ON THE ADMINISTRATION OF CHLOROFORM IN MIDWIFERY, AND AS A SEDATIVE OF UTERINE PAIN GENERALLY.

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IN February 1848, I published, in the *Lancet*, the result of my experience respecting the administration of Chloroform in irregular and operative labour, in dysmenorrhœa, and in uterine pain generally; and on that occasion I stated that it had proved, in my hands, a most valuable therapeutic agent. During the two years which have since elapsed, I have been constantly in the habit of administering Chloroform in these varied conditions, and am able to confirm, in every respect, the statements which I then made; no single event having occurred in my practice, calculated to modify the opinion which I then expressed, respecting its great practical value to the accoucheur and to the uterine pathologist.

Various fatal cases, however, have been since published, in which death was so evidently the result of the employment of Chloroform, that we cannot but admit its inhalation to be attended with a certain amount of risk. That this risk is very slight indeed, is proved by the very small number of fatal cases recorded, as compared with the innumerable instances in which it has been administered for surgical purposes; and by the fact that, in many large hospitals in London and Paris, it has been given, ever since its first introduction, in all cases of operation, to the full anæsthetic extent, without any untoward event having been observed. Such being the case, I do not think that the fatal instances that have occurred, imply such an amount of danger as to induce us to forego the benefit of Chloroform, when it is likely to be therapeutically useful, or when its inhalation will save a patient from the pain of an operation; or even to refuse our sanction to its inhalation in a *slight* operation, if the patient shrink from any pain, and is willing to incur the very trifling risk attached to its administration. The very greatest care, however, ought clearly to be shown, and I cannot too decidedly urge the precaution on which I laid so much stress two years ago,—viz, that of seeing that the Chloroform vapour is mixed with a sufficient quantity of atmospheric air for the purposes of respiration; so that, on the one hand, asphyxia may not be produced; and that, on the other, the sedative effect of the Chloroform on the nervous centres may take place gradually, so that the latter may not be instantaneously paralysed by the *sudden* presence of a large quantity of Chloroform in the system. It is for this reason that, like Dr. Simpson, I generally prefer, for inhaling, a thin cambric handkerchief, to the various inhalers now in use. The former appears to me to admit more easily of gradual, progressive chloroformization. Extreme caution in the first stage of inhalation is the more necessary, as, in most of the cases of death from Chloroform that have been recorded, it seems to have taken place after a few inhalations only, and from a quantity of Chloroform, which appears incredibly small (half a drachm, or a drachm) to

those who are in the habit of using it, who continually find it necessary to give four or five times that amount, in order to produce complete anæsthesia.

Within the last eighteen months, I have myself taken Chloroform to the full surgical extent, on three occasions, with perfect success ; twice for dental operations, and once for the extirpation, by Mr. Fergusson, of a fatty tumour from the shoulder. On each of these occasions, but especially on the two first, when a less perfect inhaler was used, I distinctly and painfully felt the sense of suffocation occasioned by the absence of a due supply of atmospheric air. This error is the more dangerous, as all sense of the wants of the economy is lost as soon as anæsthesia commences, and the patient may then be asphyxiated by the absence of oxygen, without any sense of suffocation being experienced or manifested.

I still administer Chloroform in four classes of cases. I. In Irregular but Natural Labour. II. In Operative Labour. III. To facilitate Operations on the Uterus. IV. To subdue Uterine Pain in dysmenorrhœa, etc.

I. In NATURAL LABOUR, I seldom resort to the inhalation of Chloroform, unless it be occasionally to facilitate its last stage, or to allay some morbid conditions of the nervous and circulatory systems, which may be interfering with the progress of parturition. The pains of labour are sometimes partially arrested, diminished, or rendered irregular and inefficient, by fear, impatience, want of self-control, or by long-continued suffering. When this is the case, Chloroform generally exercises an all-but-magical effect. Under its influence, all nervous excitement is soothed, the pains gradually become more regular, powerful, and efficient, and the labour once more progresses normally. This return of the labour pains, and their regularization under the calming influence exercised by Chloroform on the brain, probably explains the increase in their intensity, noticed by some writers, on its first administration ; and thus is explained the apparent discrepancy of different observers, on which so much stress is laid by the opponents to Chloroform. If the pains are arrested or modified by nervous reaction, they return ; if, on the contrary, they are too violent and prolonged, as is sometimes the case in the latter stages of parturition, when the soft parts are rigid and irritable, the intensity of the pains diminishes on the withdrawal of the excess of stimulation.

