REMARKS

ON

FOUR CASES OF LARYNGEAL DISEASE.*

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In compliance with the request of the secretary to bring before this Society some cases of laryngeal disease, I have selected the following as suitable for the purpose; of these, two afford instances of acute laryngeal disease of extreme urgency supervening in the course of general illness. They are such as might confront the practitioner in any department of his profession, and are calculated to enforce the necessity of a laryngoscopic examination for securing exact diagnosis, where, without its aid, the most alarming symptoms would be unintelligible, or would be referred to organs quite unrelated to them. The remaining examples are special and surgical in their general bearings. The diagrammatic illustrations appended to each case were, in the first instance, roughly sketched from the patient at the time of treatment.

CASE I. *Paralysis of the Abductor Muscles of the Vocal Cord.* This case occurred in a young woman aged 20, a pupil at a training institution for governesses. She attended December 10th, 1880, and, as she entered the room, it was easy to predicate the nature of her illness from the noisy, almost stridulous, character of her breathing. She presented, further, the anomalous symptom of aphonia, a condition in no respect due to, and very rarely associated with, paralysis of the abductor muscles. Her companion gave the following history of her illness. In May 1880, she had a mild attack of diphtheria, but recovered perfectly, with the exception of not being so strong as previously. She had latterly been preparing for an examination, but did not consider herself overworked. On November 22nd, her present illness commenced with loss of voice, which she attributed to cold, but since this, her breathing had gradually become more difficult, and accompanied with stridor; the latter being, till quite recently, more or less intermittent. She was well nourished, and the functions were generally normal, except her taste, which was defective; the catamenia were progressing at the time of application.

December 10th. On inspection, the palate and fauces were markedly anæmic, but showed no indication of paresis. In the laryngoscopic image, the right ventricular band was swollen somewhat, and the vocal cords were closely and persistently approximated in the median line, and were slightly injected. The aperture between them would scarcely admit an ordinary visiting card edgewise (Fig. 1), and this was

Fig. 1.

all the breath-way she exhibited. The respirations were short and rapid, each inspiration being accompanied with stridor. The upper extremities were mottled, indicating impediment to the circulation; but on the whole she exhibited much less distress than the objective state of the larynx would have led one to expect. She would not consent to come into the hospital, so she was ordered a vapour of benzoin to inhale, and to take ten minims of tincture of nux vomica every four hours in water. I urged her to call on me the following morning.

December 11th. She came accordingly. The state of the larynx was the same as on the previous evening. While examining her with the laryngoscope, I noticed on one occasion a momentary widening of the glottis, such as is represented in Fig. 2, and which occasionally happening explained the comparative absence of extreme urgency in her condition. The paralysis was subject to variations. Still her condition was one of great danger, and I considered it expedient to explain thus much to the superintendent of the institution of which she was a pupil.

In the evening of this day, she was brought in a cab to the hospital,

her breathing having become worse during the day. She was put to bed. On examining the chest, the laryngeal stridor was heard generally over the lungs. This latter accompanied expiration and inspiration, but varied a good deal in degree. There were considerable duskiness of the face, some mottling of the surface, and marked action of the alæ nasi, but no such indications of extreme dyspnoea as are afforded by depression of the supraclavicular fossæ and intercostal spaces. She asked for something to be done to relieve her breathing. Pulse varied from 88 to 100; temperature 99.8°; respirations 50. An inhalation of chloroform mixed with steam was given, after which the same momentary widening of the glottis was observed. The subject of tracheotomy was discussed with my colleagues, who agreed with me that some elements of hysteria about the patient warranted a tentative course. She was given an insufflation of morphia and a dose of sesquicarbonate of ammonia to each ten minims of the tincture of nux vomica. She was watched carefully through the night.

Fig. 2.

December 12th, A.M. She had passed a fairly comfortable night; there was no change in the laryngeal image, the cords remained as at first; but neither was there any exacerbation of her condition. Temperature 97°; pulse 90; respirations 44. The stridor was decidedly less marked. With the view of gaining time, and in pursuit of the tentative treatment of her case, I gave her half a drachm of peroxide of hydrogen largely diluted. In the afternoon, after taking two or three doses of this drug, the respirations fell to 24, temperature 97.75°, and the glottis was perceptibly more patent. She was ordered to continue the peroxide through the night.

