REMARKS

ON

THE USE OF HYDRATE OF CHLORAL IN AFFECTIONS OF THE NERVOUS SYSTEM.

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I HAVE used chloral extensively during the past three months. All the patients to whom I gave it suffered from affections of the nervous system, complicated with mental symptoms. The latter peculiarity causes my experience to be a special and limited one; but, as we all have certain cases to treat in common, and as that class of the neuroses in which my experience has lain seems to be that in which the beneficial effects of chloral are most apparent, I shall endeavour to give a succinct account of my results.

I have given it in forty cases altogether in doses varying from ten grains up to eighty grains for the purposes, in different cases, of procuring sleep, of calming nervous irritability and restlessness, of subduing maniacal fury, of allaying extreme depression of mind, of stopping the coming on of an attack of mania, for neuralgia, and for chorea. To some patients I gave it in single doses, to others every night, and to others at regular periods during the day, according to the effect I hoped to produce. The effects of the medicine under all these circumstances cannot of course be stated categorically, so I must systematise them somewhat.

Affections for which given.—I gave chloral in seven recent cases of acute mania; in thirteen cases of chronic mania with persistent excitement; in three cases of melancholia; in three cases of great excitement from epilepsy; in four cases of general paralysis; in eight cases of mere sleeplessness; in one of neuralgia; and in one of chorea. Of the seven cases of acute mania uncomplicated with any apparent organic affection of the brain, my object, in three of them, was to procure sleep; and, by means of forty-grain doses, I did so in every case. Every dose did not take effect; a patient sometimes not sleeping at all one night after getting the medicine, who had slept quite well for many successive nights previously with it. This was decidedly more exceptional, however, than the same phenomenon with the other drugs which I had been in the habit of using. In four of the cases, I gave thirty-grain doses three times a day to abate excitement, violence, and noise; the result was much less uniform than the procuring of sleep. If the patient seemed to resist the sedative influence of the drug, it often had but little effect; sometimes, on the other hand, they would sleep quietly for an hour or two after getting the medicine. Sometimes the effect was precisely similar to that of whiskey. All the ordinary signs of drunkenness were present. I sometimes increased the dose to forty grains, and this had a decidedly greater effect and a more lasting one: and the shortness of time during which chloral caused any effect on those cases is a distinct peculiarity of this substance. The drowsiness or the sedative effects during the day seldom lasted much more than three hours; after that time, the patients usually became as they were before. This was not invariable, as in two of them I certainly thought that a more permanent good effect was produced; and, during the time the patients were under its influence, there was never any distinct tendency to make them more sane in mind, if I may so speak. That is, the incoherence of speech, inability to answer questions, or want of memory, if present, did not disappear, even though the patients might be sitting quietly and apparently looking more rational. When it was given at night, the patients often slept ten or twelve hours with same dose which only produced effects for three hours during the day. One of the patients was a puerperal case, and all the good effects of the drug were rather more marked in this than in any of the others. In not one of those patients—and this is a most important point—did I notice the slightest tendency to refusal of food, dryness of mouth or tongue, or constipation, that I could attribute to the chloral; and the pulse was strengthened in two-thirds of them. In all such cases, the taking of abundance of food is the first and great thing to be attended to for ultimate recovery. The number of pounds of flesh an acutely maniacal patient will lose in a week is quite incredible to those who have not paid much attention to the subject. Such a patient is like a steam-engine going at ten times the speed at which it was constructed to run. It breaks down, or irretrievably ruins itself in a very short space of time. In some critical

