SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY.

May 6, 1927.

President—Dr ANDREW WYLIE.

Epidiascopic Demonstration of Chronic Hypertrophic Laryngitis with Some Observations on Treatment—W. JOBSON HORNE, M.D.—Dr Jobson Horne said the subject was large and the time allowed was ten minutes. It would not be possible, therefore, to do more than touch upon some of the outstanding clinical features and to summarise the results of his own investigations. He would speak about the excrescences met with in the interarytenoid space and at the site of the vocal processes in that form of chronic hypertrophic laryngitis commonly called pachydermia laryngis verrucosa.

In the first place he must be allowed to stress the fact that the laryngoscope, after revealing important clinical signals and the wonders of the larynx, was in a sense a superficial instrument inasmuch as it showed the larynx only in one plane, and it might be misleading unless laryngoscopy were followed up by visits to the post-mortem room or to the museum to ascertain the unseen extent of the disease and the relationship of the parts above to the parts below.

Interarytenoid Excrescences.—The foregoing remarks were particularly applicable to interarytenoid excrescences or growths as they were called. When such a growth was of unusual size, clinically, the laryngoscope suggested it was in the same plane as the vocal cords, interfering with the vocal function, causing the hoarseness or the loss of voice, and calling for removal. As an anatomical and pathological fact that was not so.

By way of illustrating the point, photographs were shown of the picture in the mirror taken during life, and the post-mortem appearance of the opened larynx. The latter demonstrated the true relationship of the growth to the vocal cords, the growth being on a much higher plane than the cords.

The two photographs reproduced are of a larynx obtained some thirty years ago. It will be observed (Dr Horne said) that contrary to the usual practice, he had opened it by a vertical incision through the anterior commissure, a method to be commended when, as frequently was the case as in the present one, the posterior half of the larynx was the seat of the disease.

The larynx presents the characteristic features of pachydermia laryngis simplex verrucosa et diffusa.

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In Fig. 1 the specimen has been photographed from above. The photograph shows the interarytenoid excrescence above the plane of the vocal cords, also the central furrow giving the excrescence a bilobed structure.

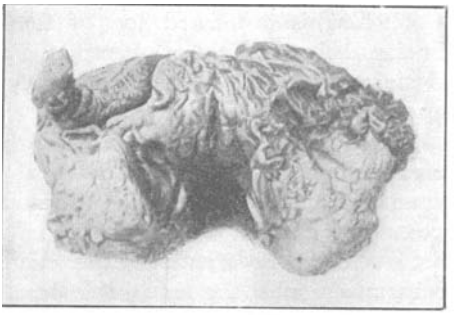


FIG. 1.

Fig. 2 shows not only the bilobed interarytenoid excrescence, but also the excrescences and depressions on the posterior parts of the vocal cords, as well as the diffuse nature of the pachydermia.

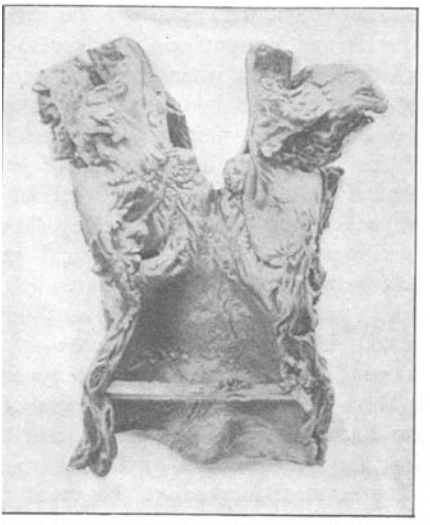


FIG. 2.

The Differential Diagnosis of Interarytenoid Excrescences.—In 1905, he (Dr Horne) demonstrated to the Laryngological Society of London,* a point in the differential diagnosis of interarytenoid excrescences.

* *Vide Proc. Laryng. Soc. Lond.*, 3rd November 1905, xiii. 12.

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In pachydermia simplex the excrescence is placed centrally and is bilobed; these two points serve to distinguish it from the tuberculous nodules or granulations so frequent in the interarytenoid space; they are placed more to one or the other side of the middle line, are less uniform, and the epithelial covering is crenated, thinned, and, perhaps, ulcerated. The bilobing is accounted for by the excrescence in pachydermia simplex being merely a hyperplasia of pre-existing tissue, and so retaining the central fissure commonly present in the interarytenoid space.

Excrescences at the Site of the Vocal Processes.—At one time it was taught* that the excrescence at the site of the vocal process on one vocal cord produced by pressure the crateriform depression at the site of the vocal process on the other vocal cord. From the appearances in the mirror that seemed to be a natural explanation. At the same time it did not harmonise with the remarkable absence of complete loss of voice which one would have expected to result from the pressure required to bring about the condition met with. The appearances in the mirror seemed to him (Dr Horne) to be misleading.