December 13th. Abduction was now restored. From this date, she became rapidly convalescent, and, being desirous of going into Devonshire for her holidays, she left for this purpose on December 17th. The voice, however, was not yet restored.

REMARKS.—I have called this case one of paralysis of the crico-arytenoidei postici muscles, which are the abductors of the vocal cords, after endeavouring fairly to weigh the only alternative explanation of the condition presented by this patient, viz., that of persistent spasm of the adductor muscles, the crico-arytenoidei laterales. And I have done so because such a continuance of spasm is unknown in the experience of laryngology, or at any rate is unrecorded in the literature of the subject, so far as I know it. Complicated as the case was with aphonia, which was doubtless functional, and hysterical in its source (for there was no evidence of paralysis of the thyro-arytenoidei interni muscles to account for this symptom), one is compelled to fall back upon hysteria as the exciting cause of her perilous condition; for, whether the patient were the subject of paralysis or of spasm, while it endured she was none the less slowly suffocating. In what the exact nature of the hysterical impression consisted, would occupy too much time fully to discuss on this occasion. Briefly expressed, my own view of the case is, that the superior laryngeal branches of the vagus distributed to the larynx had been impaired by the attack of diphtheria the patient had experienced a few months previously. The nutritive vessels of these nerves presented, as regards the entire economy, the parts of least resistance, and, therefore, would most readily yield to vessel-dilating impressions proceeding from regions implicated in the excitement of menstruation. Such an undue state of dilatation, when it occurs in the nutritive vessels of a nerve, is equivalent to a suspension of the conductive functions of its fibrillæ, which are, so to speak, jugulated by the pressure of blood contained in the nerve-sheath. This at any rate is what I understand by functional paralysis, and its manifestation is of frequent occurrence in the regions with which we are now concerned. The idea of supplying oxygen to the blood, through the stomach, by means of the peroxide, to supplement the attenuated breath-stream, was suggested to me by an experience of its efficacy in a case of whooping-cough complicated with excessive bronchial secretion, which occurred to me when I was practising in the country some years ago. This patient was rescued from a semicomatose condition by drinking Barth's oxygen-water, a preparation which, I regret to say, is not now

* Read before the Harveian Society.

obtainable. The peroxide is a valuable substitute, however, though requiring to be cautiously administered. I should certainly recommend recourse to it whenever it is desired to gain time, in simply obstructive states of the air-passages.

CASE II. Acute Œdema of Glottis occurring in the course of Chronic Pulmonary Disease.—Mrs. H. G., aged 60, was admitted into the Throat Hospital, for chronic bronchitis of two years' duration, on October 11th, 1880, being sent from St. Leonard's for that purpose. There were coarse mucous râles over the chest generally, but no dullness on percussion; copious opaque mucous expectoration, at times having a purulent character; the breathing, quiet when at rest, became short and hurried on exertion; very slight changes of temperature also brought on dyspnoea. On laryngoscopic examination, the larynx generally was seen to be injected, while the ventricular bands and arytenoid cartilages were somewhat swollen. She was well nourished, inclining to fat, and in other respects fairly healthy. She was ordered an expectorant mixture, to which was added 3 grains of iodide of potassium and 20 minims of compound spirit of ammonia. She was also directed to inhale vapor pini sylvestris night and morning.

October 15th. She had progressed favourably to this date, and the expectoration were considerably diminished in amount. This evening, an erysipelatous looking swelling appeared on the left cheek, extending upwards to the orbit. She complained of increased dyspnoea.

October 16th. She was much worse; dyspnoea urgent. The laryngoscope disclosed an acute Œdema of the larynx, most marked in the left arytenoid cartilage and the cushion of the epiglottis, both of which were enormously swollen, producing a very marked degree of stenosis of the larynx (Fig. 3), and sufficiently accounting for the dyspnoea.