cases, we used to be in terror of disturbance of the digestive system if we gave opium or almost any other sedative. This fear we need not have in the slightest degree with chloral. I have now a patient with acute mania who has had thirty grains of chloral three times a day for more than a week, and she takes her food admirably—in fact, she never took it well till she got the chloral; and during one day I stopped it, just to see how she was without it, and she did not take her food nearly so well. I have been thus circumstantial in relating what chloral did, and what it did not, in those recent cases of acute excitement, because such patients are the most curable of all if properly treated, and because those are the cases which either you or I have to treat. I think you will see how important it is to have an agent by means of which the sleeplessness which often causes, generally accompanies, and always aggravates the first coming on of insanity, can be met and overcome with certainty and without risk; and it seems clear that, by means of its sedative effects, given repeatedly and judiciously during the day, short attacks of maniacal excitement may be tided over at home, and some patients kept out of lunatic asylums altogether. Even though it is granted that chloral exercises no direct curative influence over the disordered brain-function, yet we know that some such cases run a definite course, and soon tend naturally towards recovery if the strength be kept up during the attack; and here we have an agent which acts on cerebral function, yet leaves intact the nervous ganglia which regulate nutrition and the reparative function.

In the excitement of chronic mania, and the still more acute excitement of epilepsy and general paralysis, chloral requires to be given in larger doses to be effectual. A drachm is often required; and the only occasion in which I saw a drachm-dose to have no effect at all was when given to an epileptic, acutely maniacal after fits. In general paralysis, we have perhaps the most furious and dangerous excitement, and the most persistent sleeplessness of any form of insanity. In half the cases, opium only aggravates the excitement, and takes away the appetite besides. Before I used chloral, the only form of sedative I trusted in was a combination of cannabis Indica and bromide of potassium; but in a case of general paralysis in the first stage of the disease, with the most violent excitement and entire sleeplessness for a week previously, where I should not have ventured to have given a sufficient dose of any drug with which I am acquainted, drachm-doses of chloral procured ten, twelve, and fourteen hours' sleep every night regularly, and seemed to have no ill-effect.

For mere sleeplessness, without any particular excitement, I found doses of twenty grains to be sufficient in most cases, and generally thirty grains cause sound sleep. I have never failed to overcome this symptom with chloral. A slight giddiness and confusion in the morning on rising were the very worst symptoms I observed to follow its use, and that only in two cases out of eight.

The case of neuralgia, for which I gave chloral, was associated with sleeplessness; and I found that forty grains were required to cause sleep. In the morning the pain was not so severe, but was still present. After continuing the medicine for two nights, the pain disappeared. In the case of chorea, the patient was recovering from severe chorea with mania after rheumatism, and had a slight relapse, for which I gave, during the day, a dose of twenty grains, with the effect of stopping the choreic movements to a great extent. They commenced again when she went to bed, and the patient could not sleep (and this had been the case for three nights previously). I gave her forty grains of chloral. She slept soundly; the chorea ceased, and did not return in the morning, while her temperature, which had risen to 99.2 deg., was down in the evening to 97.30 deg.

For the depression of melancholia, chloral had no good effect in three cases in which I gave it; but for the sleeplessness of all three, it was most effectual in thirty-grain doses. One of them made a most unusually quick convalescence, which I attribute to the sleep caused by the medicine. She had an apparent increase of appetite. My friend Dr. Tuke has also noticed this effect of chloral in a case where there had been an absolute refusal of food previously. In the other two cases, notwithstanding the sleep procured, no good effect on the depression of mind was noticed.

Doses Required.—I have already given part of my experience in regard to the doses used. The rule I now follow is to begin with twenty grains where the symptoms are more slight; and with thirty grains where they are more severe. In the former class of cases I have often to go up to thirty grains, and in the latter nearly always to forty, and often to sixty grains. To give a general idea of the certainty with which chloral acts, I have gone through the records which have been kept by Dr. Campbell and myself as to the effect of the various doses, and I find that, out of fourteen cases where I began with twenty-grain doses, it produced the effect I wished nine times; out of eighteen occasions in which I began with thirty grains, this effect followed ten times; out of

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sixteen cases where I reached forty-grain doses, this effect followed eleven times; and there was only one failure of the expected result in fourteen cases where fifty- and sixty-grain doses were employed. I never had any ill result from the larger doses. On no occasion was sickness produced, except in one, and that was doubtful; for, whether that man were taking the medicine or not, or whether he were taking forty- or sixty-grain doses, he was sometimes sick, having been a frightfully heavy drinker before becoming insane. I cannot say that I have noticed any particular relation between previous intemperate habits and the dose of chloral needed to cause sleep.

