again complaining of weakness of voice which had come on a few weeks previously. The *left* vocal cord was seen to be in the cadaveric position. There was no apparent recurrence of cancer *in situ*. Screen examination of the chest was negative. The patient died two months later.

CASE II.—A married woman, aged 40, began to complain, at the end of 1924, of discomfort in the throat, apparently due to pharyngeal catarrh. The *right* breast had been removed two years before for scirrhus carcinoma of twelve months' duration. In June 1925 she again came under notice, with a husky voice of six weeks' duration. The *left* cord occupied the cadaveric position. The right supra-clavicular glands had a shotty feel. Examination of the chest by X-ray screen and film revealed nothing. She died four months later.

Unfortunately, no post-mortem examination could be held in either of the cases.

# SOCIETIES' PROCEEDINGS

## ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY.

*President*—Dr W. H. KELSON.

**May 7, 1926.**

**Hypertrophied Tonsils with Multiple Outgrowths, probably Tonsillar in Structure**—Sir JAMES DUNDAS-GRANT, K.B.E., M.D.—Male, aged 42, had frequent attacks of tonsillitis, one comparatively recent. Enucleation was proposed.

Portion of tissue from the left tonsil was removed for examination to eliminate the possibility of something other than simple growth. It was pure tonsil tissue.

Mr HERBERT TILLEY said that cases of this kind had been shown before the Section from time to time. Many years ago Mr Arthur Cheatle showed one, in which a pendulous growth hung from one of the tonsils. These growths generally originated from the so-called "supra-tonsillar fossa," and they were found to consist of tonsillar tissue which took on a pendulous formation. A few years ago he himself showed a case almost identical with Mr Cheatle's; it also consisted of tonsillar tissue. He once saw a case which looked exactly like the one now exhibited, and in this instance it appeared as if the lymphoid follicles were held together loosely by fibrous tissue supports.



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

Dr W. H. KELSON (President) said he had seen a case presenting very much the appearance as this one, but on section it turned out to be papilloma, though he did not suggest that the present case was of that nature.

Sir JAMES DUNDAS-GRANT (in reply) said he proposed to enucleate these tonsils, and perhaps he would be able to have a drawing made of the case beforehand. Such cases as Mr Tilley referred to had been seen at the Section from time to time; the peculiarity about the present case was the multiplicity of the outgrowths. He had not previously seen a case exactly like the one he was now showing.

**Paralysis of Right Vocal Cord**—F. J. CLEMINSON, Ch.M.—Female, aged 49, was hoarse for four months. No cause of the paralysis was found in neck or thorax; probably due to pressure on right vagus from basilar meningitis of specific origin for which patient is being treated. Wassermann reaction positive; occasionally a weakness of the right side of the palate has been observed.

Exhibitor showed patient because he did not often see right-sided paralysis of the larynx. The previous week he saw another patient who, eleven years ago, was sent into the country for a rest because his medical adviser was suspicious of the condition of the apex of the right lung. Lately he has had "acute laryngitis," has lost his voice, and his right cord was paralysed. It was not in the cadaveric position, but in that of complete adduction, and there was doubt as to whether it might be a paralysis of old standing, or whether, in view of its position, it was recent. No cause could be ascertained. In the case now shown, the lesion is said to be basilar meningitis of syphilitic origin, and though the soft palate has been observed from time to time to show a little weakness on the right side, when she was last seen it was not noticeable.

Sir JAMES DUNDAS-GRANT said that a noisy stridor was said to occur when the patient was asleep. It could be explained by the extreme flaccidity of the right aryepiglottic fold, which was remarkable and unusual.

**Double Abductor Paralysis**—LIONEL COLLEDGE, F.R.C.S.—Male presented himself four years ago, then aged 70, in respiratory distress from double abductor paralysis, apparently of rapid onset in the course of ten days and requiring tracheotomy. The tube was worn for eighteen months, when it was discarded, because it was found that the left cord had become cadaveric, leaving sufficient space for the patient to breathe comfortably through the glottis. Now there is abductor paralysis of the right cord with the left in the cadaveric position. No cause has been found for the laryngeal paralysis.

Dr IRWIN MOORE said that this case was an example, and a very rare one, of Nature's "cure" of double abductor paralysis. In 1923 he went through much of the literature, and he believed that this was the first



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

case of this character shown at a meeting of this Section. He doubted whether any member had observed a case of double abductor paralysis in which the cord had passed from the mid-line into the cadaveric position. Of fifty-three cases of abductor paralysis recorded between 1892 and 1898, only six developed recurrent paralysis. Of the remainder, twenty-two had unilateral and twenty-five bilateral abductor paralysis, showing how small was the chance that the cords would reach the complete stage of paralysis (cadaveric position). He asked whether any of the senior members had ever seen this occur after the performance of tracheotomy. It was interesting to note that, in the case now recorded, eighteen months elapsed before the stenosis was relieved by the cord passing into the cadaveric position, and the tracheotomy tube could be dispensed with.

He did not think that there was complete fixation of the cord in this case.

Mr COLLEDGE (in reply) said that he had not seen the patient for six weeks. He had been under observation four years, and the swelling, now evident, had appeared since he saw the patient last. Therefore the picture now differed from that described in the notes. He showed the case because he had been able to trace the passage of the position from adduction into the cadaveric position. Some French writers had recently cast doubt on Semon's law, but this patient seemed to illustrate it very well. He had not yet formed an opinion as to the character of the recent swelling. He would show the patient again.

**Nasal Growth for Diagnosis**—ELEANOR LOWRY, M.B.—Boy, aged 12, is shown with a question as to diagnosis.

He has complained of nasal obstruction for the last year, with epistaxis twice within the last six months.

He was sent to the School Clinic as a case of adenoids, but on digital examination under an anæsthetic it was found that he had a very hard, firmly fixed new growth almost filling the right choana. On examination with a nasal speculum, a red granular growth was seen coming from the middle meatus.

Transillumination showed the right antrum slightly dull, but a skiagram revealed it clearer than the left.

Mr HERBERT TILLEY said he made a digital examination of the boy's nasopharynx and found the tumour very hard. He did not regard it as a fibroma, nor an antral polypus, because in each of these conditions it was generally possible to detect some degree of elasticity, whereas this was a very resistant structure. He thought it was probably a cartilaginous tumour, possibly developmental in origin, or it might be a chondro-sarcoma growing from the pharyngeal orifice of the Eustachian tube. He did not know how the diagnosis could be settled unless the patient were placed under an anæsthetic, the surgeon being prepared to deal with the case according to what he found. He suggested that course. In regard to the method of access, he would prefer a modified Rouge operation, which would provide free access under the cheek and lip, and thus avoid cutting the facial tissues. The operation would paralyse the dental nerves which were involved in removal of bone above the alveolus. In order to get



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

a free upward separation of the soft parts one must perform a laryngotomy for the administration of the anæsthetic, and plug the lower pharynx with gauze during the operation on the nasal and post-nasal cavities.