The following is a summary of the results of his investigations communicated to the British Medical Association at Portsmouth in 1899. First, in all the specimens examined the depression or pouch was found to be *bilateral:* it was usually more marked on one side than the other, but it was present on both cords. Secondly, in no case did the pouch or depression, when examined under the microscope in serial sections, present evidence of pressure or attrition. On the contrary, a greater degree of hyperplasia was found. The theory of the formation of the depression by pressure was, therefore, entirely refuted by histological evidence.

Thirdly, there was histological evidence to show that at certain spots the mucous membrane below the vocal process was more intimately adherent to the underlying cartilage.

Based upon his pathological findings, the following explanation of the whole question is offered by Dr Horne:—

(1) In the *normal* larynx a line formed by a fold of mucous membrane starts from behind the vocal process of each cord, and takes a crescentic course, passing downwards and forwards, running immediately below the process and parallel to the middle third of the cord. The line is most marked at the vocal process and then thins off. It is more apparent in the male sex, and pachydermia laryngis is more frequently met with in the male sex. The mucous membrane immediately above and below this fold is more intimately adherent, hence the fold. The fold itself may be duplicated, and occasionally may be so marked as to suggest in the image a second cord.

* *A System of Medicine*, by Professor Clifford Allbutt, 1897, iv. 790.

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(2) In pachydermia laryngis the changes in the region of the vocal process — as observed at an autopsy — are symmetrical and bilateral.

(3) When, in the later stage of pachydermia, a warty growth appears in the region of the vocal processes it is not strictly a neoplasm. It is only a localised hyperplasia, or exaggeration of a pre-existent structure, viz., the fold or line of mucous membrane already referred to as a line of traction.

(4) The mucous membrane immediately above and below the part of the fold that has become exaggerated is more intimately adherent, hence the furrow or depression. In this way there is formed at least one depression or pouch on each cord. It follows that the unilateral theory of the pouch cannot stand.

(5) These furrows and excrescences about the vocal processes being developed at symmetrical spots and in the same plane, presumably would interfere with the apposition of the cords and the production of voice; but, clinically, this apposition is not interfered with—at least, not sufficiently to prevent phonation. The solution of this difficulty rests in the following observation.

(6) By the time the warty condition about the vocal processes is established, *the cords* were found *to be no longer on the same plane.* An alteration in the plane of the cords may be observed clinically, and, *however slight*, at once explains the preservation of the voice. For one cord has to be only on a level very slightly higher than its fellow to permit of a dovetailing, or interdigitating, of the excrescences and depressions and the preservation of the voice.

The alteration in the plane of the cords was verified in the following way. An entire larynx showing typical pachydermia was hardened without being cut open so that the cords were preserved in the same position as at the time of death. The larynx was then set up in hard paraffin and vertical sections were cut at right angles to the vocal processes and the relative positions occupied by the cords were demonstrated as described above.

Some Observations on Treatment.—One point that must first be considered is: Do these cases of pachydermia ever become malignant? Dr Horne had no hesitation in answering the question in the negative.

Operative treatment in the interarytenoid space had its limitations. Beneath the excrescence is the transverse muscle. Cicatricial contraction may cause laryngeal stenosis. For that reason Dr Horne was opposed to the application of diathermy in the interarytenoid space. When an interarytenoid growth had to be removed he used fine punch forceps.

Pachydermia verrucosa was always accompanied by pachydermia diffusa, involving the voice-producing parts of the larynx. Moreover,

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pharyngitis commonly co-existed. It followed from the demonstration that the removal of an interarytenoid growth to cure the hoarseness would be a fallacy. Pachydermia laryngis is part of a constitutional condition. It is more important to treat the patient than it is to treat the larynx.

Mr MUSGRAVE WOODMAN asked what proportion of these cases was tuberculous? What were the indications for removal of a portion of the growth by punch forceps? He gathered that Dr Horne considered removal did not improve the voice, and there was some risk in removing mucous membrane and leaving bare the deeper surface.

Mr J. F. O'MALLEY said that with regard to the simpler case, Dr Horne had made an illuminating remark which probably supplied the key to the question as to the cause, namely, that in these cases there was always pharyngitis, and all the pharyngeal tissues, especially in the uvula, were hypertrophied. It was only necessary to transfer to the uvula the changes seen in the larynx to account for the laryngeal condition. The reason for the changes was that the interarytenoid tissues were bearing the brunt of any disturbance caused by the respiratory changes in the mucous membranes of mouth breathers, as seen so commonly in the pharynx. He had long considered that they were entirely due to an attempt by the pharynx and larynx to perform the function which should normally be performed by the nose.