Fig. 3.

She complained of great pain in the throat, aggravated when she attempted to swallow. I scarified the œdematous parts, and directed her to suck ice constantly. In the course of two hours, very little relief to the dyspnoea having ensued, I gave her an insufflation of morphia (quarter-grain). The ice was ordered to be continued, and the morphia to be repeated later on if necessary.

October 17th. She passed a fairly comfortable night, the morphia not being repeated till the morning. The swelling of the glottis was considerably less, and she breathed more comfortably. This sudden attack of œdema of the larynx being regarded as partaking of the erysipelatous character of the swelling of her left cheek, she was ordered half a drachm of tincture of sesquichloride of iron in an ounce of water every four hours.

October 18th. She was better. The morphia insufflation was repeated night and morning for a day or two longer; afterwards only when the pain or cough returned to a troublesome extent. The ice was discontinued, as it had ceased to be of service.

October 21st. Her larynx was now restored to its former state, i.e., some enlargement of the ventricular bands and left arytenoid, as on admission. It was painted daily with solution of perchloride of iron (one drachm to one ounce). The erysipelas of the face had disappeared also. This attack left her very weak, and the bronchorrhœa increased; for this reason, she remained an inmate of the hospital till November 15th, when she returned home, having had no relapse of her laryngeal condition, and, for the time, being much improved generally.

REMARKS.—The state of this patient's health was strongly suggestive of a tuberculous taint, an opinion which receives support from the laryngoscopic appearances; the smooth, solid-looking, pale red enlargement of the ventricular bands and arytenoid cartilage seen in her larynx being, perhaps, the most frequent aspect presented by tubercle of this organ, in its initial stages. The sputa indicated a bronchorrhœa rather than a bronchitis; and, iodide of potassium being recognised as perhaps the most useful agent for diminishing this secretion, it was prescribed accordingly. In attempting to estimate the causes which led up to the erysipelatous outbreak in her cheek and larynx, I am not without a suspicion that the iodide, by lowering vascular tension, may

have been an essential factor in its production. Œdema of the glottis admits of no delay in its treatment, and, with regard to the course pursued in this case, it is only necessary to say that, in my hands, scarification has not proved very serviceable. Ice is useful; but morphia, applied topically by means of the insufflator, acts like a charm, both by allaying pain, and also, as I think, by its influence as a vessel-contractor.

CASE III. Papillary Growth on each Vocal Cord: Removal by Endolaryngeal Operation.—Charles B., aged 23, a railway servant, presented himself on June 15th, 1880. He stated that, for a month or more, his voice had been hoarse; he experienced a difficulty in talking, accompanied by a sense of fatigue. He had nothing further to communicate except that, four or five years previously, he had attended at the hospital under similar circumstances, and "had something taken out of his throat", since which time he had remained well until the time above stated.

June 15th. On examination, the fauces were red and very irritable. The laryngoscopic mirror was scarcely tolerated; but I was able to make out a condition of laryngeal catarrh, and what appeared to be a neoplasm or growth, protruding between the anterior commissure of the vocal cords. He was prescribed vapour of benzoïn, to inhale night and morning, and solution of chloride of zinc was applied on a brush to the interior of the larynx. Subsequently, the little mass above referred to resolved itself into two distinct warty-looking growths, attached one to each cord, nearly opposite to each other, and about one-eighth of an inch from their anterior ends. They were situated very close to the free edge of the cords, moved freely with these, and occasionally one or other would disappear below them. They were more or less pedunculated, and about the size of a hemp-seed—that seated on the right cord being the larger of the two. (Fig. 4.)

Fig. 4.