He suggested that the growth was invading the posterior region of the nasal fossa where one could see reddish and œdematous mucous membrane. Anyone who set out to deal with the growth should be prepared to have some trouble with free bleeding, and to minimise this difficulty a free view and good access should be obtained. He was convinced the growth was solid, but he was not so sure of its nature.

Mr H. J. BANKS-DAVIS said that he gently examined the boy's naso-pharynx and he did not agree with Mr Tilley's impression of it. Admittedly it was hard, but very smooth, and might well be a nasopharyngeal polypus nipped in the posterior fossa, for some of these growths become very hard and adherent. Before attempting anything like a Rouge operation, as suggested, he thought that with a finger behind the palate the tumour could be removed by traction through the nose under a general anæsthetic.

Dr IRWIN MOORE said he had not made a physical examination of the post-nasal space in this case, but to him the growth appeared to be an early nasopharyngeal fibroma. Some years ago Mr Tilley expressed the view that many of these fibromata originated from the spheno-ethmoidal recess, which was at variance with the generally accepted view that these growths arose from the special fibrous tissue covering the basi-occipital and basi-sphenoid bones. Their origin from this recess was possible since the fibrous tissue extended to this recess from the post-nasal space. He agreed with Mr Banks-Davis that it should be possible to remove the growth, in this case, via the nose, and he suggested the use of a periosteal elevator designed by Mr Thomas Guthrie, who had operated upon a number of these cases. With this instrument—passed through the nose—the prolongation in the ethmoid region could readily be detached. He would be glad to lend the instrument to Dr Lowry. He himself had recorded a case of nasopharyngeal fibroma which he successfully removed through the natural passages without having to open the face.

He asked that the case should be shown again at the June Meeting, so that opinions could be elicited from more members.

*Postscript.*—With the help of Mr Herbert Tilley, laryngotomy was performed on 31st May, and the growth was separated from the outer wall and removed through the nose.

On microscopical examination it was found to be a fibroma.

*Points of Interest.*—(1) The slightness of symptoms from so large a growth. (2) Its accidental discovery during an operation for adenoids. (3) The extreme hardness, which simulated a chondroma or osteoma.

**Fibro-Sarcoma of Maxillary Antrum**—H. LAWSON WHALE, F.R.C.S.—Boy, aged 13, had a six months' history of swelling of right cheek. With the right eye he counts fingers only at 2 feet; well-marked right optic atrophy and slight proptosis; ocular movements normal. Two pieces were removed from the mass, the first through the nose, the second, a week later, through the canine fossa; these were reported



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

by the pathologist to consist of granulation tissue only. Nevertheless I propose to remove the whole upper jaw, except the hard palate.

Mr HAROLD BARWELL said he looked with the mirror at the post-nasal space of this patient and found it full of a large, red growth, which, as Mr Whale said, seemed to extend right across. He felt certain it was a malignant growth, and he counselled neglecting the pathologist's report. Apart from leaving it alone on the plea that it was too extensive—a view which he did not share—he thought the only course was to attack the growth through an external incision, such as for a modified removal of the upper jaw. This would at least give the patient a chance.

Dr W. H. KELSON (President) said it occurred to him that the swelling might be osteitis fibrosa; that accorded better with the microscopical findings. It was the situation in which that condition often began, affecting first one jaw and then the other. It was generally painless, and was occasionally found at that age.

Sir JAMES DUNDAS-GRANT emphasised the fact that often a malignant growth in the maxilla or in the neighbourhood of the nose was accompanied by the development of a large number of purely inflammatory outgrowths, looking like simple nasal polypi. These submitted to the pathologist might be quite truthfully reported upon by him as innocent, though there might be malignant disease underlying the tissue removed for examination.

Mr H. J. BANKS-DAVIS suggested that before any extensive operation was done in this case, the Erlangen treatment—deep X-ray therapy—should be tried. It was surprising to see how under this treatment large tumours almost disappeared or became operable.

Mr H. LAWSON WHALE replied that at first he thought it was polypoid. Polypi were often the heralds of more serious conditions underlying them. That was why, when he failed to get anything definite from the nose, he opened the canine fossa. There was no massive tumour to shell out; the tumour suggested a granulomatous overgrowth of the lining which could be removed with the curette. He explored by means of vision and the finger as far as possible. If it were osteitis fibrosa he did not think there would be a cavity in the bone. The growth did not close up the lumen of the antrum. There was no egg-shell crackling, and one had to use the gouge and mallet. To the feel, there were rather hard nodular lumps growing from the lining in all sorts of places. There was no more bleeding than from opening the antrum for any other condition, but there was a good deal of bleeding when he removed a piece for examinatlon.

*Postscript.*—After the operation the pathologist reported the growth to be fibro-sarcoma.

## SUMMER MEETING.

### June 3 and 4, 1926.

**Nasal Sinusitis as a Cause of Toxæmia**, by Sir WILLIAM WILLCOX, K.C.I.E., C.B., C.M.G., M.D., F.R.C.P. The Paper is published in the *Journal of Laryngology and Otology*, vol. xli., No. 11, November 1926, p. 709.



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

DISCUSSION.

Sir ST CLAIR THOMSON said that he could produce evidence in support of all that had been said. His (the speaker's) own experience with regard to diabetes and arthritis was limited, but every member present could produce a number of cases showing a connection between ear and eye symptoms and neuralgia, and he had himself had some experience of the bronchial side of pseudo-tuberculous infections.

As to diagnosis, it was agreed that transillumination was not of any value unless one side was compared with the other, and this was also the case with the X-ray findings. The only certain method was that of exploration. He (the speaker) was glad Sir William insisted that radiologists should refrain from diagnosing sinus trouble, not only because such diagnosis had no foundation, but because it frequently put one into an awkward position with regard to the patient, who had probably brought the skiagrams with him. Sometimes the opinion given was that the sphenoidal was clear but the left frontal sinus contained "matter," whereas the opposite might actually be the case. Radiologists should describe what they see but should not express conclusions.

With regard to the subjective symptoms, all—specialists, physicians and family doctors—should instruct the public about the appearance of pus and its importance. Patients, especially in the working classes, might be hawking up pus for years without thinking anything of it; the well-to-do called it mucus. If it was grey or white mucus no one was much interested in it, but if the discharge from the nose or mouth was yellow or green advice should be sought, just as it would be if there were such a discharge from the ear.