Effect on Temperature.—There is much diversity of opinion as to the effect of chloral on the temperature of the body. Many observers have noticed that it seemed to reduce it with great certainty and rapidity in certain feverish affections; others have not obtained at all the same results. In the insane, I may observe that the morning temperature is higher than in the sane; but the great and distinguishing peculiarity is that the evening temperature rises in the insane. In one form of insanity (general paralysis), the evening temperature, instead of being lower than in the morning, as in health, is in every case higher, and in certain exacerbations of the disease becomes very high indeed. Those facts were deduced by me from an extensive series of experiments, and have been since confirmed by other observers. I had also made a large number of careful observations as to the effect of opium, bromide of potassium, cannabis Indica, alcohol, and food, on the temperature of the body when given in various forms of insanity, so that I was in a position to compare the effects of chloral with those agents. On going through the records of the cases in which chloral was given, and in which the temperature was noted, I find that in some of them the temperature kept up as high after the administration of this medicine as it had been before, while in certain other cases the temperature seems to have been decidedly lowered. In general paralysis chloral does not seem to have the power of reducing the abnormally raised evening temperature, while in simple mania it certainly does often do so. And this I consider one of the strong points in favour of chloral. I have found that substances such as opium, which raise the temperature, tend to reduce the weight—in other words, to interfere with the general nutrition of the body; while bromide of potassium in moderate doses appears to reduce the temperature, and the patients fatten while taking it. Alcohol in large doses also greatly reduces the temperature; and practical experience had long before shown the good effects of stimulants in acute insanity. If we consider the matter, this is as might be expected. The abnormal action of the brain, causing increased heat, burns away the tissues. Any substance acting on this abnormal action so as to reduce the heat more to its proper standard in health, is likely to do good. In one case of puerperal mania, the patient's temperature was 100 degrees when she went to bed. She had forty grains of chloral, slept eight hours, and at ten o'clock next morning it was 98.2 degrees; and this is merely one example.

I made some special observations on seven cases of chronic and remittent mania, on whom I had observed the effects of opium, bromide of potassium, and alcohol. The doses I gave to each were one drachm of tincture of opium, one drachm of the bromide, two glasses of Scotch whiskey, and first thirty grains, then forty grains of chloral; taking the temperature before giving the dose, and then an hour after it. I found that chloral lowered the average temperature, taking all the cases together; but not to any great extent, not nearly so much so as the alcohol. In some individual cases it did so strongly, while in other cases it was raised, and this seemed to bear no relation to the drowsiness or sleep produced. I confess that I am as yet quite unable to tell all the conditions under which chloral affects the temperature of the body. I took a dose of fifteen grains, which raised my temperature half a degree. It caused a sense of drowsiness, fullness of the head, and stupidity. Those effects quite passed off in two hours.

My experience of chloral, therefore, from having given it in forty cases of various forms of insanity, may be thus summed up.

1. It has proved a most safe and certain sleep-producer. It seems certain that by it we can compel sleep in any case.

2. By means of this property, attacks of insanity may probably be warded off in some cases.

3. Its action in abating and soothing excitement is more uncertain than its sleep-producing power, and lasts a shorter time than that of any signally powerful drug; but it is most valuable in certain cases, especially in some recent and curable ones, where formerly we should have been afraid to give opium. It has no directly curative action, but it evidently could be so employed as to tide over short attacks of insanity, and to prevent certain cases from being sent to lunatic asylums.