Sir JAMES DUNDAS-GRANT said he had frequently confirmed Dr Jobson Horne's generalisations, particularly the statement that when the interarytenoid swelling was either asymmetrical or more on one side than on the other, the condition was almost invariably tuberculous. When the swelling was mesial and somewhat diffuse, it was often due to the influence of secretions from the nasopharynx and the nose. In a doubtful case one had to exclude the nose as a factor mainly by means of nasal douching, as secondary laryngitis could simulate tuberculosis to an extraordinary degree.

Weleminski had recently carried out investigations as to the effect of large masses of pachydermia of the vocal process on the muscles of the larynx. The pachydermia interfered with the approximation of the vocal processes, and the direction of pull of the vocal muscle and the lateral crico-arytenoids, with disturbance of voice.

With regard to the removal of interarytenoid growths, he had seen these as low as the level of the vocal cords, and so pedunculated that one was able to remove the swelling and so greatly to improve the voice.

The use of the cautery in the interarytenoid space called for great care, as the least wished for result was to produce a cicatrix and adhesions between the arytenoid cartilages. He himself used the cautery in the larynx, but was very careful about introducing it into the interarytenoid region. He did not apprehend any danger in the removal of tuberculous tissue; he had removed a tuberculous growth from the anterior commissure. In another case a bar of tuberculous tissue between the arytenoid cartilages interfered with their function, and kept them apart so that regurgitation of liquid into the larynx occurred when the patient drank. After removal of the growth the glottis closed sufficiently to enable the patient to drink.

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Dr P. WATSON-WILLIAMS asked whether Dr Jobson Horne had himself made investigations or knew of any made by other observers on the possible association of infecting organisms with these epithelial thickenings; this was suggested by the frequent chronic pharyngitis and nasal conditions. The analogue of these chronic thickenings was seen in the common corn, which was now recognised as a local infection. Was there in these cases some chronic infection which gained entry into the deeper layer of the epithelium and caused the persisting hypertrophy?

Mr HAROLD BARWELL said that the removal of tuberculous infiltration beneath intact epithelium appeared to do no harm. In the case described by Dr Horne there was further tuberculous infiltration in the larynx on the epiglottis and elsewhere, and he did not think he would have removed the outgrowth in those circumstances. Still, the second slide showed that the larynx considerably improved. He (the speaker) used to employ punch forceps in cases with dysphagia and infiltration of the epiglottis and arytenoids, and the procedure largely increased the patients' comfort. He had seen two cases in which the lesion had been confined to the epiglottis, and removal of the epiglottis had resulted in complete arrest of the disease.

Mr T. B. LAYTON asked whether it was ever of any value to remove a piece from the larynx for diagnostic purposes. There had been many convinced by the arguments against doing so in order to determine whether a given condition was malignant or not. To-day it had been suggested that it was not advisable to remove a piece when the disease might be tuberculosis or a gumma. Were there any cases left in which help would be gained by the procedure?

Concerning the point raised by Mr O'Malley, he (the speaker) would carry it further. These patients not only had hypertrophy of the structures of the pharynx, but most of them had chronic hypertrophy of subcutaneous tissues generally; the subjects were generally stout people with a tendency to two or more chins, and he had therefore wondered whether there was some diathesis which accounted for the condition.

Mr A. SHARP (Leeds) said the condition often supervened in long-drawn-out sinus affections. He believed that the easiest and best treatment was electro-cautery. He had used this frequently for tuberculous lesions, especially for interarytenoid infiltrations, and had never known any detrimental cicatrix, or any serious reaction ensue.

Specimen of Ethmoid showing Healed Fracture—W. M. MOLLISON, F.R.C.S.—The ethmoid showed an old healed fracture with a depression through which the dura mater herniated into the roof of the nose; also recent damage at operation. It was removed from a man aged 35.

He had a severe accident fifteen years ago; no taste or smell since, and nasal obstruction. Some months ago polypi were removed by his doctor; recently, further operation under chloroform; operator feared the forceps had removed a piece of the brain (this confirmed by microscopical examination). Patient was admitted to hospital and died within a week.

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Specimen is shown to illustrate the dangers of operation on the ethmoid in a case of old fracture of the anterior fossa of the skull.