He (Sir St Clair) said he would show on the screen four temperature charts to demonstrate how acute a toxæmia could be; these charts also confirmed Sir William Willcox's opinion that, at all events during the acute stage, there should be little, if any, surgical interference.

The first was the chart of a case dating back two months. The patient had had his septum resected, and everything had proceeded as usual. After being in a nursing home for five days, he had gone home during an influenza epidemic. He had then had a shivering fit, a high temperature, and such a severe headache that he (the speaker) was sent for into the country under the idea that it meant meningitis. But the patient had only an acute sinusitis, and by keeping him in bed and giving him inhalations and avoiding sprays and douches he recovered. Last week he was seen again and there was no trace of pus.

He thought the profession in this country should follow that of France in this matter. They operated for acute conditions only, "à froid," never "à chaud."

The next was the case of a nurse who was under his care with acute pneumococcal sinusitis. In the next bed was a nurse with the same symptoms caused by *Micrococcus catarrhalis*. The symptoms ran for three weeks, and she had no treatment at all, except steam inhalations. She got well.

The next chart illustrated a somewhat different condition. This patient had acute pansinusitis. He had a rigor and such intense headache that during three weeks he never looked at a newspaper. His friends were so



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

convinced that he was going to have meningitis that they asked for a consultation, which he (the speaker) readily agreed to, and Dr Farquhar Buzzard was asked to see the patient. Dr Buzzard did so, and said there were no meningeal symptoms. He (Sir St Clair) lavaged the antra, and pus came from every sinus in the head. This patient had the greatest number of antral lavages the speaker had ever given in an acute case, namely, twelve. The recovery of the patient was absolute.

The next slide was a photograph from his text-book, in a case in which the suppuration was not marked, but the nature of the case was undoubted. In the case of this healthy young girl the first symptoms were a rigor and swelling in the neck. These were due to acute double sphenoid suppuration, which led to thrombosis of the cavernous sinus, complete ophthalmoplegia and meningitis, and she died. As soon as she came into hospital he opened her sphenoids ; streptococci in pure culture were obtained from the nose and from a gland in the neck, and after death they were obtained from the meninges.

Those charts showed how acute an infection might be, and yet how most of the acute infections subsided under treatment which was non-surgical.

Dr JAMES ADAM said that asthma was based on a toxicosis, and, whatever view might be taken as to anaphylaxis or allergy in relation to it, there could be no doubt in the mind of anyone who saw a large number of cases, and gave due weight to the clinical histories that a toxic condition often preceded the anaphylactic and rendered the patient more liable to the anaphylactic. Some, especially Haseltine and La Forge, in America, held that there could not be asthma without nasal infection. This was an extreme view, but it was certain that nasal sinusitis added to the toxic state was far oftener present in asthma than was sometimes realised, and that it was useless to treat asthma in such cases without dealing with the sinusitis. It was worth mentioning that too frequent a cause of nasal sinusitis was the post-operative nasal plug employed by the rhinologist.

Another way in which nasal sinusitis promoted a chronic toxic state was one little recognised, namely, by the causation of bronchiectasis, or rather bronchiolectasis. The nexus was proved : (1) by the case histories, the sinusitis preceding the bronchiolectasis ; (2) by the absence of any history of foreign body or of connection with the operation on tonsils and adenoids ; (3) by the fact that in a considerable series of cases the bronchiolectasis was mainly in the right lung, as, in the case of inspirated pus, we should expect it to be from the greatly increased frequency of foreign bodies in the right lung as compared with the left ; and (4) by X-ray films taken after injection of lipiodol, a series of such films showing moniliform outlines as contrasted with the more racemose cavities found in post-pneumonic bronchiectasis, which did not show the same partiality for the right lung.

Mr HERBERT TILLEY expressed his satisfaction with Sir W. Willcox's injunction as to care in forming a judgment about transillumination. He (the speaker) taught his students that if they trusted in transillumination they would frequently go wrong in the diagnosis of maxillary sinus empyema. If an antrum was clear, probably there was little wrong with it, except in those rare cases of a large cyst which expanded the antrum, or when the cavity was filled with polypi. Further, a dark antrum did not



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

necessarily mean that active disease was present. For these reasons he doubted if it would be wise to advise practitioners to provide themselves with a transillumination lamp, and to base their conclusions on what they found with it, because the diagnosis might be upset by an expert rhinologist who subsequently examined the patient. If this discussion was to be of value, it would largely depend on the records of personal experiences. He had himself been less accustomed to find arthritic changes following nasal sinusitis in adults than gastric and pulmonary troubles. In young children he thought arthritic changes were common as a result of acute, subacute, or chronic nasal sinusitis, and he assumed that that could be explained by a vascular condition of bone and the easy absorption of toxins from the sinuses in young children. More commonly the adult complained of gastric symptoms, perhaps because of the amount of pus swallowed, and also of laryngeal or bronchial catarrhs. A common lesion, when the larynx was affected, was hypertrophy of the interarytenoid fold. Caution was advisable when one found a septic focus in the nasal sinuses which seemed to account for some distant symptom, because the obvious inference would be that when that focus was removed the distal symptoms would clear up. But that did not always occur, especially when the sinus infection had been present a long time and more than one focus of infection had been set up. In such a case a colitis, cholecystitis, prostatitis or appendicitis, might have become established.

Dr PATRICK WATSON-WILLIAMS said that Sir William had stressed the important point that in certain classes of condition it was the practitioner's duty to think of a focus and investigate, and not wait until the patient complained of symptoms which pointed to a focus of infection. He was glad to hear that Sir William had found that the most frequent cause of the affections under discussion was what was termed a *latent* focal infection, in contra-distinction to those which caused local manifestations, as he had himself urged this on many occasions for some years. Staphylococcic infections were often the cause of rheumatoid states, and he had published cases of toxic insanity which were due entirely to that organism alone. It was recognised now that pancreatic disease was sometimes due to a chronic infective condition, and was often associated with chronic cholecystitis. Such patients might have marked glycosuria, and when the source was infective rhinitis this might quickly clear up after an operation on the nasal sinuses.

Dr W. S. SYME, in thanking the author for his paper, said he had long felt that too much leniency had been shown in dealing with suppuration in accessory sinuses, from the points of view both of diagnosis and treatment. He had taught that the sinuses must be examined when history alone pointed to their implication. Even recurring severe colds in the head justified attention being paid to the sinuses. He agreed that mere transillumination was liable to lead one into error in many cases of antral disease. The only procedure of value, he thought, was to examine the contents of the antral cavity by puncture, or by the method of Dr Watson-Williams. He (the speaker) did not doubt that there was an association between exophthalmic goitre and nasal sinus disease. In a recent case diabetes only cleared up after the antral cavities had been dealt with.



