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CASES OF TRACHEOTOMY

IN

CROUP AND DIPHTHERIA.

BY

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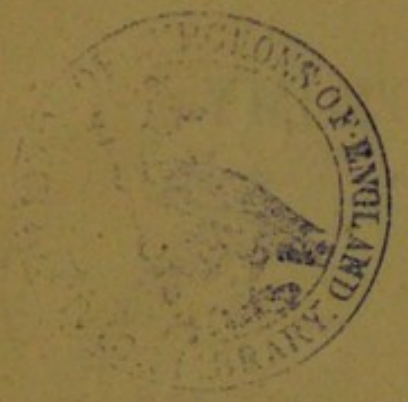
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CASES OF TRACHEOTOMY

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THE following cases of tracheotomy in croup and diphtheria may be interesting, as a sequel to my paper published in the July number of this Journal.

Case X.—James Armstrong, aged two years and three months, was attacked with symptoms of diphtheria on the 24th of August. Dr. William Greenlees, who is the family medical man, treated it by the local application of solution of nitrate of silver, and the administration of chlorate of potash. In two days the disease had subsided, and the patches had disappeared from the throat, whilst the child became quite lively. On the 27th, however, he got worse, and on the 28th the larynx was evidently invaded by the exudation. On the evening of the same day, I was called by Dr. Greenlees, and met Dr. Gray with him at the patient's house. It was quite evident that the disease had made rapid strides. The dyspnœa was urgent, the child tossing about in great uneasiness, and occasionally gasping for breath. There was but one opinion, that without operation the patient had only an hour or two to live, and the parents at once consented. I performed tracheotomy in the manner detailed in the paper alluded to, with a most satisfactory result, for in a few minutes the little sufferer was lying quiet, breathing easily, and much relieved in every way. The double canula tube was easily introduced and retained. During the night milk and beef tea were given, and readily swallowed. On the fifth day the tube was removed, and the child breathed easily, both through it and by the nose. Nothing untoward occurred; the child made a rapid recovery, and is now strong and well.

Case XI.—Isabella Grant, aged 21 months, was attended by Dr. Gray for diphtheria. She had been ill for forty-eight hours, when I saw her on the morning of the 25th September. Although the symptoms were not very urgent, it was clear that they would become so, as the disease was going on unchecked. The child, however, seemed to be suffering so little that the parents would not consent, until a further trial had been made of medical treatment. In the evening at 8 o'clock we met again, and now the only question was whether the disease had not gone too far to afford a chance of life. The debility was considerable, and the dyspnœa urgent. I told the parents of the mistake they had made, but they were now as anxious to have the operation performed as in the morning they were averse to it. I therefore performed tracheotomy, hoping that the short duration of the disease would be an element in its favour. Nothing could be more satisfactory than the immediate result of the operation.

In the morning the child was breathing quietly and had slept a good deal, but the pulse was not very strong. In the forenoon the stomach was overloaded with milk, and sickness and vomiting came on, which soon reduced the strength of the little patient, and she died exhausted in the afternoon, of asthenia. The breathing was all along quite free, from the time the trachea was cleared out after the operation. This was the youngest child I have operated on, and the facility of introducing the tube and freedom restored to the respiration, shows that, contrary to the opinion formerly entertained by the French authorities, the operation might be performed on children under two years of age.

Case XII.—George Johnston, aged 5 years, was seized with symptoms of acute croup, on the 9th of October. Dr. Gray prescribed antiphlogistic remedies, including hot fomentations to the neck, and full doses of antimony. The disease steadily advanced, and on the evening of the 11th I was requested by Dr. Gray to take charge of the case, with a view to tracheotomy. As neither the house nor attendance was likely to be suitable for the operation, the little patient was removed to the Infirmary, where, with the advice and assistance of Drs. Lyon, Morton, and Gray, I performed tracheotomy. Adhering closely to the rules I had laid down for my own guidance in this operation, and which I detailed in the paper before alluded to, I operated very cautiously, and was delayed a considerable time before opening the trachea, by bleeding from a thyroid vein, which I had some difficulty in securing. Fortunately, it was not a case demanding urgent haste, and I was rewarded for the little delay by the total cessation of any bleeding after the vessel was tied. As before, a double tube was inserted into the trachea, and the relief was instant and continuous.

For the first forty-eight hours the secretion which escaped from the tube was very viscid, and was with difficulty cleared out, but afterwards became thinner; and on the 16th the tube was removed, and the boy breathed freely by the wound. On the 19th the voice had returned, and he was dismissed cured on the 3rd November, the wound being completely cicatrized.