The disordered state of the circulation, and the congested condition of the capillaries, which are often observed in the cases to which I have alluded, also give way, in a most remarkable manner, to the calm produced by the inhalation of Chloroform. This is so much the case, that since I have had recourse to it, I have never found it necessary to bleed from the arm during labour ; the inhalation of Chloroform having always been indirectly efficacious ; even in some cases in which the cephalic congestion was so great as to make me fear convulsions.

Although I never hesitate, as will be perceived by the above remarks, to give Chloroform in natural labour, whenever I think it may be of use, I do not urge my patients to take it, merely as a remedy for pain. If they wish to avoid the pangs of parturition, and are anxious to inhale Chloroform (as I most certainly should, in their condition), I do not object to its administration. Firmly believing its careful inha-

lation to be innocuous in parturient women, I do not see how I can object; but I never press them to resort to it, not feeling called upon to interfere with a natural function, even to allay pain, if my patient be willing and able to bear it.

II. In OPERATIVE MIDWIFERY, I continue to derive valuable assistance from Chloroform. The cases in which I have resorted to its use, have been, exclusively, turning and retained placenta. In consultation and dispensary practice, the accoucheur occasionally meets with instances, in which the placenta has been retained for some hours, before he sees the patient. In these, and in the more difficult forms of turning, Chloroform very much simplifies the operation, by rendering the patient unconscious of pain, and perhaps by slightly relaxing the rigidly-contracted uterus. In craniotomy, the pain inflicted on the mother is generally so slight, and the duration of the operation is often so prolonged, that the inhalation of Chloroform is scarcely, if at all, indicated. As I am also one of those accoucheurs who very seldom find the application of the forceps necessary, or even warranted, I have scarcely had an opportunity of judging as to the advisability of placing the patient under the influence of Chloroform, prior to their use. I should, however, feel inclined to give a negative opinion, as either the maternal parts are sufficiently roomy to admit of their application without pain, or they are not; and, in the latter case, the danger of injury to the mother would only be increased by her unconsciousness.

I have only once had to contend with post-partum hæmorrhage, after the administration of Chloroform, during or after labour; and in the case in question, the patient, the wife of a medical practitioner, was labouring under disease of the heart, unknown either to her husband or to myself. Her history is interesting in a scientific point of view, but very melancholy. She was a young, delicate, lymphatic female, twenty-three years of age; and I was called to her by her husband (August 1848), in the early stage of her first labour, owing to severe hæmorrhage having occurred. I detected a partial placenta presentation, and arrested the hæmorrhage by rupturing the membranes. The labour progressed favourably, but was rather tedious and painful during its latter stage, owing to the resistance and narrowness of the soft parts.

Under these circumstances, and with the entire approbation of the husband, she inhaled Chloroform, at intervals, for about an hour. Parturition was thus easily accomplished; and the placenta was expelled within a few minutes. The uterus contracted, the uterine bandage was properly applied, and all seemed to be going on normally, when, about ten minutes later, as I was washing my hands at the bed-side, I perceived, on looking at the patient, from the paleness of the lips and face, that hæmorrhage was probably taking place. I immediately unfastened the bandage, and, finding the uterus redilated, at once introduced the hand into its cavity, and found it filling with blood. With the left hand placed externally on the abdomen, I manipulated the uterus, to arouse its contractions; and, having passed the tube of an enema syringe, which was fortunately at hand, into the uterine cavity, freely injected cold water for some minutes. Under the influence of these means, the uterus contracted firmly on my hand, which I withdrew gradually, and no further hæmorrhage took place. I subse-

quently paid more than usual attention to this lady, as puerperal fever was then reigning epidemically; and I was fearful, lest the kneading of the uterus, to which I had been obliged to resort, might be followed by inflammatory reaction. Nothing of the sort, however, occurred; and all continued to progress favourably until the twelfth day, when she had an attack of indigestion, followed by fever, after taking a small quantity of animal food for the first time. She soon recovered, and appeared to be progressing so favourably, that, a few days later, I left her entirely to her husband's care. On the twenty-first day after her confinement, she again tried, in the afternoon, for the second time, animal food—a mutton chop; and, although she subsequently complained of considerable pain in the region of the stomach, she was cheerful and talkative during the evening. At eleven, her husband went into an adjoining room for a few minutes, but hearing a noise of choking, rushed to his wife's bed, and found her sitting up and gasping for breath. In less than a minute, she died in his arms, without having been able to utter a word. A careful *post-mortem* examination was made by my friend Mr. Avery and myself; but no morbid condition of any description was found in any region of the body, with the exception of the heart. This organ was enlarged, its cavities were dilated, and its walls softened. The uterus was perfectly healthy, and of a natural size.