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

Sir William referred to invasion by the *Streptococcus viridans*. It was said that often there were no symptoms or pain, and he (the speaker) was not surprised at that, because often in chronic disease of the tonsil there was no acute attack. Headache, lassitude, and a general feeling of unfitness and wretchedness were common in sinus disease, and therefore it was strange that recognition of the rôle played by the sinuses in this disease had been so tardy. He thought the worst forms of general toxæmia were those in which there remained behind a focus analogous to a gleet.

Sir JAMES DUNDAS-GRANT said that osteo-arthritis was frequently due to sinus trouble, and clearance of ethmoidal cells had been seen to convert a nervous wreck into a bright and cheerful individual. He (the speaker) had perhaps not punctured the sinuses as much as he might have done, but he had followed up the pus, and he found an instrument of safety in Cordes' punch forceps, especially for the ethmoidal cells.

With regard to the discrepancy between X-ray examination and transillumination, there was a broad distinction to be made. In the case of the frontal sinus, transillumination was of no value, but in that of the antrum it was very valuable indeed. He (the speaker) would have general practitioners use transillumination and learn what it could show, as much as the laryngoscope and the stethoscope, in the interests of the specialist rather than against them.

He was glad to hear what Sir William said about diabetes, as the presence of that disease was sometimes advanced as a reason for not operating. He (the speaker) held, especially in the light of recent knowledge, that it might constitute an extra reason for operating. He remembered particularly two cases of tympanic antrum suppuration in which the patients had glycosuria, and after an expeditious operation the glycosuria disappeared.

With regard to the diagnosis of antral and frontal trouble by rhinoscopy, one should see pus coming from the middle meatus of the nose. But even here there was a source of fallacy, from the fact that the uncinate process of the ethmoid might be so large as to hide the middle turbinal, and pus might seem to be coming from between the turbinal and the septum instead of the outer wall, and from the superior meatus instead of the middle one.

Mr H. BANKS-DAVIS remarked that he understood Sir William Willcox to say that plain water was opaque to X-rays. He (the speaker) was not aware of this, but if so it was an important clinical fact as it would explain why on transillumination an antrum appeared clear when by radiogram it was reported as opaque.

Sir WILLIAM WILLCOX (in reply) said that Sir St Clair Thomson was dealing in his remarks with acute conditions, whereas the speaker was describing chronic states of long duration, which, he was sure Sir St Clair would agree, required surgical interference. He agreed with Dr Adam that sinusitis was a cause of bronchiectasis ; he saw a very interesting case of that with Sir St Clair Thomson a few months ago.

Cerebral abscess had long been known as a common complication of bronchiectasis. Mr Tilley truly said that if one removed the focus seen, it did not always cure the patient. The tubular glands of the colon, if rolled



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

up together, formed a lump as large as the pancreas, and when the colon glands were infected, one should be very cautious in giving a prognosis, for the colon might carry on the bad work. In answer to Dr Syme, he (the speaker) said he thought exophthalmic goitre generally originated in some toxæmic condition; he had seen several cases which arose from tonsillar sepsis, and he did not doubt that sinusitis might cause it. The danger of operating on diabetic patients should now have passed away, because by methods of dieting one could get the patient sugar-free and bring the blood-sugar to normal, particularly if insulin were pressed into service. If these cases were seen within a few months, they could be cured by removing the cause. In answer to Mr Banks-Davis' remark as to transillumination and X-rays, he (the speaker) had in mind a clear effusion, which gave a shadow when using X-rays. Water in a tumbler allowed light to get through, but still one could easily see the level of the water in it by X-ray examination.

**A Study of the Paths of Infection to the Brain, Meninges, and Venous Blood Sinuses from Neighbouring Peripheral Foci of Inflammation**:—Purulent Basal Leptomeningitis following Intranasal Operation upon the Ethmoidal Air-cells in a case of Nasal Polypi (*with Microscopic Examination of the Olfactory Nasal Mucous Membrane, Ethmoidal and Sphenoidal Air Sinuses and the Meninges*), by A. Logan Turner, M.D., F.R.C.S. Ed., and F. Esmond Reynolds, M.B. The paper is published in the *Journal of Laryngology and Otology*, vol. xli., No. 11, November 1926, p. 717.

Discussion.

Mr J. A. Gibb said that he had been in the habit of removing half or the whole of the middle turbinate, and then proceeding to the ethmoid cells, and he wondered whether any other route would be safer. He had operated on a large number of these cases, and so far had had no cerebral complications.

Dr Patrick Watson-Williams said that many years ago he operated in a case of chronic sinusitis with extensive polypoid degeneration and the patient had died of meningitis. He was certain that he did not injure the cribriform plate, and was driven to conclude that the infection had travelled via the venules. (There was no post-mortem examination.) It seemed to show that, in cases with infective disease involving the upper ethmoid region, it was better to fail in producing a complete cure than to run the risk of approaching too nearly the roof of the nasal passages, not for fear of direct injury to the cribriform plate, but owing to the risk of the opened lymph-vascular channels conveying infection to the subarachnoid space.

Mr Herbert Tilley said that questions had been raised as to how one could incur the minimum risk in operating on the ethmoidal region, as surgical intervention was being carried out on it with increasing frequency. It was recognised that if nasal polypi were to be cured, the inflamed bone from which they grew must be removed, and this brought one into the neighbourhood of very important structures. The fundamental position to



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

be taken up by the surgeon was, that in order to avoid risk he *must* keep on the outer side of the level of attachment of the middle turbinal. So far he had not had a fatality in ethmoidal operations, and he exhibited two instruments which in his hands seemed to minimise risk and yet enabled one to grasp the diseased tissue and remove it.

Sir JAMES DUNDAS-GRANT said it was important to keep in mind the fact that there were cases of meningitis secondary to disease in these sinuses, apart from a preceding operation. One might be on the verge of such meningitis when starting an operation, and the surgeon was apt to blame himself for results which might have been due to pre-existing factors beyond his scope. When severe headaches and much disturbance were present, it might be advisable to perform an exploratory lumbar puncture before operating. In Dr Turner's case the fluid might have been turbid before the operation. He directed attention again to Cordes' forceps, which he had shown earlier in the afternoon ; they reduced the risk of tearing to quite the minimum, and he considered it of great importance that the instruments employed should cut and not tear.

Dr JAMES ADAM said Dr Turner's communication helped to explain a death the speaker had in the case of a lady from whom he removed polypi. There was a somewhat similar history. He did not know what the organism was, but it was noteworthy that in Dr Turner's case the infection was pneumococcal.