Dr P. WATSON-WILLIAMS said that it was fortunate in this case that an expert like Mr Mollison was able to prove that coexisting conditions exculpated the operator. Apparently there had been absorption of bone in the anterior part of the left side of the crista galli, which suggested that the first trauma had been followed by bone absorption, which might have affected the region of the cribriform plate. Had the polypoid degeneration extended so high as to involve the cribriform plate and upper ethmoid cells? He himself often felt diffident about trying to obtain a radical cure in cases of chronic ethmoiditis with chronic polypoid degeneration extending very high up, because, however successful one was in avoiding injury to the cribriform plate, one could not be certain there would not be infection spreading up through lymphatics or veins and resulting in meningitis.

Mr SOMERVILLE HASTINGS said that, with this specimen before him, he found it difficult to feel sure that the surgeon "went through" in the neighbourhood of the injury.

Mr W. J. HARRISON (Newcastle) said he had recently had a catastrophe of much the same kind when operating on a pensioner who had had two previous operations, one on the frontal sinuses, and, later, another on the ethmoid cells. A great deal of pus had been present. The frontal sinus operation had been performed during the War, and he (the speaker) did not know the extent of the previous operation in the ethmoid region. A skiagram did not give any help; with the mirror some prominence could be detected in the region of the upper anterior cells and there was a good deal of pus always present there. There was a good deal of bronchitis. As the usual landmarks had gone, he had to proceed carefully. While he was using the punch forceps there was a gush of pus, and when he tested with the probe he found he was up against the brain, although he had not removed any bone. The patient developed symptoms of meningitis, and died in forty-eight hours.

Dr W. H. KELSON said the position of the head during operation was very important. In two unfortunate cases the head had been horizontal.

Dr F. SPICER said that many years ago he had shown such a case and the patient had been in the sitting posture during the operation.

Mr MOLLISON (in reply) said that no doubt the old fracture had produced the hernia; there was a depressed scar at the front on the left side and a resulting thinning of the whole cribriform plate. The thinning of the bone accounted for the ease with which the forceps went through. He believed the operator went through behind the hernia.

In the present case the patient had been lying down during operation and the anæsthetic used was chloroform.

Hysterical Spastic Aphonia—Sir JAMES DUNDAS-GRANT, M.D., F.R.C.S.—A middle-aged woman with five children, subsequently subjected to the operation of hysterectomy, suddenly lost her voice

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in November 1926. She had had some domestic anxiety and had been obliged to use her voice excessively. She was first seen by me on 8th February 1927; she was then voiceless except for a soft whisper. Laryngoscopic examination showed such extreme adduction of the vocal cords that apparently no vocal vibration could be effected, while for inspiration the cords separated to the fullest degree. There were no signs of tuberculosis. The usual persuasive methods failed to produce any effect; the larynx was syringed with an anæsthetic solution from time to time, and faradism was employed and a combination of bromides and valerian was prescribed. Her voice suddenly returned in the night a fortnight after the institution of treatment and three months after the first loss of voice.

The case was obviously one of hysteria and not to be confounded with the singular cramping of vocal muscles in preachers which Morell Mackenzie and Semon have described (Heymann's *Handbuch*), and which seems to be resistant to every kind of treatment. I have seen only two cases of this condition.

Peritonsillar Forceps—ANDREW WYLIE, M.D.—The exhibitor has used these forceps for two years. No knife is required; the forceps are easy to manipulate when the mouth is almost clenched and they are easily opened. The handle is constructed so that the operator's hand does not obstruct the view of the throat.

Acute Frontal Sinusitis, with Abscess of Forehead—HAROLD KISCH, F.R.C.S.—Patient, female, was admitted to hospital with an abscess in the midline of the forehead, just above the root of the nose. There was tenderness over the left frontal sinus, and pus could be seen under the left middle turbinal. An incision was made along the supra-orbital margin and extended down the side of the nose. The soft parts, including the contents of the orbit, were retracted. The ascending process of the superior maxilla was resected, and the floor of the sinus removed. The sinus was found filled with pus, and there was a perforation the size of a sixpence in the anterior wall. Through this the abscess in the forehead was evacuated. The anterior frontal spine was chiselled away, and some anterior ethmoidal cells were removed. Drainage was provided by a tube into the nose, and another one passing out through the supra-orbital incision. Convalescence was uninterrupted, the patient is now quite well, and there is no deformity of any kind.

Mr LAYTON congratulated Mr Kisch on the way in which he had drained the subcutaneous abscess. A case had been shown before the Section in which in addition to the supra-orbital incision a transverse one had been made, leaving an ugly scar. He himself had shown a case in which, to avoid this ugly scar, he had made a flap with the incision up in the hair-line, thence across to the eyebrow, bringing it vertically

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in the midline. He would not do that again, as the flap contracted to a quarter of its former size, and a great deal of tugging was necessary to get it into place. The corners sloughed. It was important to note that in Mr Hirsch's case drainage of the subcutaneous abscess was effected by way of the frontal sinus.

