were as bad as ever; the stillness of opposite side as complete; urine was passing involuntarily; and there was the same cerebral and scalp congestion. After holding the chloroform before his nose and mouth about one minute, all this had given place to quiet sleep, in which he continued an hour, and awoke with headache and general uneasiness, which, however, soon passed off. That evening I saw him sitting up, and the next day he was at work. Stomachic and alterative medicines were given for a fortnight, the diet more stringently regulated, and he has continued in good health till this time.

In October of last year, I was summoned to H. T. J., a solicitor, in the prime of life and general good health, living in Ringwood. I found him writhing in agony from pain in the loin, through one groin, into the testicle of the corresponding side. He told me that he had felt some uneasiness in these regions for an hour or two; but had been suddenly seized with the more severe pain but a few minutes before sending for me. He had been sick. It was quite clear that a calculus was passing through the ureter. I applied hot fomentations; gave some ether and opium, which was quickly vomited, and an enema of warm water and laudanum; left a mixture of chloric ether and tincture of opium, with directions for the taking of it, and returned to my house; but in an hour or two was again called up to this patient, whose importunities for relief were loud and great, and who told me all my physic was vomited as soon as swallowed, as was everything else he took. I now had chloroform with me; after a few inspirations of which my patient was comfortable. I occasionally held the inhaler before his face, but did not render him unconscious; and after sitting an hour by his bedside, I left him with nothing to complain of but languor and a feeling of exhaustion.

These four cases serve as examples in proof of the above assertion concerning the great power, prompt effects, ease of application, and independence of the will of the patient. In one case he would not, and in another he could not, swallow; in a third swallowing was useless, as the stomach would retain nothing; and in a fourth, I wanted a rapid effect produced, but was ignorant of a means of producing it.

The surgeon obtains in chloroform nearly equal good to that which the physician experiences in his practice,

which he derives not only from its powers as a sedative and antispasmodic, but also as a depressant of muscular resistance. On one occasion I found its use of great service in the relief of retention of urine in a case of spasmodic stricture, enabling me to pass a catheter with ease, after having been for some time foiled in my attempts.

In a case of dislocation of the head of the thigh bone on the dorsum of the ilium in a strong, muscular, middle-aged patient, reduction was quickly effected, with only two persons to keep up extension and counter-extension whilst I directed the head of femur into the acetabulum.

About six years ago, I was just about to operate for strangulated hernia, after my brother-in-law Mr. Henry Smith, Staff Assistant-Surgeon Jessop, and I, had tried the taxis in vain. Chloroform was being administered during the most violent struggles and contortions of the patient's body; but when at length he was quiet, and had taken the knife in my hand, we found to our surprise the rupture returned, and, on recovering consciousness, the patient asked to get up to relieve himself, which he did very copiously. Other instances have occurred to myself, as to others, wherein the effects of chloroform by relaxing muscular fibre, enable one to reduce hernia or dislocations. Its effects in this way supersede the necessity of warm bath, venesection, tartar emetic, and tobacco enemata—means formerly resorted to for overcoming muscular resistance by the faintness to which each or all of them would give rise.

There is one other instance in which the surgeon derives great assistance from a moderate use of chloroform; viz., the removal of foreign bodies from the ears of the eyes of children. A child was once brought to me with a glass bead in its ear, every attempt to remove which the wriggling of the child baffled. A very slight inhalation of chloroform served to stop this, and the child once took out the bead with the spoon end of a directed. On more than one occasion I have been unable to remove a piece of steel from the cornea, because it was impossible to keep the lids sufficiently separated. Chloroform enabled the lad in each case to bear the eye being kept open, and the offending substance was easily taken away.

In midwifery practice, chloroform is of the greatest possible service. I have administered it frequently, at the request of patients, as an anesthetic on such occasions. It is not its use in this particular, however, that I allude to; but to its effects in relaxing muscular fibre, and thereby overcoming resistance. In many cases wherein I have administered it, I have been convinced of its great service in this particular, and that its use has singularly expedited matters. It will be found to have no effect whatever upon the involuntary muscular fibre of the uterus; the pains or propelling power continue of as forcible a character as before its exhibition; but the resisting power is so much lessened, that delivery is more quickly accomplished.

In the treatment of puerperal convulsions, I look upon chloroform as the sheet-anchor, and consider it has saved some lives in my own practice, as I doubt not it must have done very many in the hands of others. With an inhaler and plenty of chloroform in such a case, I trust that I am not too sanguine in asserting that I should not fear the result. The great danger to life in convulsions is congestion of the brain and its consequences—the effect of pressure upon the veins by the violent spasmodic contraction into which the muscles of the neck are thrown. No sooner does the inhalation of chloroform begin to operate upon the patient than this spasmodic action ceases, and with it, the effect to which it has given rise, and which is so much to be feared.

In February 1853, I had been some hours in attendance upon a primipara—a very lingering case, with, believe, more than usual suffering. Towards the close

of the labour, we were alarmed by the sudden accession of convulsions. All the muscles of the face, neck, and extremities were quickly set into violent action; the head was presently jerked backwards; the bitten and bleeding tongue protruded; the eyes became prominent, the face of dusky hue, and veins greatly distended. I sent in haste for my assistant at that time, Mr. Jessop, to bring forceps and chloroform. In a few moments there was an intermission of the convulsive action, but it quickly returned. As soon as the means of relief arrived, the patient was put under the influence of chloroform, and in a few seconds appeared in a calm sleep, during which interval of rest from spasmodic action I delivered her, by means of the forceps, of a living female child. Other fits followed in quick succession, but were, immediately on their approach, cut short by the inhalation of chloroform; the attacks were less and less frequent, and in a few hours the patient could be pronounced convalescent.

