SOCIETIES' PROCEEDINGS.

ROYAL SOCIETY OF MEDICINE.—LARYNGOLOGICAL SECTION.

May 3, 1918.

President: Dr. A. Brown Kelly.

Abridged Report.

Brain from a Patient who presented Nystagmoid Movements in the Pharynx and Larynx.—A. Brown Kelly.—The patient, aged sixty-three when first seen, complained of occipital pain, which he attributed to his nose. This was sunken owing to tertiary ulceration.

On examining the pharynx nystagmoid movements of (*a*) the posterior wall, (*b*) left tonsillar region, and (*c*) left half of the soft palate were observed. The "short phase" of (*a*) was to the left, and of (*b*) to the right, so that the twitchings seemed to converge to the lateral wall. The movements of (*c*) were barely discernible.

In the larynx similar twitchings were present during quiet respiration, but on phonation were lost sight of, the cords being approximated normally. The nystagmoid movements took place during both inspiration and expiration, and were greatest at the left vocal process and left arytænoid. They were more noticeable during expiration when the vocal cord was swung inwards by a series of four or five to-and-fro jerks, which, as in the pharynx, were unequal and arrhythmical. The right half of the larynx was affected, but to a much less degree. Over 130 to-and-fro movements were executed per minute.

The man was examined occasionally during the next two years, but no change was noted in the appearances above described. Shortly after his last visit he died from apoplexy.

The *post-mortem* examination showed that the patient's mental state was due to cerebral softening associated with cerebral arteriosclerosis, and that death was brought about by hæmorrhage into the cerebellum, with pressure on the pons and medulla. Owing to these gross changes, which were long subsequent to the onset of the nystagmus of the vocal cords, it is very difficult definitely to relate this rare condition to a particular lesion of the nervous system. The changes mentioned are, however, to be attributed without doubt to disease of the vascular system

https://doi.org/10.1017/S1755146300020503 Published online by Cambridge University Press

represented by endarteritis obliterans and thrombosis of the larger cerebral vessels, and fibrosis of the capillaries and small arterioles; these lesions were wide-spread and essentially syphilitic in character.

It would appear legitimate to conclude that the nystagmus of the vocal cords was a comparatively early external manifestation of disturbed nervous function resulting from interference with the blood-supply to the nervous mechanism. The site of this circulatory disturbance was probably in the cerebellum. Capillary fibrosis was particularly marked in that organ, and there, too, the final disturbance took place which terminated in death. Further, it is especially deserving of note that the circulation through the superior cerebellar arteries must have been deficient for some considerable time. At the points of origin of these vessels from the basilar artery the latter vessel was almost occluded by a thrombus which gave evidence of age in well-advanced organisation. The thrombus encroached on the lumen of both cerebellar arteries, but more especially on that of the right side. Both vessels were at the same time affected by endarteritis. Deficiency of circulation in these arteries would be compensated to a greater or less extent through the anastomosis which exists between the superior and inferior cerebellar arteries. In point of fact the inferior cerebellar arteries were noted to be injected and prominent, especially on the right side, whilst the branches of the superior cerebellar artery on each side were small and empty in comparison. Of the two inferior cerebellar arteries, the posterior, which is derived from the vertebral artery, was especially well filled with blood. Compensation, established in this manner, which might well have been ample enough to prevent extensive softening of the cerebellum, such as might have betrayed itself by gross signs (vertigo, ataxia, vomiting, etc.), was yet sufficiently incomplete or irregular to give rise to minor functional disturbance.

Mr. Lambert Lack: I have published a paper on this subject reporting two of my own cases and many collected from the literature. The cases were divided into two main groups. Most of them developed, sooner or later, gross brain disease, generally cerebellar, of which they died, but in a large number of cases the movements ultimately passed off. The movements in both cases were very similar, and in the latter class they were usually associated with some irritation of the throat, such as pharyngitis sicca. Nearly all the cases were in young people.

