CASES OF
DISEASE OF THE LARYNX,
AND SOME
OBSERVATIONS ON THE OPERATION OF TRACHEOTOMY.

BY
T. A. BARKER, M.D.,
PHYSICIAN TO ST. THOMAS'S HOSPITAL, AND LECTURER ON CLINICAL
MEDICINE.

Received May 7th.—Read May 8th, 1855.

THE following brief sketches of cases of disease of the larynx and trachea, are brought before the Society for the consideration of the Fellows, not only because they possess some features of interest as unusual varieties of disease,—but also as being suggestive of the propriety of performing the operation of tracheotomy, in some cases, much earlier than is the ordinary practice ; that is, before the commencement of those very urgent symptoms which seem to leave no alternative except the immediate performance of the operation, and speedy death.

The first case is that of J. W. H—, a small boy, æt. 7½, who was admitted into St. Thomas's Hospital, under my care, on the 31st of October, 1854.

His mother, who had brought him to the hospital, had gone away before I visited the ward ; and, as the child could only speak in an abortive whisper, I could not, at that time, obtain any reliable history of his illness.

At first sight, I thought the boy was labouring under an attack of croup : he kept the head constantly thrown a little backwards ; and the respiratory sound and cough were such as are ordinarily heard in this disease. But, after he had been watched a short time, I noticed that the breathing was regular, though laboured and rather rapid ; that there was little appearance of general uneasiness or febrile disturbance ; and that there was no pain when the larynx and trachea were pressed. When he swallowed, there appeared to be some difficulty of deglutition, but no pain. The face was not flushed ; the pulse 112, and small ; the tongue coated ; the respirations were 22 in the minute, and, as already stated, laboured, but perfectly regular ; and with no appreciable intervals between the acts of inspiration and expiration. The chest was round and remarkably resonant in every part : nevertheless, as is frequently the case when the larynx is partially obstructed, no breath-sounds could be heard when the stethoscope was applied to the chest.

It is difficult to convey, by means of words, the exact amount of the urgency of such symptoms as were present when I first saw this case. It was, however, such, that had the patient been an adult, and had his history shown that the disease was acute, I should not have thought it safe to wait for the comparatively slow action of such remedies as mercury and antimony ; but, if immediate relief had not been given by the abstraction of blood, I should have recommended tracheotomy. The greater difficulty and risk of the operation in a child seven years of age, as well as the greater doubt, than in the case of an adult, as to the state of the trachea and lungs, would have made me hesitate in this instance, under any circumstances. Other considerations, also, led me still further to question the propriety of operating. I have already stated that the child could only speak in an abortive whisper ; nevertheless, as he was intelligent, I had no difficulty in ascertaining, by his signs of assent and dissent, when questioned, that he had been ill for more than a year ; and that he had not become worse during the last fortnight. This was borne out by the state-

ment of the mother, two days afterwards, who informed me that he had always been hoarse, and had had a remarkable wheezing from his birth ; that he had caught a bad cold a year previously, when he had symptoms similar in kind to those now present ; that he improved in the summer, though he did not recover his voice ; that the respiration became more wheezing and more laborious early in the autumn ; and that the symptoms had, since that time, very gradually assumed their present character.

Leeches were applied to the sternum, and small doses of tartar-emetic were given, at short intervals (gr. $\frac{1}{4}$ every two hours) and the next day he could whisper so as to be understood ; he breathed more easily ; there was less wheezing ; and some faint breath-sounds could be heard in the chest. A blister applied below each ear gave additional relief. A few days afterwards he relapsed ; and then, in my absence Hydrarg. cum Cretâ, and mercurial inunction were ordered. Each report, on November 9th, 10th, and 11th, states that he had improved ; the breathing was easier, the respirations remained about 22 in the minute, but were less laboured, and there was an interval between expiration and inspiration ; the pulse ranging from 80 to 95 ; but on the 12th, after a restless night, he died very suddenly. The statement of the sister of the ward was, that he appeared much better when she had last seen him on the night of the 11th ; and the night-nurse asserted, that although he had been restless, there had not been more wheezing, cough, or difficulty of breathing than she had noticed on former nights. These statements are now alluded to because they bear upon observations to be soon made, on the possible nearness of a fatal termination, in laryngeal affections, not only when they appear to be stationary, but even when the patient appears to be making progress towards recovery.

Post-mortem, thirty hours after death.—The bronchial tubes and trachea contained a good deal of frothy mucus ; but, in other respects, both those parts and the lungs were healthy. The following account of the appearance of the

larynx has been furnished by my colleague, Dr. Bristowe. The rima glottidis was almost completely closed by a warty growth, the size of half a marble. The growth sprung from the upper and lower chordæ vocales, and the interval between them. The whole circumference of the rima, except quite the posterior part, was closed. The tumour consisted of three or four more or less pedunculated masses. It was, for the most part, of a whitish colour, somewhat tough, and appeared to consist of almost horny processes, from one eighth of an inch downwards in length. One of the masses was formed of minute, reddish, clavate processes. Under the microscope it presented the characters of an ordinary warty growth. The parts springing from either side had become flattened by mutual pressure, and the only available space for respiration was a very narrow passage at its posterior part. The posterior surface of the epiglottis, especially at its lower part, was studded with elevations about the size of a pin's head, which appeared due to enlargement of the glands. No other morbid appearances of importance were observed on other parts of the body. The size and form of this growth are well shown in the accompanying plate.