In this case, death appears to have been the result of syncope occurring, under the immediate influence of laborious digestion, in a naturally delicate female, weakened by loss of blood, and labouring under dilatation of the cavities of the heart. It is well known to pathologists, that syncope is often attended with a fatal result, in softening and morbid dilatation of the heart. Indeed, in such cases, it is dangerous to bleed from the arm, to any great extent, lest fatal syncope should ensue, from the inability of the diseased and weakened heart to contract on the mass of blood which chokes its cavities.

The hæmorrhage which occurred after delivery, although not very considerable (for it was at once arrested), no doubt contributed to the subsequent fatal result, by increasing the debility of the patient; but that hæmorrhage can in no way be attributed to the use of the Chloroform. Post-partum hæmorrhage is one of the common accidents of midwifery, which every practical accoucheur meets with in women who have never taken Chloroform, and there is no evidence to prove that it is more frequent in those who have inhaled it. My own experience goes directly to negative such a proposition. This case is the only Chloroform one in which I have seen it, during the three years that I have administered the agent; whereas I have, during that time, been repeatedly called to cases in which it has occurred in patients, who had never inhaled Chloroform.

Moreover, females who labour under disease of the heart, are peculiarly liable to hæmorrhage after delivery. I recollect a remarkable illustration of this fact, which occurred in my wards, whilst I was *Interne* at the hospital of La Pitié, Paris. A woman, aged 34, multiparous, who was under treatment for heart disease (mitral insufficiency, hypertrophy, and dilatation), was found to be pregnant, and was consequently retained in the hospital for her confinement. One morning I left her

in perfect health, at ten o'clock A.M., and found her dead on my return, at four P.M. Labour had come on, and the child and placenta were expelled in a few hours; but, immediately after the expulsion of the placenta, irrestrainable hæmorrhage followed, and she died in a few minutes. The congested state of the venous system, and especially of the portal veins, explains this tendency to uterine hæmorrhage, in females in whom the circulation is impeded by insufficient heart-action.

I would here remark, that there is a very unphilosophical tendency in the opponents of Chloroform, to attribute any accident that may occur to parturient females, to whom it is administered, to the action of Chloroform, as if a certain proportion of accidents did not occur in midwifery practice, whether Chloroform be used or not. Thus I have heard it argued, that Chloroform may lead to puerperal mania, because Dr. Webster stated, at the Westminster Society, when Dr. Murphy's valuable paper on Chloroform was read,¹ that he had seen three cases of puerperal mania, at Bethlem Hospital, in which Chloroform had been administered. The question is, whether these females would not have been equally seized with puerperal mania had they not taken Chloroform? If it could be shewn, that since the use of Chloroform in midwifery had become more frequent, the annual number of cases of puerperal mania received at this hospital had very greatly increased, the argument would then be valid: but in the form in which Dr. Webster notices the fact, it is altogether valueless.

When administering Chloroform in simple midwifery, I never give it to such an extent as to annihilate pain, but merely so as to allay or deaden it; in a word, I do not attempt to render the patient totally unconscious of her sufferings, but merely to render them bearable. In operative midwifery, the anæsthesia must necessarily be pushed further, that is, to the surgical extent, as the intention is then both to render the patient unconscious of what is done, and to obtain the muscular relaxation to which this stage of anæsthesia gives rise.

III. In UTERINE EXAMINATIONS and OPERATIONS, Chloroform is occasionally very useful to me; though, as a rule, no instrumental examination of the uterus need be painful, if an instrument proportioned to the degree of dilatability of the vaginal orifice be used, and proper gentleness be observed. There are cases, however, in which the fears of the patient are so great, that the use of Chloroform may be desirable; there also cases in which the uterus, its neck, and even the vagina, are the seat of such intense neuralgic sensibility, that interference of any kind is all but impossible, unless the patient be under the influence of Chloroform.