Simple Method of Recording Diagrammatically Movements of the Vocal Cords, with Special Reference to Tremors. (Epidiascope Demonstration.)—A. Brown Kelly.—We hope to publish this item as an original article in this journal.

Epithelioma of Larynx removed by "Window" Resection of the Thyroid Cartilage.—H. Lambert Lack.—The patient, a male, aged fifty-nine, seen in March, 1917, had been hoarse for four months. There was a growth about the centre of the left vocal cord. A piece was removed for diagnosis and reported to be epithelioma. The operation was performed by the method described in the *Lancet* of November 11, 1916. A transverse incision was made at the level of the crico-thyroid membrane, the left ala of the thyroid exposed and a large square piece of it removed. The larynx was then opened, and the growth, with the left vocal cord and the surrounding parts, freely removed. The wound was partly sewn up. No tracheotomy was performed. There was no trouble with bleeding.

https://doi.org/10.1017/S1755146300020503 Published online by Cambridge University Press

The patient made an uninterrupted recovery and in two months was back at his work as a commercial traveller, having a very fair voice.

The second patient, a male, aged seventy-two, first seen in June, 1917, complained of loss of voice since November, 1916. There was a large growth in the centre of the right cord, a piece of which, being removed for diagnosis, was found to be epithelioma. The operation was performed in the same manner as in the last case on July 6 and the patient made a rapid recovery. In spite of his age he had no bad symptoms, but has since remained well and has a good voice.

These two cases are shown to illustrate the method which I advocated over a year ago, and demonstrate, I think, all that was claimed for the operation.

Dr. Irwin Moore: Mr. Lack's operation has restored a good voice to the patients, though I do not admit it is better than in cases dealt with by thyro-fissure. When Mr. Lack drew our attention to one of his cases in 1916 he told us he had carried out this modified procedure in his earlier thyro-fissures, but subsequently adopted the "usual method." Dr. Kelson asked him why he had allowed such a long interval to elapse before reviving it. Mr. Lack claims no less than sixteen advantages for his modified operation over thyro-fissure: I shall criticise these *seriatim*. The first advantage stated is that a better view and better access are obtained: but we can get all the access that is necessary by thyro-fissure performed in the usual way, especially if we use a self-retaining graduated retractor. The second advantage is stated to be that there is no occasion to split the thyrohyoid membrane. I have been associated with my colleagues in over forty thyro-fissures during the past twelve years, and have not known a case in which it had been necessary to split that membrane. Mr. Lack says, "Violently pulling apart the two halves of the larynx in thyro-fissure causes discomfort and difficulty in swallowing"; but there is never any force used and no need to draw the thyroid alæ violently apart. The only occasion which I know of where difficulty in swallowing occurred was in a case where an extensive growth involved the arytænoid cartilage and necessitated removal of its greater portion. Mr. Lack says his modified operation is more rapid; but on a previous occasion when I saw him operate, the incision across the neck was attended with so much bleeding that it took considerable time to check it by compression-forceps. All operators agree that there is no necessity for haste, and success in thyro-fissure depends on a slow, careful and deliberate operation. Mr. Lack maintains that it is easier to control hæmorrhage by his method, but thyro-fissure as now performed is practically a bloodless operation. Endolaryngeal hæmorrhage seldom occurs, but if there is a bleeding point it is generally on the outer side of the arytænoid after the growth is separated, and bleeding can be stopped by gauze or pressure-forceps. The late Sir Henry Butlin stated that he had not known a case in which hæmorrhage gave him any anxiety. Mr. Lack says there is the advantage of a more thorough removal of the underlying cartilage. Why does he depart from the old-established rule of freely removing the whole of the growth without unnecessarily sacrificing healthy tissue? Butlin pointed out that the perichondrium acts as such a strong resisting barrier between the growth and the cartilage that very rarely was the cartilage infiltrated, and if it were it sufficed to take a thin slice off the inner surface or to remove the portion of cartilage affected. Mr. Lack states that there is less trouble with the anæsthetic and less danger of blood entering the lungs. I am sure any anæsthetist would prefer to give an