After devoting five or six weeks to subduing the irritability and catarrhal state of the pharynx and larynx, which was largely maintained by the man's beer-drinking habits, on July 23rd I passed a conical sponge-bougie, attached to a central steel stem, as recommended by Voltolini, with the object of attempting to rub off the growths. The case appeared well suited for making trial of this method, owing to the comparatively recent manifestation of the disease. I found no difficulty in using this instrument; in fact, the ease with which it can be manipulated proved, in this case at any rate, a delusive attractiveness. It entirely failed in producing any impression on the growths, though its introduction secured the purpose of accustoming the interior of the larynx to the presence of a foreign body, and so prepared the way for the introduction of the intralaryngeal forceps of Dr. Mackenzie. These latter, notwithstanding their apparent disproportion to the objects to be entrapped by them, are, as far as my experience is concerned, the only reliable instruments to secure the removal of such growths as this patient presented. Selecting an instrument with cutting blades, having an antero-posterior action, and of dimensions proportioned to the undersized faucial space presented by the patient, I proceeded, with the aid of the laryngeal mirror, to accustom the larynx to its presence. This process was carried out twice a week until the organ became perfectly tolerant of the manipulations of the forceps within it.

August 6th. A small portion of the right growth was brought away; but the greater portion eluded the instrument by slipping beneath the vocal cords. On August 24th, I managed to secure the entire substance of the right growth between the blades. Solution of chloride of zinc was applied as usual after each introduction of the forceps, and no ill effect occurred to the larynx. A minute speck on the right cord, indicating the site of attachment of the growth, was and still is visible.

This deliverance appeared to the patient to justify a return to his potations. Consequently, nothing further was attempted in respect of the removal of the remaining growth till towards the end of October, when he agreed to restrain his habits, and again go into training with the view of getting rid of it. This preliminary process occupied fully five weeks longer; at the end of which time, the larynx being sufficiently quiescent,

the second growth was removed in the same way as the first. He only attended twice afterwards; the larynx was perfectly sound, and the voice rapidly recovered.

REMARKS.—The foregoing case illustrates the recurrent tendency of papillomatous growths—inasmuch as the patient's history shows a previous attack of the disease, and its cure by operation. It would seem as if, in subjects predisposed to such occurrences, a very slight amount of irritation, such as was presented by the catarrh of this man's larynx, will suffice to start into activity the process of papillary development. The case further shows the tendency of these neoplasms to arrange themselves symmetrically. The result tends to justify recourse to the endolaryngeal operation. Certainly, such a serious operation as thyroto-my—dangerous as it sometimes is to life, and disastrous as it nearly always is to subsequent vocalisation—would have been unjustifiable in this instance. Therefore, if we are to exclude the endolaryngeal operation in every case, as some laryngologists assert, this patient, and all afflicted in a similar degree, would be placed beyond the pale of surgical assistance.

The difficulties inherent to the foregoing case arose from the situation of the growths at the anterior aspects of the vocal cords, where they are least accessible, and from their tendency to dip below the cords during the excursions of the latter. The chief hindrance, however, was that acquired by the intemperate habits of the patient, which maintained his faucial region in a perpetual state of irritability.

CASE IV. *Syphilitic Stenosis of Larynx*.—M. A. G., aged 46, married, applied at the hospital on July 30th, 1880. She stated that she had suffered with her throat for nearly twelve years, during which time she had experienced a good deal of treatment from laryngologists, always with benefit. Latterly, she had neglected medical treatment, and her symptoms had increased severely; they were: dyspnoea, dysphonia, great pain in the throat, and extreme prostration.

On laryngoscopic examination, the glottis appeared completely choked with an irregular mass of hyperplastic tissue. It was difficult to understand how respiration was carried on, but, on causing her to make a forced inspiration, an irregular slit, triangular in shape, became evident; it was about a quarter of an inch long by one-fifth of an inch wide at its base, and tapered to a point in the direction of the anterior commissure of the cords. This narrow breath-way was probably larger than it appeared in the mirror, because the posterior portion of the obstruction, contributed by the implication of the interarytenoid fold in the hyperplastic process, is situated in a plane superior to the latter portions, which were derived from the ventricular bands. The outgrowth from these latter completely obscured the vocal cords—so that it was not easy to say whether or not these were involved in the disease. At the anterior aspect of the larynx, the lateral growth had coalesced, so as to form a sort of web, which no effort at inspiration would cause to yield. (Fig. 5.)

Fig. 5.