As this is not a common disease, I take the opportunity of exhibiting to the Society a similar specimen taken from the Museum of St. Thomas's Hospital. It is an old preparation, and no history is attached to it.

I believe it will be admitted that tracheotomy was not expressly indicated in this case. Had the disease been acute or progressive, and had not the boy been immediately relieved by leeches and antimony, I should have recommended the operation. But the disease was neither acute nor progressive; and considerable relief was speedily given by the remedies used. If, however, the same symptoms had been present in an adult, in whom the operation would have been free from many of the difficulties and objections which occur when it is performed in young persons, I consider that the operation should have been performed so soon as it had appeared that immediate and material relief, by other means,

Warty growth in the Larynx.

was not to be obtained. There are certain points common to such cases, whether they occur in children or adults, viz., an incurable disease in the larynx, almost certainly going on to such closure of the air-passage as would destroy life ; together with so healthy a state of lung as would allow life to be prolonged if air could reach it through an opening in the trachea. Nevertheless, an operation which might have been judiciously recommended in an adult, was, for reasons already stated, of more doubtful fitness in the case of a child. This case also illustrates another circumstance which may take place in an adult equally with a child, viz., that the diseased larynx may become so patent as to lead to a hope that the patient is progressing favorably ; when, unexpectedly and without apparent cause, an increase of disease occurs, and the person dies suddenly.

The next case and preparation well illustrate how death may unsuspectedly approach a person with laryngeal disease, and how suddenly life may be terminated. It is the larynx of a young woman, in which the epiglottis appears like a monstrosity, from its enlargement and altered shape, which have been caused by thickening of the mucous membrane and infiltration of the sub-mucous tissue ; and the same may be said of all the membrane surrounding the glottis. The lining of the larynx is similarly affected, and to such an extent that the sides of the larynx were almost in contact, and the aperture had, immediately before death, been completely closed by a bit of tenacious mucus.

Much surprise will be felt, after an inspection of this preparation, when it is known that the person from whom it was taken was supposed to be in good health a minute before death took place. She had had a sore throat, supposed to be venereal ; but all appearance of disease about the tonsils, &c., having been removed, and having reported herself as "well," she was marked for dismissal from the hospital on the fixed day. Before that arrived, one of the pupils was looking at the throat, when she coughed, fell back on the bed, and expired. No other cause of death than the diseased larynx could be found. I did not see this case

during life, but I made the post-mortem examination, and feel sure the history is correct.

The next case is one in which it will be seen, by the preparation, that the larynx and neighbouring parts are singularly altered. Ulceration, thickening, and cicatrization have been extensively at work in the larynx, and upper part of the trachea; and have converted the air-passage into a rough, narrow, and tortuous channel. It was taken from a man between thirty-five and forty years of age, who had suffered from chronic laryngeal disease long before I saw him. Whilst under my care, the symptoms were referable solely to the laryngeal affection, being almost complete loss of voice; long, laborious inspirations and expirations, without the slightest appreciable interval; harassing cough; and an entire absence of breath-sounds when the ear was applied to the chest, though it was naturally resonant in all parts. As no treatment gave relief, I was anxious to have the trachea opened, and I believe the man would have consented; but those whom I consulted, taking into consideration that the disease, or, at all events, the symptoms, had been stationary for many weeks, did not encourage me to order the operation, unless the man became worse. He did ultimately become worse, but at so short a period before death, that no one knew when the unfavorable change took place. This occurred thirteen years ago. I should now, in a similar case, unhesitatingly recommend the operation. Every organ in this man's body was sound, except the larynx; and I see no reason why life might not have been much prolonged by an operation.

The case illustrated by another preparation is the only one in which I have been able to obtain the patient's consent to have the operation performed more as a precautionary measure than for the removal of manifest and pressing danger. It was taken from a woman, æt. 40, who had long been the subject of chronic laryngitis, and had had other secondary venereal disease. Before she came under my care, she had, on more than one occasion, been threatened with immediate suffocation; but the urgent symptoms had

passed off. After she came under my notice, she had occasional exacerbations in the dyspnoea, without apparent cause ; and, to avert the prospect of a sudden fatal attack, I induced her to submit to the operation. She wore a trachea tube, and for ten weeks had no unfavorable symptoms. At that time, without any known cause, she became desponding, took very little nourishment, and in ten days she died.