This was a case of acute sthenic croup, and in it I operated in an earlier stage than I have hitherto done. The disease was only of forty-eight hours' duration, but during that time it had been carefully watched, and actively treated by the physician in attendance; but it had progressed regularly, and was still on the advance. The trachea, and even larynx, were evidently obstructed, and the fits of dyspnœa, which came on at intervals, were urgent, though in the intervening period the breathing was comparatively quiet. It was one of those cases where careful observation of the progress showed that general treatment had failed, and was failing to check the disease, and that what was now warranted would in an hour or two be urgently called for, with then little hope of success. My experience in the disease convinces me that the operation has been usually too long delayed, and I felt warranted in operating even before death from suffocation was imminent, and the result in this case justifies the opinion.

Case XIII.—Mary Aitken, aged two and a half years, a patient of Mr. E. Macmillan, was ill with symptoms of diphtheria for a week, before it attacked the larynx. She improved a few days after the commencement of the disease, but on the 16th of October symptoms of croup or of laryngeal complication appeared. A blister was applied to the neck, and ipecacuan wine administered. On the 18th I was called in consultation, and found the symptoms of laryngeal obstruction very evident, but as there was no immediate urgency, returned home to procure instruments, and left instructions to have the room prepared. Shortly after, accompanied by Dr. Cowan and Mr. Macmillan, I went again, and we found the symptoms more urgent, and there was no doubt that the only chance of life lay in tracheotomy. The dyspnœa was very distressing, and the little patient could hardly be made to lie quiet on her mother's knee. The strength was much reduced, but not so much as to forbid the hope of recovery after operation. I therefore operated very cautiously, and without anything untoward, opened the trachea, and inserted the double tube. The relief was instant; large quantities of exudation were coughed out by the tube, and the air passage remained free, the little girl breathing quietly and gently. In half an hour she was sleeping soundly.

Next morning everything was going on nicely; she had slept a good deal, and taken milk and beef tea, and was lying quietly

and comfortably on a table made up into a bed, so as to afford plenty of air. A stream of steam was directed into the room, from a kettle kept boiling on the fire.

In the evening, I found that the breathing had become much more laboured, and the gentleman who kindly lent his aid in attendance, had been unable to restore freedom to the respiration, even by clearing out the inner tube. The secretion in the trachea was so tough, that it was with difficulty driven up into the tube. I therefore pushed a feather far down into the trachea, and this brought on a violent fit of coughing, during which a pellet of tough and partially dried exudation was expelled through the tube; hereupon the breathing at once became tranquil, and the child was relieved.

Next morning, however, the strength was much reduced, and the child was unable to cough up the tough exudation, which continued to collect in the trachea. The blistered surface was also giving great uneasiness, owing to the irritation of the edges of the canula; but the parts around the wound were so swollen that I could not venture to remove the tube, without the risk of instant suffocation. The child gradually sank, and died about forty hours after the operation.

Case XIV.—On the evening of the 29th November, I was asked by Dr. Cassells to visit J. Welsh, aged five years, who had been ill with croup for three days. He had been actively treated with antimony, mercury, and blistering of the neck, without alleviation of the symptoms, and the dyspnœa was on the increase. I requested Dr. George Macleod to accompany me, to assist at the operation if tracheotomy were required. On our arrival we found that no time was to be lost, if the child was to be saved; the paroxysms of dyspnœa were most distressing, the poor child tossing about the bed in great agony, and gasping for breath. Respiration was accompanied by a hoarse stridor, and the evidence of impending suffocation most undoubted. The only point for consideration was, whether it was not too late to operate with some probability of success. However, as the strength was not very far reduced, and the pulse pretty fair, we determined to give the little patient the benefit of the operation, as it was quite manifest that death was not far off if it was not performed. The operation was a little tedious, as the tissues over the trachea were much swollen by the blistering; and the surface was quite raw from the effects of a blister, which had been removed only a few hours before. I opened the trachea in the usual way, and immediately a paroxysm of coughing took place, during which a large quantity of exudation was expelled from the wound, held open by the blades of a dressing forceps. After the first fit of coughing was over, I could see in the trachea a bit of false

membrane close to the wound, which I succeeded in catching with a pair of forceps, and extracted without difficulty. After pulling out and sponging away many shreds of pretty firm membrane and tough tenacious exudation, the breathing became quiet enough to allow of the double tube to be inserted. Nothing could be more satisfactory than the result. When I left the house, the boy was breathing calmly and had fallen asleep.

Next day he was still going on nicely, and several of my students kindly volunteered to manage the tube, and attend to the case for a day or so. The blistered surface caused a great deal of pain, from the friction of the tapes which retained the tube, but the little fellow bore the annoyance very well; he slept very comfortably and took his food with sufficient relish, considering the pain each movement caused. On the fifth day, the secretion had become so thin and was ejected with so much ease, that I removed the tube. The opening in the trachea remained patent, and the patient could breathe, both through it, and by the mouth and nose. He made an excellent recovery.

