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PART I. ORIGINAL COMMUNICATIONS.

ART. XVIII.—*Laryngeal Polypus treated by Laryngotomy and subsequent Evulsion and Cauterisation.* By KENDAL FRANKS, M.D., Univ. Dub.; F.R.C.S.I.; Surgeon to the Adelaide Hospital; Surgeon to the Throat and Ear Hospital.

SINCE the introduction of the laryngoscope the diagnosis and treatment of growths in the larynx has received a great deal of attention. We no longer work in the dark, nor are we obliged to rest an opinion as to the existence of abnormal conditions of the larynx upon symptoms which, unaided, are quite inadequate to justify a conclusion. We are not now satisfied to wait till a fatal termination reveals the true nature of the disease. In the present day we possess the means of arriving at an accurate diagnosis. We can see imaged in the laryngeal mirror the cause of the patient's sufferings, the symptoms are clearly explained by sight, and, more than all, an appropriate treatment can now be employed which the ante-laryngoscopic era forbade. It is now just twenty years since a laryngeal polypus was seen for the first time in the mirror by Czermak. Since then the subject has attracted so much attention that, in the words of Von Ziemssen, "the literature of the laryngoscopic period abounds in recorded observations to a degree almost oppressive." It is not to add to this oppression that I record the case which I am about to detail, but in order to draw attention to a method of treatment which is particularly applicable

under certain circumstances, but which has, however, seldom been employed.

Laryngeal growths in general may be treated by intra- or extra-laryngeal methods. Intra-laryngeal operations—such as evulsion with forceps, snare, &c., ligature, excision or cauterisation—being far less dangerous to life than any of the extra-laryngeal methods, one of these operations should be preferred when equal success can be thus obtained.

Fortunately the greater proportion of cases are suitable for treatment *per vias naturales*. But this is not always the case, for the growth situated in the cavity of the larynx may be so large, and have such an extended attachment, that it would be impossible to remove it all through the mouth, as in the case^a brought before the Clinical Society of London on February 22, 1878, in which Mr. Lister performed thyrotomy, and removed both vocal cords, together with the ventricular bands and the neighbouring portions of mucous membrane. Or the polypus may be situated in the subglottic region, in which case it may be almost impossible to grasp it from above—especially if the growth be in front, below the anterior attachments of the vocal cords. In such cases endolaryngeal measures are unavailing: we have no choice but to have recourse to an extra-laryngeal operation—that is, if the growth is in any way a source of danger to the patient.

Of extra-laryngeal methods of removing growths from the larynx, three are recognised:—

I. *Supra-thyroid Laryngotomy*, or division of the thyro-hyoid membrane, is only required when the growth is situated at the upper orifice of the larynx, and cannot be removed *per oram*.

II. *Thyrotomy*, or division of the thyroid cartilage. “This operation,” says Mackenzie,^b “may be required for the removal of large growths in the cavity of the larynx, causing great dyspnœa or dysphagia, which cannot be removed with the aid of the laryngoscope; or for the evulsion of growths in the subglottic region, which cannot be extirpated by indirect laryngotomy (through the crico-thyroid membrane).” This operation is one of no small danger to life, and the results of which are so doubtful, both as regards recovery of voice and recurrence of growth, that it should only be had recourse to when all other means are inapplicable, and when the safety of the patient demands it. Professor

^a British Medical Journal. March 2, 1878.

^b Growths in the Larynx. Morell Mackenzie. 1871.

Bruns, of Tübingen, has lately given statistics to show that thyroto-my has been followed by complete, or nearly complete, restoration of voice in only 46 per cent. of 39 selected cases, whilst recurrence of the growth took place in about 54 per cent.^a

III. *Infra-thyroid Laryngotomy* is required when the growth is situated below the vocal cords, or in the upper part of the trachea, and cannot easily be removed by endo-laryngeal methods. It is exceedingly doubtful whether the removal of such growths should be attempted by the mouth, as it can only be thus effected "with great difficulty, and after several months' close attendance." Moreover, the whole of the growth can rarely be got away in this manner—hence recurrence is more probable, and the voice frequently remains affected. Laryngotomy obviates these difficulties, and, as may be seen in the case I am about to describe, complete restoration of voice may be expected. "It is very remarkable," says Morell Mackenzie,^b "that this operation has not been more frequently performed;" for up to 1871, when he made this observation, but two cases had been recorded—one by Dr. Burow, and one by himself.