Dr Turner's suggestion that rupture of the cribriform was not necessarily fatal was confirmed by a case in which he (Dr Adam) had the *contretemps* during an operation on the ethmoid and in which there was escape of cerebro-spinal fluid. He painted with iodine, did not pack, and did not allow the patient to lie down for three days. The patient recovered.

Sir ST CLAIR THOMSON said it was recognised by rhinologists that there were three lines of infection through the nose, one of which Dr Turner had dealt with. The first was from traumatic fracture of the cribriform plate ; the second was a vascular infection, and the third—which had just been so admirably dealt with—along the sheaths of the olfactory nerves. It should be understood that this mode of infection was not so uncommon as Dr Turner seemed to regard it, because such cases were not often published when they occurred. He had had two, but had not had any since those early days of twenty-five years ago. Mosher pointed out that the particular danger zone was a posterior ethmoid cell, far back, whence one could easily enter the cerebral cavity. As Dr Turner pointed out, the great thing was to keep outside the middle turbinal ; and it was better to enter the orbit than the cerebral cavity. This area was on a level with the inner canthus of the orbit, and by touch and watching where the patient's head was, one could keep below that level and outside the attachment of the middle turbinal.

Dr W. H. KELSON (President) asked what were Dr Turner's views in regard to packing the nose. For many years he himself had taught, and believed, that packing should be used as little as possible there, and he was glad to hear that Dr Adam held similar views. In his earlier cases there was occasionally a rise of temperature, and that occurred much more



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

frequently when the nose was packed. He did not now pack if it could be avoided.

Dr LOGAN TURNER (in reply) said that the olfactory branches were not distributed over the middle turbinal, though he had seen the statement made in Gray's "Anatomy" that they did so. If in operating on the ethmoid cells one moved the middle turbinal, and then worked laterally, the olfactory branches should not as a rule be torn. The nasal cavities in the case just demonstrated were not packed after operation. He (the speaker) said that there was no evidence of meningitis before the operation. He was interested in the fact that the patient had a chronic inflammatory condition of the olfactory mucosa. He and Dr Reynolds had formed the opinion that the perineural sheaths had been torn, the *Pneumococcus* had obtained entrance, and the inflammation had spread rapidly up the sheaths.

**The Rôle of the Lymphatics in Laryngeal Disease; and the Rôle of the Larynx in Lymphatic Disease**—JOBSON HORNE, M.D.—Dr Jobson Horne said that it was more that twenty-five years since the lymphatic supply of the larynx appeared to him to be an open field for research. In 1901 and 1903 he published in the *Journal of Laryngology and Otology* * some of those researches.

The time had come for co-ordinating results, and the following was a summary of clinical and pathological deductions from his own researches.

Dealing first with the rôle of the lymphatics in laryngeal disease, Dr Jobson Horne said it was remarkable that there were very few diseases of the larynx in which the adjacent and corresponding cervical glands became involved. The factor determining the involvement of the adjacent lymphatic glands was whether the disease in the larynx was primary or secondary. If primary, the glands became involved; if secondary, the glands were not affected. The outstanding and typical example of the former was malignant disease of the larynx. In carcinoma of the larynx an adjacent cervical gland sooner or later became palpable. "Sooner" or "later" was governed by the disease being extrinsic or intrinsic; and if intrinsic, by the disease originating in the part covered with columnar epithelium or in the part covered with squamous epithelium. Whereas in syphilis and tuberculosis—

* "The Larynx, a Site of Infection in certain Diseases of the Lymphatic Glands known as lymphadenoma, lymphosarcoma, tuberculous lymphadenitis, etc., and a Note on Primary Tuberculosis of the Organ," *Journ. Laryng., Rhinol. and Otol.*, December 1901, p. 684.

"The Upper Respiratory Tract as a Source of Systemic Infection," *Journ. Laryng., Rhinol. and Otol.*, November 1903, p. 572: Being Introductory Remarks to a Discussion in the Section of Laryngology and Otology of the British Medical Association Annual Meeting at Swansea, July 1903.



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

taken as types of secondary disease—no matter how destructive the disease in the larynx, the adjacent glands were not involved.

Tuberculosis of the larynx was *always* secondary to chronic phthisis, distinct from miliary tuberculosis of the lung.

In pure miliary tuberculosis of the lung, that is to say without any breaking down of the lung, infection of the larynx did not occur.

In tuberculosis of the larynx secondary infection of the cervical glands *never* occurred.

"Always" and "never" sounded dogmatic, but the dogmatism was justified by the results of clinical and pathological research.

A case of tuberculosis in which the cervical glands became infected by a recrudescence of the disease in the larynx, some years after the disease in the lungs and the larynx had become arrested, was cited as an exception which proved the rule he had laid down.

It was noteworthy that a very small percentage of the subjects of tuberculous necks suffered from chronic phthisis. Therefore such subjects escaped laryngeal tuberculosis.

Passing to the rôle of the larynx in lymphatic disease, Dr Jobson Horne demonstrated a fold in the larynx passing downwards and forwards between the cartilages of Santorini and Wrisberg to end near the posterior vocal process. He regarded that as the vulnerable spot in systemic infection through the larynx. (*Vide* diagram, *Journ. Laryng., Rhinol. and Otol.*, November 1903, p. 574.)

Larynges * showing ulceration, or breach of surface, or old scarring at that spot and removed post-mortem from cases of Hodgkin's disease, and one from a case of mediastinal sarcoma, were demonstrated. The results of those investigations led Dr Horne to the conclusion that, in not a few cases, Hodgkin's disease was tuberculosis, and that some cases of sarcoma should be placed amongst the granulomata.

Sir JAMES DUNDAS-GRANT agreed that the vulnerable spot spoken of by Dr Jobson Horne was very vital, and that it was often missed in examinations. He asked that pathologists should, at post-mortem examinations, open larynges from the front, as there would be presented the picture most usually seen on examination during life.

Dr W. H. KELSON (President) said he was one of those who were present when Dr Jobson Horne read his paper twenty-six years ago at Hanover Square before the old Laryngological Society. At that time Dr Horne showed that in the investigation of this subject a wide field of research lay open, and he (the speaker) had wondered why Dr Horne had not pursued further research. But it now seemed clear that he had done so, and he hoped Dr Horne would continue these important investigations.

Dr JOBSON HORNE (in reply) said that he had always endeavoured to obtain post-mortem larynges before they had been opened, and by opening

* *Journ. Laryng., Rhinol. and Otol.*, December 1901, p. 684.



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

them with an incision through the anterior commissure he had been able to observe the lesions recorded.