In August of 1859, a similar case occurred in my practice. I was attending a young woman with her first child, when she became violently convulsed, and had several severe fits, being quite unconscious during each short interval. Here also chloroform and speedy delivery by forceps were the means used to terminate the case, and equally satisfactorily to the mother; but the child was still born.

October 31st, 1861. I was called in by a woman, aged 30, pregnant for the fourth time, whom in previous labours I had attended, and no bad symptom had arisen during pregnancy or delivery. She was now near the end of her time, and was anasarctous, with albuminuria. Her condition and the recent accession of these symptoms convinced me that pressure upon the renal veins, causing congestion of the kidneys, was the cause; and I told her that her labour must be at once brought on, to which she demurred, saying she wished to wait a day or two. Her bowels being confined, I sent her some large doses of compound jalap powder. During the succeeding night, I was called up by the husband telling me his wife was in a fit. I went immediately; but there was no sign of convulsion to be detected. I passed a catheter through the os uteri, separating the membranes from their attachment for about an inch. In the morning, Mr. Pridham of Broadway, who was then assisting me, visited this patient, and soon sent for me in consultation. She had just then recovered from a convulsive fit, and was unconscious. Mr. Pridham had found the os dilated to the size of half a crown, soft and dilatable. He very quickly turned and delivered. We gave a turpentine enema, and soon left the patient better. An hour afterwards, a messenger came to say the woman was much worse. I attended immediately, and found her in one of the most violent convulsions she had yet had; countenance purple with venous congestion, etc. The administration of chloroform at once relieved this, and put her quietly to sleep. In the after part of the day she had another fit, whilst Mr. Pridham was with her; and as he considered it left much congestion of the brain, although the muscular spasm ceased, and taking into consideration the congested state of the kidneys and a full habit of body, he bled her largely from the arm, and purged her freely. Although in this complicated case, which terminated favourably and quickly, other treatment was very properly adopted, it yet serves to show how completely the sedative effects of chloroform will check convulsions, and, where these depend upon uterine irritation only, will enable the practitioner to subdue the effect, whilst he removes the cause. In the case we have just been considering, the complication demanded other and more energetic treatment.

It is now thirteen years since I first adopted the inhalation of chloroform as a remedial agent, and though, unlike subsequent cases, it failed in saving life, I had the satisfaction of affording great relief in one of the most

trying cases a surgeon can meet with—one of tetanus. In September 1849, a labourer, aged 44, was taken ill with symptoms of lockjaw a fortnight after having wounded his foot, between the first and second metatarsal bones, with the prong of a large fork, whilst digging potatoes. He thought nothing of this occurrence at the time; and, indeed, when I first visited him for tetanic symptoms, he seemed to have almost forgotten the circumstance. Various means for his relief were adopted by my late father and myself; but the only thing which gave him any comfort was chloroform, which I constantly administered as spasm approached; but this at last became continuous, and the administration of nourishment impossible; the diaphragm and muscles of the glottis became affected, and he died of suffocation. This case was fully reported at the time in the *Provincial Medical and Surgical Journal*; and, in my remarks, the failure of the chloroform in giving the more complete and permanent relief which I had anticipated was attributed to the fact that the seat of irritation in tetanus is in the spinal system, over which chloroform does not exert the same influence it does over the cerebral.

After very many instances in which I have used chloroform in the treatment of disease, my first impressions of its applicability to a certain class of cases have been fully confirmed; and I think we may rank chloroform by inhalation as our best sedative and antispasmodic, and resort to its use not only in the cases where the effect of such a medicine is quickly and in great power demanded, but always depend upon its efficacy, as is now so generally done, whenever we may have to overcome muscular resistance, saving our patients from the debilitating depressants in use before chloroform was resorted to; adopting it especially in the treatment of convulsions arising from reflex irritation, since physiology, pathology, and practical experience combine to recommend it.

#### RARE CASES IN MIDWIFERY.

By EDWARD COPEMAN, M.D., Physician to the Norfolk and Norwich Hospital.

[Continued from page 558.]

CASE XXI. *Acute Puerperal Disease.* I was summoned by evening train on Monday, August 4th, to a lady, aged 20, who had been confined with her first child the day before. She was a healthy young woman; was married nine months previously; and immediately became pregnant, her labour coming on a day or two within thirty-six weeks from the date of her marriage. She had been ailing two or three days, but her labour was completed in a natural way on Sunday evening, August 3rd. She got some comfortable sleep in the night; but, early next morning, began to complain of uterine pain; and this increased so rapidly, that her surgeon, a very experienced practitioner, applied ten leeches to the abdomen, and a succession of bran poultices; but the symptoms became so urgent that he requested her husband to send for me, in order that by a consultation, no means of securing her safety might be omitted.

I arrived at about 10-30 P.M. The leech-bites were still bleeding, and the pain had somewhat abated; but the abdomen was still excessively tender in and near the uterine region; every movement of air in the bowels hurt her; she was lying on her back, and could not alter her position at all without pain, and her pulse was nearly, if not quite, 140 in a minute. She was thirsty, and there was some headache; the lochia were flowing; no milk secreted; countenance expressive of considerable anxiety and suffering, but there was very little disturbance of her mental functions. She had passed urine several times. Although, with the exception of the very unfavourable state of the pulse, I did not apprehend any immediate danger, there could be no doubt that she was