Mr F. B. GILHESPY said in these cases the posterior wall of the frontal sinus should be examined as a dural abscess or an extradural abscess might be present. There was a risk, however, as this examination was not always possible in this method of operating.

Mr A. D. SHARP said that two similar cases had been sent to him by the same medical man within the last three months, each with a history of influenza. One patient complained of a swelling in the forehead extending to the hair-line; otherwise he felt in good health. There was no doubt about the frontal abscess, and there was a septic condition of both ethmoidal regions, and polypi were present. An incision was made in the midline, and a large quantity of pus escaped. Drainage continued for two days. Some dilatation of the left pupil developed, and the patient became drowsy. The frontal sinuses were laid open, and the anterior wall was cleared; there was much swelling of tissues. Pus welled through from the dura mater and its flow increased when the dura mater was pressed away. Death occurred two days afterwards. At the post-mortem examination the whole left hemisphere was found to be bathed in pus. He could not ascertain whether there was a loss of bone, and on stripping back the dura mater no area could be found in which pus had welled through from the brain. It was extradural, and it was remarkable that the man had felt well for so long.

In the other case there was no tenderness or anything suggestive of sinus trouble; the nose was healthy and there was no evidence of pus, nor was there a raised temperature. When an exploratory incision was made in the midline a large amount of pus was encountered; the whole anterior wall of both frontal sinuses had been absorbed. The tissues were so much infiltrated that further operation was postponed and fomentations were applied for two days. All the diseased bone and the unhealthy tissues so far as possible were then removed. The septum between the sinuses had been partly absorbed. Several areas of bone had suggested osteomyelitis. On the left side there was no communication with the nose. On the right a large communication was made for drainage. After a few days a lateral incision was made in addition to the central one, and was kept open by external drainage. That was two months ago and the patient had now been back at work three weeks. There was little deformity remaining.

Mr KISCH (in reply) said that the surgeon must decide on the best method of treating each individual case; no rule could safely be laid down. The essential point was to obtain proper drainage, and, if necessary, an external incision must be made. He had had three or four similar cases, and the amount of drainage secured had been adequate. The exposure at this operation enabled examination of the frontal sinus to be carried out, including its anterior wall, and the bone disease was seen not to be extensive. He did not say that he had treated osteomyelitis

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of the frontal bone by this method. It was necessary to distinguish between frontal sinusitis with subsequent osteomyelitis of the frontal bone (of which the present case was an example) and primary osteomyelitis of the frontal bone, cases of which required more extensive external incisions.

Ulceration of Gum: Hypertrophic Laryngitis: Case for Diagnosis—C. GILL-CAREY, F.R.C.S.E.—Female, aged 24, a school teacher, lived in the Shetland Islands. She attended hospital in January 1926, with a history of hoarseness for one year; general health good.

Examination of the larynx showed nodular hypertrophy of both true and false cords. No tubercle bacilli were found in the sputum.

Tissue removed from the larynx by the direct method was reported on by Dr Scott Williamson as: "Simple chronic inflammatory. No evidence of tuberculosis."

In March 1926, hypertrophied tissue was removed from both cords, after exposure of the larynx with Haslinger's directoscope.

Re-admitted, 20th April 1927. She states that her voice returned for six months but is now as bad as before. Has had an ulcer on her gum for the last twelve months which has not healed in spite of much local treatment.

Specimens removed from the gum and larynx were examined by Dr Scott Williamson, who reported on both sections as: "Sub-epithelial granuloma; no sign of tuberculosis."

Wassermann reaction negative.

Sir JAMES DUNDAS-GRANT thought the condition was so suspiciously like tuberculosis that the patient should have a period of rest, with treatment on sanatorium lines, light treatment being applied to an indifferent part of the body.

Mr T. B. LAYTON suggested that the appearance of the mucous membrane on the gum of the upper jaw proved this to be a case of lupus. Removal of a portion from the larynx had not advanced matters, and might have done some harm in such a case. He thought the condition of the mucous membrane of the mouth could be treated by diathermy, either under general or local anæsthesia. He thought the larynx should be left alone, subject to there being no suspicion of disease in the lung, and if the patient's work was not very hard she could be permitted to continue with it, under the stipulation that she took care of herself and kept quiet in the evenings. He would prescribe a tablespoonful of cod-liver oil to be taken every morning of her life.

Mr HAROLD BARWELL said he considered that the patient was in a critical condition. She ought not to talk and he urgently advised complete rest, and, if possible, sanatorium treatment for a time.

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