**Perforation of the Palate** (further Report of case previously shown*)—H. BELL TAWSE, F.R.C.S.—Mrs J., aged 43—*21st November* to *30th January*.—Inunction of oleate of mercury was begun on 21st November, continued, and gradually increased in strength till every available area resented further treatment, which ceased on 30th January. Alkaline nasal douche twice daily; nose and nasopharynx cleansed of crusts by me three times a week; emulsion ol. morrhuæ ℥ss. t.d.s. The palate looks healthier but there is no diminution in the size of the perforation and the edges are still ragged and show no sign of healing. Less crusting in nose and nasopharynx; health improving.

*31st January*.—Ultra-violet rays applied to chest and abdomen three times a week. Douche and cleansing of nose continued as before, also emulsion ol. morrhuæ.

*21st February*.—Perforation much smaller, ragged edges disappearing. Nose and nasopharynx healthier.

*1st March*.—Wassermann test is negative. Patient states that she never felt so well before. Edges of perforation firm and smooth. Nose and nasopharynx painted once a week with 20 per cent. argyrol.

*10th April*.—Edges of perforation completely healed. No crusting of nose or nasopharynx; nasal douche, ultra-violet rays and ol. morrhuæ still continued. Wassermann test is negative.

REMARKS.

Mercurial inunction did not do the slightest good, and any slight improvement during the course might just as easily be credited to the ol. morrhuæ. The first well-marked sign of progress appeared within ten days of the first application of ultra-violet rays. The right half of the soft palate is thinner than the left. On the upper surface of the left soft palate can be seen a greyish pink mass the size of a pea. It is firm to the touch and has a smooth surface. Patient, who is unaware of its presence, is in perfect health and is having a new denture fitted. Examination of cerebro-spinal fluid was not done as patient declined to allow lumbar puncture.

Mr H. TILLEY congratulated the exhibitor on the good result obtained in this case. The treatment gave a lead in cases in which the tests for syphilis and tubercle were negative. But he doubted whether in this patient the lesion was one of simple sepsis because its appearances were so unusual. In spite of the negative evidence of tubercle, he thought it was probably of that nature, and one knew how effective ultra-violet rays might be in such conditions.

* *Journ. of Laryng. and Otol.*, vol. xli., No. 4, p. 249.



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

Dr W. H. KELSON (President) said that this was the mysterious kind of case with indefinite etiology which one saw from time to time, and which some regarded as tuberculous, others as syphilitic. Two years ago he (the speaker) had had such a case at Golden Square, in which ulceration had persisted for a long time, and then suddenly healing occurred without any evident reason. A year later, however, the patient had had definite malignant disease in the same site, and he (the President) had often wondered whether this condition might be a precursor of malignant disease. He asked that the present case might be reported on again after an interval.

Mr BELL TAWSE (in reply) said that on the suggestion of Sir James Dundas-Grant the section would be referred to the Morbid Growths Committee for a report.

**Ozæna apparently cured by Submucous Injection of Paraffin**—Sir JAMES DUNDAS-GRANT, K.B.E., M.D.—Female, aged 65, was first seen in January 1910, on account of dullness of hearing (whisper reduced on right side to 18 inches and on left to 3 inches) of 10 to 20 years' duration.

The nose, especially on the left side, was found to be full of greenish crusts of extreme fœtor of which the patient was not conscious.

She was treated with peroxide of hydrogen, glycerine, glucose and various other remedies with only slight momentary benefit, but it was, in 1916, that a very remarkable improvement first took place immediately following the injection of a small quantity of cold paraffin under the septal mucous membrane. From that time onwards the smell and crusting rapidly diminished and for years she has employed no treatment except a douche of plain boiled water each morning.

**Swelling in Larynx: Case for Diagnosis**—D. R. PATERSON, M.D.—Male, aged 25, a healthy collier, complained of two and a half years' hoarseness coming on "after attack of tonsillitis." Externally fullness over right thyroid ala; laryngoscopic examination shows right side of larynx and adjoining pyriform sinus occupied by a smooth red swelling which prevents view of right cord. Slight stridor, no dysphagia; Wassermann reaction negative; sputum, negative. Has been under observation for ten months, during which time swelling has increased somewhat and extended to arytenoid region. Six months ago piece removed for examination and reported to be "granulation tissue mostly." Iodide and mercury in full doses have been given, and four months ago radium (75 mgm.) was applied externally without result.

Mr NORMAN PATTERSON said that some of the appearances in this case suggested chondroma, and he (the speaker) thought that the inflammation might be due to the application of radium. Did Dr Paterson carry out digital examination?



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

Mr TILLEY suggested that this was a perichondritic inflammation and probably of the thyroid cartilage. The chronicity "put malignant disease out of court," and if it were enchondroma one would not expect to see the mucous membrane on that side quite so red. The general features were very similar to those which Professor Hajek published in a monograph many years ago; in one of his cases there was a very definite swelling of the arytenoid and the homolateral laryngeal structures inside the thyroid cartilage. There was also some swelling outside the thyroid. Probably in the case seen to-day an original traumatic lesion had become complicated by a mild septic infection.

Mr H. L. BELL TAWSE asked whether the stridor was increasing. If not, he advised making an incision along the thyroid cartilage and through the perichondrium, where there might be a small abscess. He showed to the Section two years ago a boy, aged 10, in whose larynx an abscess had formed caused by his mother introducing her finger to remove a mutton-bone. Necrosis of the cartilage was followed by cicatricial contraction and the voice was subsequently lost.

Sir JAMES DUNDAS-GRANT agreed with the opinion expressed, and advised tracheotomy followed by exploratory thyrotomy, as a piece of necrosed cartilage might be found.

Dr W. H. KELSON (President) said that digital examination was most important here; possibly it might be a fibro-lipoma. Several of these had been shown at the Section, and usually the correct diagnosis was not made until revealed by operation. Had anything been detected in the neck before radium was applied?

Mr G. WILKINSON said the case reminded him of one which he had shown at a meeting of the Section some years ago,* that of a man who, during a choking attack, had introduced a finger into his throat and had caused an abrasion of the larynx, followed by an extensive inflammatory induration, which remained for at least two years. He thought the present case was one of chronic inflammatory induration of the larynx, due to infection, probably arising from the tonsillitis.

Mr J. F. O'MALLEY asked whether there was any suggestion of recent typhoid in this case, as sometimes that disease would leave perichondritis, with the formation of granulation tissue and an abscess. Three years ago he had a patient with similar symptoms. He had some septic teeth, and they were removed; also there were one or two septic foci on the face and in the mouth. Finger examination showed that the mass was very smooth and elastic. A considerable quantity of pus was obtained from it, and the patient then got well.