I have now under my care a case of this kind, a married lady, aged 26, who for the last four years has been a martyr to neuralgia of the most intense and agonising description. The neuralgic affection has occupied principally the branches of the fifth pair, the nerves of the uterus, and occasionally those of other parts of the body, and has evidently been connected all along with extensive ulcerative disease of the cervix uteri. The uterine disease appears to have followed an abortion some years ago, and had been totally overlooked until she consulted me. The

¹ See LONDON JOURNAL OF MEDICINE, vol. for 1849, p. 1084, 1170, for the discussion on, and an abstract of, Dr. Murphy's essay: vide also vol. for 1850, p. 90.

entire pharmacopœia had been ransacked, and the most powerful sedatives had been administered for years, without any favourable result. A careful digital examination of the uterus having brought on a frightful neuralgic attack which lasted a fortnight, I determined to put her under the influence of Chloroform, and thus was able to bring to light a very extensive ulceration of the cervix. This organ was lacerated, and the seat of great inflammatory enlargement. I have now given this lady Chloroform to the full surgical extent for fourteen consecutive weeks, that is fourteen times, and she has seldom taken less than half an ounce on a handkerchief, and sometimes more. I was very unwilling thus to continue its administration; but, until within the last week or two, she has never been able to bear the slightest interference whilst conscious, not even an injection of warm water. The disease, however, is now all but cured, and the morbid sensitiveness is fast disappearing. She has had no regular neuralgic attack for the last two months, and will evidently get quite well, both of the local disease and of the neuralgia which it occasioned. I have not been able to discover, in this patient's mental or general state, any detrimental effect whatever from this lengthened administration of Chloroform. It occasionally gives rise to sickness, but that is all: nor does there appear to be any difference in her subsequent condition, whether she have taken much or little; the quantity inhaled in order to produce the same anæsthetic effect varies, without our being able to discover the cause. Sometimes she becomes insensible after a couple of minutes' inhalation; sometimes after eight or ten only. This case appears to me to prove the general innocuity of Chloroform, even when taken in large doses and for a continuance. The last time it was administered, it was for the application of leeches to bring on menstruation, or to supply its deficiency, the menses being delayed to her great distress; and although she was kept under its influence for half-an-hour, there was even less subsequent distress from sickness than usual.

IV. In UTERINE PAIN from dysmenorrhœa, cauterisation, or from any other cause, Chloroform continues to prove, in my hands, a valuable medicinal agent, either when given by inhalation, or internally as a medicine. It is, however, capricious in its action, and not to be depended upon in every case, especially when administered internally; its virtues as a sedative of pain are also much more decided when inhaled than when taken. The most propitious moment for inhalation with this view, but the most inconvenient to the medical practitioner, is at bed-time; it will often insure freedom from pain, and a night's rest, when every thing else fails. For this effect to be obtained, however, the patient must remain perfectly quiet on recovering consciousness; and this is the reason that night is so much preferable to day for inhalation. If the patient who has inhaled Chloroform be once thoroughly roused, the sedative effect frequently passes away.

When given internally, twenty, thirty, or forty minims of Chloroform should be mixed with mucilage, or with the yolk of an egg, previous to water being added, so as to be held in suspension. If a little camphor be added to the Chloroform, which soon dissolves it, the solution will also mingle with water.

Chloroform may be injected into the rectum in any of these shapes, and if it be retained, its sedative effect is effectually produced; the rectal

mucous membrane, however, is so extremely sensitive, that it generally contracts, and expels the fluid containing the Chloroform.

In conclusion, I consider that my experience of Chloroform during the last two years, as likewise the published experience of others on the subject during that time, fully corroborates the opinions I formerly advanced respecting its great value, not merely as a means of lessening pain, but as a therapeutic remedy in connexion with its anæsthetic powers. I must also remark, that all that has been written against its cautious and exceptional use in midwifery, has been written by persons who had not used it, or at least not sufficiently to entitle them to give an opinion on the subject. Indeed, they appear merely to sustain a "thesis" founded on prejudice, and not to reason from their own experience.

At the same time, although thus supporting the use of Chloroform, I feel bound to repeat, that the fatal cases which have been published prove that its inhalation is not *altogether* free from danger to life. Neither does it appear that this danger can be avoided by the greatest caution; death having followed, as I have already stated, the administration of an insignificant dose in the hands of experienced practitioners. It would indeed seem as if, in the cases to which I allude, Chloroform had acted as a deadly poison from the first moment of inhalation. These cases must, therefore, teach us not to resort to it without a good and sufficient reason, and not to urge it on unwilling patients. For my own part, I am perfectly prepared in my own person, again to run the risk, such as it is, should I be again called upon to suffer a painful operation; and, consequently, I feel no hesitation in giving it to any one else who, like myself, may wish to avoid pain at a very trifling risk.

We must not forget, however, that the dangers of Chloroform inhalation have only been exemplified in surgical cases, and that no parturient woman has died during, or from its administration. They are, in reality, less exposed than surgical patients, as anæsthesia need not be carried so far; moreover, the entire economy is during labour in such an increased state of stimulation, that the vitality of the patient would, I think, be much less easily subdued, than in one who is depressed by the dread of a surgical operation.

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