CASE.—The subject of the present communication was a woman named A. S., aged fifty-five, who applied for relief at the Throat Dispensary of the Adelaide Hospital, on October 7th, 1878. She has been a widow for thirty years, during the latter fifteen of which she followed the occupation of a cook. Having been obliged, on account of the distress she experienced in her throat, to give up work, she left her last situation and came to live with her daughter in Lower Mercer-street, about nine months previous to her admission into hospital. She stated she had been hoarse for twenty years, but otherwise she enjoyed perfect health. About nine months ago she experienced difficulty in swallowing—even the saliva causing some pain—and often had a "choking feeling," as though some foreign body were in the larynx. She completely lost her voice. These symptoms increasing, she sought advice, and was treated by a mustard poultice placed over the throat. She thought that this partially removed the "choking" sensation. The symptoms, however, became aggravated, till at last she could hardly lie down at night—suffocation in this position sometimes seeming imminent. Accordingly she used to be propped up in bed, and on several occasions she was obliged, she stated, to rush into the open air "to catch her breath." When she coughed there was scarcely any expectoration. The daughter now compelled her to attend the Throat Dispensary at the Adelaide,

^a British Medical Journal. March 2, 1878.

^b Op. cit.

Plate 1.

FIG. I.

FIG. II.

Drawn by Kendal Franks

Lithographed by John Falconer Dubi

LARYNGEAL POLYPUS.

which she did for the first time on October 7th, 1878. She was examined by Dr. Walter G. Smith, who kindly showed the case to me. She was a dark, sallow woman, of middle height, and fifty-five years of age. She could not speak above a whisper. She complained of no pain, but had a "husky heat" in the throat, with a constant feeling of dryness. She had an habitual short cough, and was always trying to clear phlegm from the larynx, but could only get up a little stringy, glairy mucus. On laryngeal examination, a polypus was seen almost to fill up the rima glottidis. It was pedunculated, but had a rather broad attachment to the anterior half of the left vocal cord. It moved freely on inspiration and expiration, flapping up between the cords. Whenever the cords were approximated the polypus was hid from view, being attached below them. It appeared to be fibro-cellular in structure, closely resembling similar growths in the nose, and had small vessels ramifying over its surface. [See Plate I., Fig. 1.]

Attempts to reach the polypus were now made. In the first instance I tried Gibbs' laryngeal snare, but being unguarded, and bending at the first contact with the larynx, it only succeeded in nipping a small piece of mucous membrane. Dr. Smith and I then, on several occasions, made attempts with various kinds of forceps, but, though apparently often touching the growth, we found it impossible to grasp it; for every time the forceps entered the larynx, the larynx closed, the cords approximated, and the growth disappeared from view. Then I hoped that Stoerks' guarded guillotine might succeed by passing it into the larynx, keeping it *in situ* till the cords separated on an inspiration, and then suddenly slipping it down between them. This frequently succeeded in getting the snare past the rima, but still, in spite of numerous attempts, every effort to get the wire noose round the polypus proved abortive. These endo-laryngeal attempts were continued at intervals of two or three days for more than a month, and then it became evident that other means would have to be resorted to in order to eradicate the growth. Having made a sketch of the laryngeal image as seen in the mirror, I showed it to my cousin, Dr. Philip C. Smyly. He gave it as his opinion that laryngotomy was the proper means to remove the growth. In this view Dr. W. G. Smith fully concurred, and, having obtained the approval of my colleagues and the consent of the patient, on November 27th laryngotomy was performed, ether having been previously administered by my colleague, Dr. Barton. The violent spasms of coughing which followed on the larynx being opened prevented the complete removal of the crico-thyroid membrane. The polypus could not be seen, and, as the coughing continued for some time, my colleagues advised me to postpone any further attempt at its removal for some days. A large-sized, plain tracheotomy tube was accordingly secured in the larynx, and the patient put to bed in a small ward, in which a constant

moist temperature of 64° F. was maintained. Some of the senior students of the hospital took it in turns to watch her day and night, and paid unremitting attention to the case, which was placed more directly under the care of Mr. William F. Elsner. The discharge through the tube was large in quantity, extremely viscid, and tenacious, so that the inner tube had to be cleaned out every half hour. The next day she seemed to be going on well, though she coughed a good deal. In the evening, at 6 p.m., she was flushed and the skin hot, so I examined the chest, and found dulness over the base of the right lung, which had not previously been discovered, though she had been carefully examined. The pulse was 116, temperature 102·8°, and respiration 30. The next morning Dr. Smith found the same condition, the pulse being 110, temperature 102·2°, and respiration 30, and we feared the occurrence of pneumonia. However, the temperature gradually fell, the dulness cleared off, and on December 4th the lung was normal, the pulse 90, respiration 23, and temperature 99·6°. It was now decided to attempt the extraction of the polypus.