4. Whether it does good or not, it never does harm. In this respect it is the very king of all narcotics.

5. Its effect on the temperature of the body is variable in different cases, and in the same case at different times; but generally it is to reduce the temperature slightly, taking the average of a number of patients. It differs from opium in this respect, which raises the temperature; but the reduction caused by chloral is not nearly as great in maniacal excitement as that caused by alcohol in large doses.

6. It should be given to subdue brain-excitement in doses beginning at twenty or thirty grains, repeated from three to five hours. To produce sleep in great excitement, from forty to sixty grains are required, the latter dose not failing in one per cent. of the cases.

CASE OF COMPLICATED LITHOTOMY SUCCESSFULLY TREATED.*

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R. G., aged 36, was sent to me by my friend Mr. Hirst, of Boyne Hill, in February last, on account of some bladder-symptoms and a fistula in the perinæum, complicating a stricture. The stricture admitted No. 5 bougie, and on the instrument reaching the bladder, it impinged on, as I thought, two rough calculi. Two false passages which existed in the neighbourhood of the stricture rendered it impossible to get an instrument with the sharp curve of the ordinary sound into the bladder. Examination by the rectum discovered a prostatic tumour, about the size of a walnut, situated posteriorly and slightly to the left of the urethra—in fact, directly in the way of the lateral incision. From the hardness of the tumour, I thought it might be a prostatic calculus. Examination of the urine shewed it to be free from albumen and tube-casts; but pus and oxalate crystals existed in abundance. The patient also drew my attention to a very profuse purpuric rash which covered his legs, and I found that his gums were spongy.

His sufferings were very great; he had not been able to work for many months; the stricture had existed for twelve years; and the fistula, which consisted of two tracks leading from behind the triangular ligament forward to the posterior edge of the scrotum, and the purpura had existed for many months. Altogether, the conditions were nearly as unfavourable as it is well possible to imagine. Crushing was entirely out of the question; and I resolved to cut. But there was before my eyes the fear of hæmorrhage, owing to the purpura. The patient, therefore, went back to the country, continued the appropriate treatment employed by Mr. Hirst, and returned in about a month somewhat improved in health.

On the morning of March 2nd, when I had resolved to operate, he presented, however, a fresh crop of purpuric rash; a circumstance which very nearly prevented me from proceeding: but, with the kind assistance of Messrs. Hirst, Hollings, G. F. Naylor, and other friends, I accomplished the following operation. Having passed a small curved staff into the bladder, I passed a probe down the fistulous track nearer the middle line, and, slitting up its posterior third, my knife entered the staff as if for perinæal section, divided the stricture, was then turned as if for the lateral incision, and passed on to the prostate. Here I found a little difficulty in keeping the knife in the groove of the staff; but, with a little care, I passed it into the bladder, cutting through an abnormally resisting structure. Following with my left forefinger, I at once recognised this stricture as a very large instance of the prostatic myoma, described by Thompson and Virchow; by the removal of which in certain cases, Sir William Fergusson has recently added something new to the operation of lithotomy, and not a little to his already immense reputation for skill and daring in operative surgery. My finger next recognised that, instead of two stones, the bladder was occupied by one large calculus of an oblong ovoid shape, and with a circular constriction in the middle, which had conveyed to me the false impression of the presence of two calculi; had I been able to introduce a sound into the bladder, I might have avoided this mistake. The calculus proved to be a mulberry specimen, weighing five hundred grains. Introducing a probe-pointed bistoury along my finger, I extended the lateral incision through the tumour to an extent which I thought needful for the extraction of the stone; and the result was, that I either completely or almost completely bisected the tumour, which was very resisting, and projected a good deal into the bladder. The removal of the stone was not difficult, but needed a little dragging. After its removal, examination of the wound shewed me that the segments of the tumour had been partially dislodged, that it was capsulated and might be removed. I was strongly tempted to attempt its removal; but, having waited a few minutes and found that there was no bleeding, I hesitated to run further risk, and remarking that the section of the tumour might

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