Dr D. R. PATERSON (in reply) said it reminded him of the obscure cases in which the diagnosis lay between syphilis, carcinoma, and ordinary perichondritis. He did not feel it with his finger, but when the patient was under an anæsthetic, he was able, with a probe, to test it, and the impression was not that produced by cartilage. It felt firm, and the infiltration at that time was limited to the upper part of the right side of the larynx, above the vocal cord, and it was from that part he took a

* *Proceedings* (Sect. Laryng.), 1914, vii., p. 83.



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

piece for examination. The notes said it came on after an attack of "tonsillitis"; probably there was an infective condition. He had hoped to be told what was the best course to pursue; whether he was justified in splitting open the larynx, or approaching it from the outside, through the thyroid cartilage. The fact that the mucosa was red from the first was against the idea of enchondroma or lipoma, and favoured the view that it was a chronic inflammatory condition. The sore on the skin of the neck was due to radium. He promised to report the case later.

**Chronic Hyperplasia of Upper Jaw**—HAROLD BARWELL, M.B., F.R.C.S.—Boy, aged 11, had a swelling of the right upper jaw noticed in December 1925. He was first seen 12th March 1926. Hard, rounded swelling of anterior surface of superior maxilla, infra-orbital margin slightly raised, and perhaps slight flattening of palate on right side; no nasal obstruction; nasopharynx normal. Quite dark on transillumination, and skiagram shows diffuse bony thickening. Exploratory operation in canine fossa on 24th March; swelling consisted of dark red, rather soft bone; no antral cavity found. Pathological report by Dr Robert Donaldson:—

Histologically the sections consist of a fairly dense irregular network of bony trabeculæ, the interstices of which are occupied by vascular fibro-cellular tissues. Osteoblasts are present in moderate numbers, together with a few osteoclasts. A few lymphocytes can be seen scattered here and there in an irregular manner, but there are practically no polymorphonuclear leucocytes except in relation to small collections of extravasated blood on the edge of the sections. There is no inflammatory reaction such as would indicate organismal infection, and there is no suggestion whatever of malignancy.

The histological appearances point to that somewhat rare condition described by Westmacott* under the name of "chronic hyperplasia of the superior maxilla." The histological findings in two other cases of the disease reported by Douglas Guthrie† are described briefly by J. W. Struthers and J. W. Dawson‡ in an important paper on generalised osteitis fibrosa. The histological features of the tissue removed from the case now presented correspond with those found in Westmacott's and Guthrie's cases.

The enlargement is a unilateral one, and the antrum is more or less filled up with vascular fibro-cellular tissue contained in an irregular network of reticular bone. No inflammatory reaction, indicative of sepsis, was found either in Westmacott's or Guthrie's cases. Westmacott accordingly interpreted the histological findings as a reversion on the part of the bone to an embryonic type. Dawson, however, has gone further and has shown fairly conclusively that the initial lesion, in practically all the bone dystrophies, is one affecting the bone corpuscle. In generalised and in localised osteitis

* "Chronic Hyperplasia of the Superior Maxilla," *Inter. Med. Cong.*, 1913, Section xv., p. 243.

† *Journ. Laryng. and Otol.*, November 1923, p. 575.

‡ "Generalised Osteitis Fibrosa," *Edin. Med. Journ.*, 1923, xxx., No. 10, p. 489.



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

fibrosa there is a possibility that the interference with the vital functioning of the bone corpuscles is due either to the action of some unknown toxi-infective substance carried by the blood-stream, or to circulatory changes, while, in some cases at least, there may be some inherent weakness on the part of the mesenchymatous tissue. The histological findings in cases of chronic hyperplasia of the superior maxilla bear a strong resemblance to those found in the affected bones in fibrous osteitis—a localised bone lesion related in some way to a definite, known, septic focus in the tissues in the near vicinity. Dawson rightly points out that, in the condition of the jaw under discussion, there is a possibility of irritation arising from a septic condition of the mucosa of the antrum. The existence of such a septic condition, however, has not so far been proved, but it is interesting to note that, in otosclerosis, a somewhat similar localised bone lesion, there is the same proximity to a possibly infected mucous membrane. Dawson considers that the lesion of the superior maxilla may represent a transition between fibrous osteitis on the one hand, where there is a known septic focus in the immediate neighbourhood, and an osseous dystrophy such as localised osteitis fibrosa on the other, where there is no immediate focus of sepsis nor any mucous membrane which might become the seat of organismal infection. This condition of the jaw can hardly be regarded as directly due to an organismal factor, but there may, nevertheless, be a relationship, though not a genetic one, between some toxi-infective agent and the morbid condition of the bone.

Dr W. H. KELSON (President) said that three years ago Professor Knaggs had published in the *British Journal of Surgery* * a full and well-illustrated account of cases of this kind. He held definitely the view that they were cases of osteitis fibrosa. Two years ago, at a meeting of the British Medical Association at Bradford, he (the speaker) had read a paper on the subject † supporting this view.

Dr DOUGLAS GUTHRIE said that the pathology of these bony enlargements of the upper jaw had been the subject of much controversy. It was probably better to regard this case as "chronic hyperplasia" rather than as "osteitis fibrosa." The disease was not very rare, but museum specimens were rare because the condition was now correctly diagnosed. Formerly it had been regarded as a condition which demanded excision of the upper jaw, but we did not now resort to such drastic treatment. In fact, in many cases, no treatment was required as the enlargement was not progressive. During the past five years he (Dr Guthrie) had had under observation a boy, now aged nine, who had suffered from this disease since birth. The enlargement had undergone no increase since he (the speaker) had first seen the case.

Mr H. BELL TAWSE said that he had had a case, in a girl aged 10, the pathological report of which had been very similar to that on this case. He (the speaker) had chiselled away a great deal of cancellous bone and had then stitched the wound. Since the operation there had been no further enlargement.

---

* *Brit. Journ. Surg.*, 1922-23, x., pp. 487-500.

† *Brit. Med. Journ.*, 1924, ii., p. 1197.



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

Mr LESLIE POWELL said that he had recently seen two cases, both in women, one aged 45 the other aged 55. In the first there were three bony enlargements ; one on the malar part, one close to the nose, the third on the alveolus, and they were very disfiguring. They had been removed some years previously, but had formed again and had grown larger than before. After removing them, he (the speaker) applied diathermy to the base. There had been no recurrence. The enlargements in the other case, also had not returned after removal with diathermy.

Mr A. D. SHARP said that a woman, aged 35, had been referred to him by her dentist, because of a large swelling in the alveolus. The swelling had extended to the mid-line of the palate, and largely involved the right alveolus. On X-ray examination the antrum was seen to be filled up, and the ethmoidal cells involved, and three-fourths of the frontal sinus were involved. There was no specific history, and the extension had been a gradual one, extending over many years.