The patient, being anæsthetised, was placed in such a position that the strong light of the window should fall directly on the throat. I then made several attempts to grasp the polypus by passing a forceps, the end of which was bent at an angle of about 120° through the crico-thyroid space. On the 7th December one of these succeeded in tearing off a small piece, about the size of a split pea. Every attempt to eradicate the rest of it proved futile, though different kinds of forceps were used; and I then determined to try to effect my object with caustic. I had a bulb of silver fastened on to the end of an ordinary laryngeal bougie, which, being made of pliable metal, could be bent readily at any angle required. I bent it about three-quarters of an inch from the end to a right angle, and, having fused some nitrate of silver on to the bulb, I passed it through the crico-thyroid space. Directing the bulb upwards and slightly to the left side, I depressed the handle so as to bring the end of the instrument as much forward as possible. By this means the nitrate of silver could reach the polypus situated beneath the anterior angle of the rima. The instrument being rapidly removed, violent coughing supervened, which lasted for some minutes. The patient subsequently complained only of a burning in the throat. This was on the 14th of December. To prevent this caustic holder cauterising more than was required, the bulb was enveloped in a thin layer of cotton-wool, save at the extreme end. The next day the voice for the first time became audible, though very rough and hoarse. The pain had completely subsided.

On examination with the laryngoscope, the polypus appeared white and opaque. Four days subsequently the nitrate of silver was applied as before, and was followed by the same symptoms. On the 20th, two days after the second application, the voice had greatly improved, the

Plate II.

Drawn by Kendal Franks.

Lithographed by John Falconer, Dublin.

LARYNGEAL POLYPUS.

patient herself observing that she could "shout grand." All difficulty of swallowing had disappeared, she had no "choking" sensations, and could breathe with natural ease. Her appetite had materially improved. On the 25th, a laryngeal examination was made; the growth appeared greatly reduced in size, and seemed to be sloughing. The caustic was applied to the growth freely. Next day the voice was completely gone, and she complained much of the burning in the throat. However, in a few days the voice returned gradually, and soon became stronger than it had hitherto been. She was greatly pleased with the improvement, and informed the bystanders: "I could call a cab now in the street, if I only had the money to pay for it"—a hint which subsequently was put in a less ambiguous manner. No application was made after this till Jan. 15, when the charged laryngeal porte-caustique was used, as on previous occasions, and was repeated every second day till Feb. 1, when, on a careful examination of the larynx being made, nothing abnormal was seen except a slight thickening of the left vocal cord anteriorly. The polypus had completely disappeared. Fig. 2—representing the condition of the larynx at this time—was taken from a sketch which I then made. The voice had become quite strong, never failed her, and, for a woman fifty-five years of age, was very good. Deeming further interference unnecessary, I now removed the tracheotomy tube—one of Durham's, which caused her less distress than any other. A conical plug of lint, dipped in carbolic glycerine, was placed in the wound, and a strip of plaster made all secure. In a few days the wound had completely closed, leaving nothing but a slight scar to tell of the operation. She shortly after went to the Convalescent Home at Stillorgan. Dr. Walter G. Smith, who took a great interest in the case, and with whose assistance most of the treatment had been carried out, examined the case quite recently, more than three months after the external wound had been closed, and kindly sent me the following results:—

"May 9th, 1879.

"DEAR FRANKS,

"I examined Mrs. S. with the laryngoscope several times since the closure of the tracheotomy wound; and on the last occasion, about a fortnight ago, I could perceive nothing abnormal in the larynx beyond a slight thickening of the left vocal cord. All traces of the polypus, as such, had disappeared, and her voice was perfectly restored.

"Yours faithfully,

"WALTER G. SMITH."

