evening to advise others to do—Wipe out of your surgical literature and your surgical practice the words "passive motion," and substitute for them, on every occasion, the words "masterly inactivity," and you will find that you will have made a great and genuine surgical advance.

REMARKS ON AN EPIDEMIC OF DIPHTHERIA, WITH SPECIAL REFERENCE TO ANTITOXIN TREATMENT.

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The following remarks deal in a general way with an epidemic of diphtheria that has been raging in Horsham and the surrounding district, with special reference to the antitoxin treatment.

For some years, Horsham had been practically free from the disease, till in July 1898 a case occurred, and since then, considering the population, a very large number has appeared.

This first case was one of laryngeal diphtheria of great severity. It was found impossible to ascertain how the child in question became infected, and though it was apparently the source out of which the epidemic has grown, it may be some convalescent visiting patient infected others than this case.

Without going into any wearying statistics, I may say that from the first case in July 1898 to the end of June 1899, I have treated 106 cases of diphtheria (66 in hospital and 40 in private), of whom 2 have died. The small mortality is attributable mainly to the early and vigorous use of antitoxin, but also in part to the general mildness of the epidemic. I am, of course, aware the figures given cannot be accepted implicitly unless positive bacteriological proof can be shown for each case. This, I cannot do, but I can in about 30 of them. When the outbreak began, swabs of all throats were sent to the University laboratory, with positive results in almost every case, but when the cases became numerous, swabs were sent in cases of doubt only. If I found a case with marked signs of laryngeal obstruction, or with definite membrane, not only on the tonsils, but on the soft palate, uvula, or post-pharyngeal wall, I considered the case true diphtheria. The

figures given do not include any cases in which there were fair grounds for doubt, though, in passing, I may say I invariably used antitoxin, even in such doubtful cases.

The character of the disease differed in many ways from what I had seen at the Melbourne Hospital. Perhaps the most striking feature was the mildness of the symptoms, taking the cases as a whole. Many of them were of great severity, especially when the larynx was affected, but the majority were undoubtedly mild, and as I have said above, this will in part explain the small mortality. Epidemics of diphtheria and other contagious diseases do at times show this peculiarity, though why they should vary is not easy to explain. The widespread nature of the epidemic in this case precludes us from attributing any special resistance on the part of the children of the district, whether due to meteorological conditions or anything else, and we are forced to the conclusion that the virus itself must have been less vicious than usual. As showing the mild nature of the disease, many of the children had no other symptom of illness than lassitude, anorexia, and a slight temperature, rarely over 100°, while both tonsils and the posterior pharyngeal wall were covered with membrane. Sore throat, in many cases was trifling or absent, and parents, on bringing ailing children, were often surprised to learn there was anything the matter with the throat, as the children had made no complaint in that direction.

As regards the mode of onset, it was for the most part quiet, but a few showed an onset far more sudden than we commonly see in diphtheria. In some of the cases verified by bacteriological examination, the child was suddenly taken ill with shivering or a rigor, and vomiting, with a sudden rise of temperature to 103° or 104°, a hot dry skin, and great prostration. In cases of this sort the local appearances were at first invariably puzzling. One or both of the tonsils showed numerous white or grey spots, practically identical in appearance with a follicular tonsillitis, but these spots rapidly increased in size till they blended to form a patch of membrane. The same phenomenon was observed on the posterior pharyngeal wall. In cases such as these, I was careful to get a bacteriological examination made, and in every case with a positive result. Such a condition could only be due to a

multiple implantation of the diphtheria bacillus, and the numerous colonies may account for the unusual severity of the onset. No case was seen showing the membrane in the nostrils, though in several a unilateral offensive nasal discharge, at the time membrane was showing on the fauces, led to the suspicion of nasal implication. In one family in which several cases of the disease occurred, a little girl had ulceration of the adjacent faces of the labia majora with very offensive discharge, but as she had been ill a week when first seen, it is impossible to say whether this was originally diphtheritic, though the mother was positive there were white patches there before the ulceration.

My experience at the Melbourne Hospital led me to place great stress on facial pallor as distinguishing diphtheria from other forms of sore throat, but this epidemic has caused me to waver in such a belief, as many of the children showed no such manifestation. The condition of the glands below the jaw was such as is usual in diphtheria. The enlargement was not great, and the glands were always very hard, with practically no peri-glandular infiltration such as is so common in other acute throat affections.