Case XV.—W. B., aged five years, was attended by Dr. Cassells for diphtheria. He was only ill for forty-eight hours, when symptoms of laryngeal complication occurred. These showed themselves on the 29th November, the day I operated on the case last detailed; and Dr. Cassells informed me that if this progressed he would again request me to undertake the operation. Accordingly, on the evening of the 30th., accompanied by Dr. Miller and Mr. M'Vail, we went to visit the little patient. He had all the symptoms of acute croup, the patch of exudation beginning in the mouth alone indicating the diphtheric complication. There was considerable fever; the face was flushed, rather than cold and puffy; but the stridor and dyspnœa, and especially the extent to which the sternum and the intercostal spaces were drawn backwards during each effort at inspiration, showed sufficiently the amount of obstruction to the ingress of air. It was quite obvious that suffocation was at hand in a very few hours. During the operation, while the child's head was held back, a fit of dyspnœa came on, which showed us the operation was by no means too soon performed, and made me anxious to complete it as speedily as it could be done with safety. As in the last case, the opening of the trachea was immediately followed by the expulsion of a large quantity of tough exudation matter, several pieces of firm membrane, and a great quantity of tenacious mucus. The false membrane was quite strong, and could be torn into shreds with the forceps. When the breathing became tranquil, after the trachea had been cleared the double tube was introduced, and as usual the child, worn out with the struggle and previous exhaustion, fell into a quiet sleep.

In the morning things were going on nicely; the child had slept a good deal, and taken some milk and tea with relish. The breathing was very fair, although the secretion was tough and the tube became obstructed with it from time to time. The tube was not a very satisfactory one, being formed on a new principle; which, although intended to facilitate its introduction, only served to prevent the inner tube being withdrawn and introduced again. The inner tube was therefore not withdrawn till it became partially filled up, when it was taken out in the middle of the day, and no effort could succeed in replacing it. The outer tube was therefore left alone in the wound. Towards evening, the exudation which was thrown up into the tube became so viscid, and dried so rapidly, that the outer tube began to be clogged, and at six p.m. when I visited him, the respiration was considerably impeded, and he was restless and somewhat feverish. I tried to clear out the tube, but found the exudation had become dried inside, and adhered with great tenacity. There was therefore no resource but to remove the tube. When it was taken out, I found that the opening in the trachea could be kept patent with the dressing forceps, and that respiration went on better than when the tube was in, and that even when the forceps were withdrawn, the opening remained wide enough to permit the air easily to enter. At ten p.m., I returned with another tube, but found evidence that the disease for which I had operated had been advancing and attacking the trachea far down. The symptoms of obstruction had returned, very much as before the operation, and were in no way relieved when the tracheal wound was held wide open. The sternum and intercostal spaces were drawn in at each effort at inspiration, and the face had become puffy and the lips almost livid. The introduction of the tube made no difference, but rather increased the suffering; so it was withdrawn and the wound held open when necessary with the forceps; but the air had evidently free admission to the trachea. The edges of the wound and the trachea, at the bottom of it, were quite crusted over with hard dried exudation; and the tough partially dried shreds which were occasionally coughed up, showed that inflammation of an acute kind was going on in the lower part of the trachea. The steam diffused in the apartment was not effectual in counterbalancing the tendency of the exudation to be dried up. The child died twenty-eight hours after the operation.

With reference to this case, it may be remarked, that tracheotomy is not proposed to cure croup, but to ward off impending death from suffocation. It is not suggested as a remedial measure, but as *the only* treatment which will save life in a given case. I have again to state, that increased experience

convinces me that the lives of many children might be saved, if the operation of tracheotomy were resorted to when it becomes evident to the medical attendant that his treatment is not checking the disease. If he waits till impending suffocation has proved that the malady has gone on unchecked, in most cases it is too late; though in some, even then, lives have been saved. There is a stage, which experience will make still more determinate, when the physician can discern the signs that his remedies have been ineffectual to arrest the disease, and that a fatal termination will probably be the result, unless the surgeon can step in and restore the respiration. It is to recognize the stage referred to, and to resort to the operation of tracheotomy at a period when it will afford favourable results, that the attention of medical practitioners should be directed.

In concluding this short paper, I must acknowledge the kindness of many of my students and dressers in the Infirmary, in placing their services at my disposal, to conduct the after treatment of most of the cases now detailed.

I have now performed the operation of tracheotomy fifteen times, in five of the cases with a successful result. In another point of view it may be certainly stated that the lives of these five children have been saved by the operation.