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anæsthetic for a laryngo-fissure with a tracheotomy tube in position than in an operation carried out by Mr. Lack's method. I have spoken to several anæsthetists on this question and they agree. In thyro-fissure, as usually carried out, if preceded by temporary tracheotomy, the risk of blood entering the lungs is avoided. Again, Mr. Lack says, if packing is necessary, it is easier to introduce and remove; but this cannot be admitted. The risk of cell-transplantation is said by Mr. Lack to be less by his method than in the usual thyro-fissure. Now, Mr. Lack has published an important paper on the subject of cancer re-infection, yet in his method of performing the operation the serious and unnecessary risk of cell-transplantation is absolutely ignored. He suggests two modifications of the operation: (*a*) A preliminary thyro-fissure followed by resection of a piece of the cartilage; but this has invariably been carried out in the past if the growth has infiltrated the cartilage. (*b*) A preliminary "window resection" of the cartilage. The objection to this, however, is that the extent of the disease cannot be ascertained, as is possible by the usual thyro-fissure, and in reflecting the cartilage off the soft parts, by undermining it with the dissector, one may break into the growth, which may have extended through the perichondrium and infiltrated the cartilage, and so cause the very cell-infiltration which it is so important to avoid. Mr. Lack says no necrosis of cartilage occurs in his modified operation, but no necrosis of cartilage should occur in thyro-fissure. It has not occurred in any of the forty cases I have been concerned with, since the days when stripping the external perichondrium off the cartilage was discontinued. In conclusion, there appear to be some advantages in the modified operation suggested by Mr. Lack, for I agree with him that it may be possible to remove a more extensive growth than by the usual method of thyro-fissure, but it can never be an alternative to, or take the place of, the present-day method of performing thyro-fissure in those early cases in which thyro-fissure is indicated. If carried out only in advanced cases of endolaryngeal cancer which have passed the ideal stage of thyro-fissure, and if preceded by a preliminary thyro-fissure, Mr. Lack's modified operation should prove of great value and take the place of hemi-laryngectomy, because the framework of the larynx is left intact, thus avoiding the risks and disadvantages of hemi-laryngectomy. Mr. Lack thinks that his suggestions make the operation of thyro-fissure more easy, but thyro-fissure is in itself a simple operation, the difficulties met with being mainly post-operative. Sir StClair Thomson recently remarked in connection with thyro-fissure that the simpler the operation the more perfect it is likely to be, and that we have now got beyond the complications which were formerly experienced. I think that we have now overcome with our present-day technique all the difficulties which were formerly associated with this operation.

Mr. TILLEY: I have no extensive experience of Mr. Lack's "window resection." Since the matter was described two years ago I have employed it in two cases, and I did not see any particular advantage in it over the ordinary laryngo-fissure. The cases did well, but no better than after simple splitting of the larynx. I agree with many of the points made by Dr. Irwin Moore in favour of laryngo-fissure. The retraction of the two halves of the larynx need not be violent, and the view obtained is as good as one could wish for. With regard to difficulty in swallowing, in a case I operated on three weeks ago both vocal cords were extensively diseased and both were removed, and there was great difficulty in swallowing for three days. Feeding was carried

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on *per rectum* for forty-eight hours, and afterwards the patient could swallow liquids by the mouth. Of eighteen or nineteen laryngo-fissures which I have performed, that was the only one in which there has been difficulty of swallowing. Mr. Lack's operation is practically a hemi-laryngectomy, just leaving the upper and lower borders of the thyroid wing to support the parts afterwards, and when such an operation is necessary I agree that Mr. Lack's modification might be very useful, and also when one is not sure whether the disease has pierced the cartilage, because I feel that when there is even a tiny button of disease to be seen on the outer surface of the cartilage the prognosis is not good, and recurrence is probable unless free removal of the disease has been carried out.