Although I have stated my belief the virus was of a mild type, it seemed to have the power of causing great irritation, apart from its necrotic action. All the parts in the vicinity of the patches were much reddened and œdematous, the uvula especially, and possibly some of the cases of laryngeal diphtheria were due to this œdema, rather than to actual blocking by membrane. Numerous as the cases have been, I have so far had to deal with two cases only with sequelæ, the result of the disease. One was in a little boy who, a month after his attack, showed evidence of partial paralysis of the laryngeal muscles, with brazen cough, altered voice, &c.; the other, also a boy, had paralysis of the soft palate, with regurgitation of fluids through his nose.

As regards treatment, I have in all cases, doubtful and otherwise, injected diphtheria antitoxin between the shoulder blades. The first half of the period under review, Behring's No. 3 was used, and for the rest of the time, that prepared by Burroughs, Wellcome and Co. I have used it freely, injecting bottle after bottle, till I was sure improvement was taking place, and in no

case did I see the slightest harmful result. In my series, the rashes that one used to see so frequently a few years ago after the use of antitoxin did not once appear, and in spite of the numerous injections, there was no case of abscess or irritation at the site of puncture, though if such an unpleasantness does occur, it is not fair to blame the antitoxin. There are still many who do not believe in the efficacy of antitoxin, and do not employ it, and some who go so far as to state it is unsafe to use it, and it is mainly to try and upset this belief that this paper has been written. Making all allowance for the mildness of this outbreak, the mortality of slightly under 2 per cent. must be attributed to the free use of antitoxin. The results, too, would tend to prove that, as well as curing the disease, the antitoxin has the power of preventing such a sequela as diphtheritic paralysis—"About one-tenth of all cases of diphtheritic sore throat are attended by paralysis sooner or later" (Clifford Allbutt's "System of Medicine," Vol. I, p. 739)—yet out of these 106 cases, paralysis has only shown itself in two, though I admit there is time enough for it to show in some of the others yet.

Though all experience shows the administration should be as early as possible, the antitoxin should be used, no matter at how late a stage. One of my cases showed this very markedly. While away on a holiday, my *locum tenens* saw a little boy, æt. 12, with a sore throat, which he did not consider diphtheria, and so did not use the antitoxin. He saw the boy twice, and, as he seemed better on the second occasion, allowed him to return to his home in the country. A fortnight later his mother brought him to me, saying he had been ill ever since, with anorexia, sleeplessness, great irritability, languor, and occasional vomiting. From being a plump little fellow he was much wasted. She also said his throat had shown white patches all the time. I found a patch about the size of a threepenny piece on one tonsil, and considering the case diphtheria, injected antitoxin (1500 units, B.W. & Co.), and let him go home. His mother came in a week to say he was all right, sleeping and eating well and playing about as usual.

The only other treatment I used for the faucial cases was to swab the throat, every three hours, with a throat paint of glycerin. acid. carbol. ʒ ss, in glycerine ʒ j.

The two children that died had laryngeal diphtheria, and died of heart failure. Both of these cases were not seen till they had been five and six days ill respectively. Both died quite suddenly, after the laryngeal symptoms were improving.

Many details have been omitted purposely, to avoid lengthening the paper, and obscuring the point at issue, viz., the efficiency of the antitoxin treatment. To my thinking, the antitoxin should be used whether the case be seen early or late, whether it be mild or severe, and as well in all doubtful throat cases. There is no reason to be afraid of doing harm, even if the case is not diphtheria, and if we are certain of our diagnosis, the serum should be repeatedly injected, till signs of improvement are undoubted.

A NOTE ON OPERATION IN PAN-OPHTHALMITIS, WITH REFERENCE TO TWO CASES.

By JAMES T. RUDALL, F.R.C.S.

[Read at the June meeting of the Melbourne Ophthalmological Society.]

I think most of those present will agree in considering the operation of enucleating the eyeball to be one of the safest in the whole range of surgery. For nearly twenty years of practice, I had not to regret a fatal event after it, and, no doubt, other practitioners have had equally good results. But a time came when several deaths were reported from meningitis supervening on enucleation of the eye for pan-ophthalmitis. At first I felt rather incredulous, but after a while I became convinced that some at least of the reported cases could not be put aside—there was intrinsic evidence of their accuracy. In the instances in which I had personally performed the enucleation, there must, I thought, have been some of pan-ophthalmitis among them, yet my results, as mentioned above, had been quite satisfactory. About the time referred to, some anatomical investigations on the lymph tracts of the eyeball, made by Schwalbe and others, were published (*Annales d'Oculistique* and elsewhere), which went to show the anatomical possibility of extension of inflammation from the eyeball back to the cerebral meninges through these