In addition to the disease of the larynx, seen in the preparation, there is an oval opening about a quarter of an inch in diameter, between the upper part of the trachea and the œsophagus. In the recent state, this opening was covered, on the œsophageal side, by a valve-like fold of mucous membrane. During life, articles of food and drink occasionally passed through the external opening in the trachea.

The conclusions to which I have come, from a consideration of these and other cases of disease of the larynx, which have been under my notice, are, that the probability of a fatal termination, cannot, within certain wide limits, be measured by the urgency of the symptoms ; that patients affected with chronic disease may remain apparently stationary, or may apparently be improving, and, nevertheless, may either expire suddenly, or with so short warning of increased danger, that timely aid cannot be procured. What, therefore, ought to be the duration and amount of disease to justify the recommendation of tracheotomy in those cases which would ordinarily be pronounced not to be urgent ? This is a question which will require all the experience, tact, and judgment of the medical practitioner to solve. No general rule can be laid down, and each case must stand by itself. Of one point, however, I feel certain :—at present there seems little risk of the operation being performed unnecessarily. For one case where the operation may be performed prematurely or unnecessarily, I believe it to be neglected in many where it offers a fair prospect of prolonging or saving life. I will add a remark upon those cases in which the operation has been performed, in consequence of the urgency of the symptoms, and the failure of

other remedies, proving it to be a last resource. In all such cases where I directed the operation to be performed, and in all where I have seen it performed by the direction of others, it has appeared to me to have been done too late; that is to say, not too late to save the life of the patient, but so late as to cause increased difficulty and danger in its performance; and to leave the patient in a far worse condition, as regards present comfort and the prospect of ultimate recovery, than if the operation had been performed earlier. The difficulty of the operation is greatly increased as the congestion of the veins of the neck becomes greater; it is often rendered tedious by the necessity of waiting till hemorrhage has been arrested before the trachea is opened; and, with every precaution, a large quantity of blood often enters the trachea and harasses the patient by exciting violent cough. Nor is profuse venous hemorrhage the only evil connected with the performance of the operation, which arises from delaying it too long. When the aperture of the larynx is closed beyond a certain point, the spasm which may arise on the first application of the knife, threatens the patient with suffocation; and thus, not only is the operation protracted and rendered more difficult, but considerable risk of immediate death is incurred. In two of my cases this risk has been very great: one of them I will briefly narrate. The patient was a man of middle age, who had been ill only a short time, and symptoms which indicated the probability of acute laryngitis had commenced only a few hours before I first saw him, at 11½ a.m. He was immediately cupped, which relieved him for a short time. Two hours afterwards the symptoms, though not very urgent, were such as, in my opinion, justified me in recommending tracheotomy; but an hour unfortunately elapsed before it could be done. The symptoms had then become more urgent, though not alarmingly so; nevertheless, after the first incision, inspiration seemed to be completely stopped; and Mr. Clarke, who was performing the operation, considered death to be so imminent, that he felt it necessary to open the trachea immediately, regardless of the profuse and unchecked flow of blood, which

it was impossible to prevent entering the opening; and which caused great fear of suffocation. The man recovered; and is now, three years later, my patient for another malady; but quite free from any disease of the air-passages.

It is almost superfluous to allude to the mischief which may arise in other parts when the operation is needlessly or unavoidably delayed; so that, whatever may be the immediate result, the operation fails to give permanent relief. The chief danger, of course, is that of congestion of the lungs. One of my patients died from this cause alone, though the operation was neither tedious nor difficult; and appeared, at first, to have been completely successful. She would not consent until her case was almost hopeless.

The preceding observations may perhaps be considered by the Fellows of the Society as trivial and unnecessary. But when I compare the results of my own experience with what I have read and heard of the operation of tracheotomy, I can come to no other conclusion than this,—that the importance of performing it early, and before rather than after very urgent symptoms have commenced, is not sufficiently kept in view. No doubt the period at which the operation is to be performed cannot always be decided by the medical attendant. Patients and patients' friends have to be consulted; the operation naturally excites much alarm, and appears to them full of danger; and it often happens that nothing but extreme suffering, and unmistakeable imminence of danger, will induce a man to have his life saved, by having, as he would express it, his throat cut.

In conclusion, I must apologise to the society for the form in which these cases and observations are laid before them. They were promised to the secretary some time ago; but as there was a prospect of some difficulty in respect of exhibiting the preparations, I abandoned the intention, until last Saturday, when I was requested to send it before this evening, if possible.

Since this paper was read, another case, under my care, has terminated fatally, in which there can be little doubt

that life might have been saved, if the man would have allowed the operation to be performed. The disease was seated almost exclusively in the mucous membrane covering the arytenoid cartilages. The lower part of the larynx, the trachea, and lungs, were free from disease. The man acknowledged his danger; had an example in the same ward of a person in whom the operation had been successfully performed; and yet he refused to allow it to be done for him.