The voice was reduced to a hoarse whisper, and the dyspnoea prohibited any but the gentlest locomotion. Altogether, her condition was such as to render recourse to tracheotomy a very near probability. As, however, the tissue presented the appearance of comparatively recent granulation, and the history showed its syphilitic origin, I determined to try the effect of dilatation. For this purpose, I chose Voltolini's conical sponge (described in the previous case), as this admitted of the simultaneous topical application of such medicaments as were calculated to reduce the new tissue. The first solution employed was sulphate of copper (fifteen grains to one ounce). With this the sponge-dilator was lightly saturated, care being taken to remove any excess which might fall into the trachea, when the instrument was pressed into the narrowed glottis. The treatment was commenced

July 30th, 1880. The patient was directed to draw her tongue well forwards, and to hold it firmly in that position by means of a handkerchief. Guided by the laryngeal mirror, the thin end of the sponge-wedge was inserted into the glottis, and the thicker portion forced well into the gap. The proceeding was painless, and relief to the breathing

(consequent on the stretching of the obstructing tissues) was decided. This treatment was carried out twice a week; but it is unnecessary to follow its details further than to say the rima enlarged considerably, so as, at any rate, to give her such a breath-way as to remove any immediate anxiety respecting her safety.

October 19th. I made the following note of her own words: "Can breathe more freely, and can walk three miles without fatigue." From the commencement of the treatment, she took five minims of the tincture of iodine in one ounce of water thrice daily, and inhaled iodine vapour intermittently. In November, this was exchanged for inunction of mercurial ointment.

December 20th. Finding the state of affairs at a standstill, I substituted solution of perchloride of mercury (one minim to one ounce) for the copper. Its necrotic effect upon the new tissue was shown immediately afterwards, by the ashy colour which the surface assumed wherever it came into contact with the sponge. As this application caused pain, lasting several hours afterwards, it was followed by an insufflation of morphia (quarter of a grain); after which no inconvenience followed the proceeding.

1881. January. The solution of perchloride of iron was increased in strength to two grains to one ounce. She had now become so tolerant of its use that the stronger fluid caused no pain, and the morphia was dispensed with.

February. The benefit at first accruing from the perchloride of mercury application was not maintained, so that a return was made to the copper solution, which, on the whole, has proved most serviceable. Fig. 6 represents the maximum improvement attained up to the present

Fig. 6.

date. It will be observed that, notwithstanding the enlargement of the breathing space, abduction is greatly impaired, the cords remaining nearly in the cadaveric position. They are still red, thickened, and irregular, and scarcely distinguishable from the adjacent ventricular bands. There is no movement in the crico-arytenoid articulations.

The patient is still under treatment, and the case is so far incomplete. The method successfully adopted to ward off the immediate urgency of tracheotomy, by the combination of dilatation with topical applications, in the manner detailed, comprises some features of sufficient novelty and interest to justify me in laying these details before you.

DR. WILLIAM HENDERSON has been appointed Sheriff this year for the City and County of Exeter.

INFANTILE MORTALITY.—Mr. John Henry Love, Medical Officer of Health for Wolverhampton, writes in his report, November 9th, 1881:—"It is a source of great regret that I am obliged to revert to the number of deaths of children under five years of age, which is excessive, there having been six hundred and forty-eight, and of these four hundred and three had not completed twelve months. Deplorable as it is, there seems scarcely any means that can be adopted to arrest it; and although all sanitary authorities alike feel that something should be done yet none as yet have been able to touch the root of the evil. Many assign as the different causes, errors of diet, and delicacy of infants. Doubtless these have their place in the list of infantile mortality; but I am still constrained to add that it may in the main be traced to the scourge of this country—drunkenness—for, where do we find premature birth, marasmus, inanition, atrophy, tabes mesenterica, diarrhoea, and convulsions most prevalent, but in the wretched squalid hovels of the drunkard, the dissipated and the indolent. What is required, therefore, is, to rouse the mothers to a stern sense of their maternal duties, counselling them to become cleanly and industrious, and then as a natural consequence, every blessing and care to their offspring will follow in its train."