Mr O'MALLEY said that two years ago he had shown a similar case which had been referred from the Eye Department because of proptosis and a fistula between the eye and the root of the nose. X-rays cast several dense shadows in the right ethmoid region and part of the right frontal sinus, and there were similar shadows on the left, but no symptoms. He removed two large-sized dense masses of bone ; one from the region of the sinus externally, the other from the ethmoid through the nose. The result, so far, had been good, but he expected the left frontal sinus to become involved.

**Patient after Total Laryngectomy two years ago with a Useful Voice**—DOUGLAS GUTHRIE, M.D.—J. P., a healthy man, aged 35, was "gassed" in 1918, and had suffered from occasional hoarseness ever since. For two years before admission to hospital in June 1924, the hoarseness had been continuous, and for seven months he had suffered from shortness of breath, worse on lying down. Laryngoscopy showed a large, smooth swelling of left ventricular band and left arytenoid region. The left vocal cord was not visible, but the right cord, partly seen, appeared healthy. Wassermann reaction negative; examination of chest and sputum negative. While under observation the dyspnœa became worse and tracheotomy was performed on 7th July 1924. On the suggestion of Sir James Dundas-Grant, who kindly saw the patient, a portion of tissue was removed through the tracheotomy wound, and this proved to be epithelioma.

On 21st July 1924, total laryngectomy was performed, and left lobe of thyroid gland being involved, was also removed. The patient was fed by nasal tube for two weeks, and healing was satisfactory. He is now engaged in poultry farming in Devon, and when last seen by exhibitor, in September 1925, had acquired a remarkably good pharyngeal voice.

Dr D. R. PATERSON asked how soon after the operation the training began, and how soon voice was produced. In 50 per cent. of such cases



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

speaking was carried out after swallowing air, and the mechanism of voice-production was somewhat analogous to that in the bagpipe. In a case closely observed it was found that the sound was produced from folds at the lower part of the pharynx, at the mouth of the gullet, from side to side. Those who could not swallow air were given an alkali, followed by citric acid, and with the gas so evolved voice could be produced. Some of these people were old, and took badly to training, and in their case dilatation of the stomach with air must be done with caution. On the other hand some patients could not eructate. This man (Dr Guthrie said) produced a good voice when he had indigestion. The present patient had learned to depend on contraction of the abdominal muscles.

Dr W. S. SYME said he had shown to the Scottish Society of Otology and Laryngology a patient whose larynx he removed eight years ago, and he had developed such a good voice that he could make himself heard in a large hall. He did not think these patients swallowed air into the stomach, but in his own patient's case it might be collected in the pharynx or the œsophagus. In the case of a woman whose larynx he had removed, she could not produce anything like a satisfactory voice. Much depended on the person's temperament.

Mr PHILIP FRANKLIN said that he had heard a patient in New York audibly address an audience, though complete extirpation of the larynx had been performed by Dr Lee Hurd a year previously. The voice was husky, much like that of a person suffering from chronic laryngitis. The patient described how he was first led to attempt to produce an audible voice. He noticed that after a meal of pork and beans the gaseous eructation from the stomach produced a sound. He was able to reproduce this eructation by swallowing air and letting it out at will. He controlled the exit of air from the gullet by fixing the lungs after a deep inspiration through the tracheal opening. The opinion of the meeting had been that the simulated voice sounds were produced either at the pharyngeal opening of the gullet or by the pillars of the fauces.

Mr A. D. SHARP said he remembered a case in a ventriloquist, and he produced a remarkably good voice. He might have acquired, during the practice of his art, a good control over his trunk muscles.

Mr G. WILKINSON said that a necessary condition for the production of this kind of voice was that the patient should have learnt to relax both the pharyngeal and diaphragmatic sphincter, so that he could draw air into the stomach, and then force it out by contraction of the upper abdominal muscles. He did not think the present patient swallowed air at all. The necessary reservoir of air could not be in the œsophagus itself, because, the trachea being open, he could not cause any degree of pressure in the thorax to expel the air. The man's speech was really a loud whisper, produced by forcing air through the upper resonating cavities. There was no vibration such as gave the ground tone to ordinary speech.

Dr W. H. KELSON (President) said these cases were not only interesting but also reassuring. The senior members would remember the time when a man who had had his larynx removed was congratulated on being alive. Later came a time when, after removal of the larynx, a more or less clumsy speaking apparatus was fitted, which was considered to be a great success.



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press

Nowadays the man who had had the operation wore nothing except, perhaps, a tracheotomy tube, yet could speak intelligibly. This represented a very great advance.

Dr DOUGLAS GUTHRIE (in reply) said that the patient was a smoker; he resumed smoking early in his convalescence. The air was not consciously swallowed nor was the patient aware that he contracted his abdominal muscles. He seemed to produce his voice by dilating his œsophagus, as described by Mr O'Malley, and certainly the abdominal muscles were not tightened by conscious effort. He recovered a little use of his voice within a month of the operation, and when he left two months after operation he was able to make himself intelligible to the nurses. Of course, there was still room for improvement. He never had any lessons in voice-production, but evolved his own method. In answer to Dr Paterson's remarks about bagpipes, the man himself said that only a Scotsman could have recovered, and recovered with such a voice.

**Case of (?) Mucocele** — ANTHONY M'CALL, M.D. — Female, aged 20, was seen at hospital, November 1924, with a swelling in the neighbourhood of the left supra-orbital notch, which had been present for three years: No pain or nasal discharge at any time.

Extensive necrotic changes were found at operation in the anterior wall of the frontal sinus extending into the ethmoid and sphenoid sinus. Only a blunt spoon and gauze used; external wound closed and drained by tube through nose; keloid scar treated by cautery; no discharge for eighteen months.

# ABSTRACTS

## THE EAR.

*A Theory of Caloric Nystagmus.* G. V. BORRIES, Copenhagen. (*Zeitschrift für Laryngologie, Rhinologie, etc.*, April 1926, pp. 253-255.)

This is a brief restatement of the author's views which were given in full in the *Acta Oto-Laryngologica*, Bds. ii. and iv. The chief points are:—

(1) Caloric nystagmus can be produced even after destruction of the semicircular canals; this was demonstrated experimentally in pigeons. The author believes that caloric nystagmus—in contra-distinction to rotatory nystagmus—may be a pure otolith reaction.

(2) The alteration in the direction of the caloric nystagmus, according to various head positions, is probably also an otolith reaction. At any rate Bárány's theory of endolymph movements cannot explain these variations when the position of the head is altered. J. KEEN.



https://doi.org/10.1017/S0022215100029637 Published online by Cambridge University Press