Whilst the question as to the advisability of performing laryngotomy in this case was still *sub judice*, a case which six years ago had come under the notice of Dr. Coppinger, Surgeon to the Mater Misericordiæ Hospital, and with the particulars of which he has

kindly furnished me, convinced me as to the danger of delay. The patient was a healthy-looking man, a resident in county Wicklow, who came up to Dublin complaining of dyspnœa, which he had suffered from for three years. He had no aphonia, but on exertion there was slight laryngeal stridor. He complained of severe attacks of loss of breath having come on on two or three occasions whilst going up hills. He mentioned to Dr. Hughes, to whom he had been sent from Wicklow, that once whilst leading a van he had fallen down from sudden dyspnœa. In a short time he recovered. On his journey up to town he had several attacks in the train. Except the slight laryngeal stridor, he showed no other symptoms at the dispensary of the hospital, where Dr. Hughes showed him to Dr. Coppinger. He was admitted to the hospital, and sent to his ward, pending a laryngeal examination which was to have been made next day. However, that night the sister in charge of the ward was suddenly called, and on arriving at the bed she found life extinct. The next day the larynx was removed, and then the cause of death became evident. A large fibrous polypus, nearly spherical in shape, and three-quarters of an inch in diameter, was discovered, attached by a small pedicle to the anterior wall of the larynx, just below the left vocal cord. The growth itself had passed up between the cords, and lay upon them, completely occluding the rima. A beautiful preparation of the polypus *in situ* was made by Dr. Coppinger, from which the accompanying sketch was taken. [See Plate II.]

With such an instance before us, the propriety of removing such a growth from the larynx is evident—the manner in which such removal should be effected is not outside the range of dispute. Sometimes the growth may be removed easily, when it occupies a situation below the vocal cords, by the endo-laryngeal methods. But this is not always so. In the cases of growths in the larynx published by Morell Mackenzie, he mentions three cases in which the tumour occupied this position, and in which “evulsion was effected with great difficulty, and only after several months’ close attendance. In two of them, indeed, the success was incomplete—a small portion of the growth remaining, and the voice being still a little hoarse.” Out of the cases operated on by other practitioners, and collected by the same author, fifteen times was the growth below the cords. “In five of these thyrotomy was performed, and in two the less serious operation of tracheotomy was necessitated before the growth could be removed through the fauces. There is little reason to doubt that in many, if not all, of these cases, had

an opening been made in the crico-thyroid membrane, the treatment might have been reduced to a few days, or at most a few weeks, instead of lasting, as it did, several months, and that it is possible the results would have been altogether more satisfactory."

The details of the case recorded above abundantly show the correctness of the view expressed by this eminent laryngoscopist. The case affords another plea for substituting laryngotomy for the more dangerous and less successful operation of thyrotomy. Again, in most of these subglottic growths, laryngotomy promises a more rapid and more complete evulsion than can be done through the mouth, and by keeping the crico-thyroid wound patent for some time after the removal of the growth, recurrence is provided against. Had Dr. Burow attended to this detail in the case reported by him, he would have avoided the recurrence which marred his otherwise complete success.

ART. XIX.—*Notes on Cases of Fever treated in the Field Hospital, Camp Nicosia, Cyprus, in 1878.*^a By SURGEON-MAJOR JACKSON, C.B.

As most of the men who suffered from fever were Royal Engineers (as far as my charge extended), I may mention that the 31st company of sappers, with some telegraphers of 22nd and 34th companies, and the men of the Army Hospital Corps, whose cases are also included in my notes, left Southampton on 13th July, 1878, and disembarked at Larnaca on the 29th of same month. The strength of the 31st company was 3 officers and 155 men. The company marched from Chiflik Pasha on the evening of 5th August, and reached the Monastery camp on the morning of 7th August—the distance from camp to camp (30 miles) being divided into three marches; and from Surgeon Bennett's report it appears there were no cases of illness on the road.

The camping ground was close to a monastery, and about one mile from Nicosia, and the plateau extended for several miles, there being a gentle slope from the south-west to the north. This plain is a deep, rich alluvial soil, water being found at an average depth of forty feet. The land at this season is generally out of cultivation, except where crops of cotton and madder are

^a Read before the Medical Society of the King and Queen's College of Physicians in Ireland, on Wednesday, May 7, 1879.