Mr. W. Stuart-Low: Mr. Lack's results are very good, and I am particularly pleased to see he did not perform tracheotomy. When doing laryngo-fissure most operators still perform tracheotomy, but in many cases there is no necessity for it. The operation for laryngo-fissure is a comparatively simple and easy one, as, if the incision is kept in the middle line, no vessels are encountered. Another point in favour of dispensing with tracheotomy is that the operation is quite quickly performed. I know of cases in which this operation of laryngo-fissure was prolonged for an hour, but I cannot see why this is at all necessary, especially if tracheotomy is dispensed with.

Dr. H. J. Banks-Davis: If the operation is done with only local and not general anæsthesia, tracheotomy may be dispensed with. But if the patient is anæsthetised it is safer to perform tracheotomy, because there may be bleeding when the growth is cut into. If the patient is anæsthetised he cannot cough this blood up, whereas he could if under local anæsthesia.

Mr. E. D. D. Davis: My experience of Mr. Lack's method gives me the impression that a better exposure, particularly of the arytæno-epiglottidean fold, is obtained, and it is in this soft tissue that a recurrence takes place; also in the position of the ventricular band. It may be necessary to divide the thyrohyoid membrane. Difficulty in swallowing after laryngo-fissure is due to removal of the arytænoid cartilage, and severe injury to the arytænoid region may result in having to feed the patient by tube. If the growth is divided with a sufficient margin, leaving the arytænoid cartilage more or less intact, the patient does better and makes a more rapid recovery.

Dr. J. W. Bond: The voices in Mr. Lack's cases are unusually good—better than we generally get in cases where laryngo-fissure has been done. One of these patients is young, and so one would expect a good recovery. I have done laryngo-fissure without tracheotomy; the need for that depends on the case. I have tried local anæsthesia once or twice, but it has ended in a general anæsthetic having to be given and a tracheotomy done. Hæmorrhage in some cases is severe. In a case I operated on three years ago I put eighteen ligatures on before I got into the larynx; I suppose the patient had some arterio-fibrosis; he is alive yet. I think the great merit of Mr. Lack's operation is that it enables the operator to obtain a good view of the parts. In laryngo-fissure my great difficulty has been to see the interior of the larynx sufficiently, and I cannot agree with a previous speaker that one readily gets a good view. I once did the operation on a woman who had an inch of fat over the larynx and it was very difficult to see the parts properly, but in Mr. Lack's procedure one can see through a large round opening. As to operating when the

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cartilage is affected, I had a case of malignant disease perforating the cartilage; I did not do a hemi-laryngectomy; I removed all the cartilage round the growth as well as the growth, and the patient did very well and is still alive.

Dr. IRWIN MOORE: I would like to ask Mr. Lack how he decides which way he will do the operation in any particular case, whether by preliminary fissure and resection of cartilage, which is what we do now under thyro-fissure, or by preliminary "window resection" of the cartilage without fissure.

Mr. LAMBERT LACK (in reply): I am very glad that this operation has met with criticism. I would do the operation in the way I have last described; the first method, which I showed here two years ago, was the first step which led on to the second and better method. The first cases showed it was possible to do the operation and get a good result by removing the cartilage. That simplified the operation a good deal, but the treatment I now carry out simplifies it still more. The operation is simpler than thyrotomy; there is no need for tracheotomy, and it takes only half the time. There is no question that by this method the operator does get a better view. With regard to its being a more complete operation, I think those who spoke rather admitted that when they said it might take the place of hemi-laryngectomy. If that is so, and if it is suitable for cases which are too advanced for thyrotomy, it is admittedly a more complete and a better operation. I showed these cases, not to discuss the operation, but to show that the after-results are as good as those obtained by any other method.

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