SOCIETIES' PROCEEDINGS.

ROYAL SOCIETY OF MEDICINE—OTOLOGICAL SECTION.

February 15, 1918.

H. J. Banks-Davis, M.B., *President of the Section, in the Chair.*

DISCUSSION ON "THE INFLUENCE OF DISEASES AND ABNORMALITIES OF THE NOSE AND EAR."

Introductory Address.—By William Hill.

Aurists writing in the earlier decades of the last century never mentioned diseases of the nose in their papers and text-books on aural medicine and surgery. It was not until nearly the middle of the century that nasal lesions were occasionally alluded to in a half-hearted way by otologists as having some ætiological relationship to diseases of the ear accompanied by deafness. Anterior rhinoscopy was neither practised nor alluded to; and though posterior rhinoscopy was often mentioned it could rarely have been practised, or, at all events, could rarely have been expertly employed, else the condition known as adenoids could scarcely have eluded observation until when well on in the sixth decade. It is true that some years earlier Toynbee had discovered and described the cavernous structure of the inferior turbinal bodies, but, like his contemporaries, his excursions into the domain of nasal therapeutics were limited to the employment of rhinal douches, which were prescribed more with the idea of removing catarrhal secretions from the mouths of the Eustachian tube than from any deliberate intention of treating catarrh in the nasal cavities proper.

Of course the "man in the street" recognised then, as he does to-day, that an ordinary acute cold in the nose, and likewise the acute nasal catarrhs associated with the exanthematous fevers and other conditions, were frequently associated with deafness. The otologists of that day, however, as to day, knew that this was not really a case of cause and effect, as the incidence of acute catarrh falls on both the ear and the rhino-pharyngeal tract without any necessary sequence, and it was only towards the middle of last century that it began to be suggested that the case of chronic catarrh was not on all fours with the acute catarrhs. Hinton mentioned in 1854 that Lucæ, of Berlin, had suggested that obstructive rhinitis affected the ear by rarefaction in the post-nasal space. The recognition of the influence of "adenoids" led many American and European rhinologists, as opposed to the pure otologists, from the seventies onwards, to make wide claims for the influence of nasal disease on the ear, not merely on account of the spread of non-purulent, muco-purulent, and purulent catarrhal processes to the tympanum, but also for the effect of nasal obstruction *per se* by the production of negative pressure.

Woakes not only subscribed to these views but added an additional

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

factor, viz. the *reflex* influence of nasal lesions on the ear—the associated nerve-area theory as he termed it—acting through the fifth nerve. He made special claims for an alleged form of osteitis of the nasal labyrinth, which he termed "necrosing ethmoiditis." These particular views did not prove acceptable at the time, nor have they since been widely accepted by either otologists or rhinologists.

Woakes' further observation that chronic rhinitis led to a sluggish, paretic condition of the palate with accompanying tumefaction and deafness has, however, been regarded by many as one of great importance and in accordance with experience.

This important and controversial subject was very exhaustively and hotly discussed at the commencement of this century—viz. at the meeting of the British Medical Association at Ipswich in 1900 and at Manchester in 1902, and in the correspondence columns of the *British Medical Journal*, following an article by Sir Felix Semon. These discussions nominally centred round nasal *treatment* for middle-ear deafness, but of course the ætiological factor was necessarily bound up with the question and was fully dealt with. The net result was to bring out the fact that two divergent schools of thought even then existed, viz. the *separatist* school, who asserted that nasal disease was not a factor of very much importance in ear disease, and the *connectional* school, who were convinced that the association was often present, and was almost a self-evident proposition. This latter school again was divided into two groups. One group believed that a certain minor degree of nasal obstruction *per se*, which fell short of mouth-breathing, was a cause of Eustachian congestion and obstructive tumefaction as the result of *negative pressure*, although this group recognised also the factor of *nasal catarrhal diseases* as producing Eustachian stenosis and certain middle-ear changes resulting in deafness. The other group rejected the negative pressure hypothesis, but accepted the catarrhal theory.

The small separatist school held that the nose and the ear were entitled to their separate diseases, and that in fact they were practically entirely independent one of the other. They argued that ear lesions were certainly and admittedly not the cause of nasal disease, and that the converse was equally true. By parallel reasoning it could be pointed out that ear disease is not asserted to be a cause of post-nasal disease, and the separatists were the first to admit that they could not and did not claim that the converse was true as regards the post-nasal space, and some of them recognised that their generalisation on logical grounds had to be met when their opponents called their attention to this analogous set of conditions. Analogy is, of course, not a strong argument in logic. Some of the separatists, however, felt that they had to meet this argument to the admitted influence of contiguous disease in the post-nasal space, and McBride, for instance, was forced to suggest that enlargement of Luschka's tonsil (which is admittedly frequently associated with middle-ear deafness, though sometimes not) only affected the ear when the lymphoid overgrowth actually touched the Eustachian cushions! Mere post-nasal obstruction no more caused Eustachian tumefaction than did nasal obstruction, and the negative pressure theory was rejected with contumely. They were in some difficulty, of course, when McKeown recalled attention to the fact that the deafness was often *immediately* relieved after removing adenoids.

Turning now to the *catarrhalist* group of the connectionists, its most

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

prominent advocates were Lake and Watson-Williams, supported by Law, Hovell, Pritchard, Kerr Love, Bronner, Kelson, Milligan, Tilley, and others. This group, while fully recognising that many cases of long-standing nasal catarrh, with or without more or less obstruction, did not become deaf, yet on the other hand urged that in a by no means negligible proportion of cases the two conditions were associated, and the frequency was sufficiently great to lead to the conclusion that it was a case of cause and effect. They laid stress on the view that the catarrhal process, with more or less accompanying tumefaction, *spread by continuity* from the nose to the tubes; that, though this sequence was not by any means always observed, yet we must regard any individual case of chronic nasal catarrh as a potential, or at least possible, ear case in the future and take measures accordingly. That in established cases of nasal disease, accompanied by deafness from tubal obstruction, surgical or other measures could justifiably be undertaken on nasal grounds alone, but that if the deafness was relieved by some method of inflation, or by bougieing, then it might be rightly urged that treatment might be expected, not merely to improve the ear condition, but also to arrest the further progress which would be likely in the absence of nasal treatment.

The *pure catarrhalists* rejected the ingenious hypothesis of the negative pressure school or *rarefactionists*. The latter were in general agreement with the catarrhalists as to the influence of various forms of chronic rhinitis in the ear, more especially when there was increased secretion, but, in addition, they held the view that nasal obstruction *per se*, so long as *it fell short of actually leading to mouth-breathing*, gave rise to negative pressure or rarefaction of the air in the nasopharynx and middle ear, resulting in "exhaustion otitis," and that congestion was followed by tumefaction in the tubes and middle ear with consequent deafness. Scanes Spicer, Dundas Grant and Baber were prominent advocates of these views.

Lack, with a view to giving "a more definite turn to the discussion," asserted that "nasal obstruction *per se* was never a cause of deafness or of ear disease."

His summarised reasons (here quoted nearly verbatim) were:

(1) The large number of cases met with in which "partial or complete nasal obstruction existed, and had existed for years with normal hearing and normal ears."

(*a*) In anterior nasal stenosis, partial or complete, due to syphilis or to lupus, "it was the greatest rarity to observe any impairment of hearing." (Tilley had pointed out that in bony occlusion of the posterior nares deafness was conspicuous by its absence in all reported cases.)

(*b*) In treating, on a very extensive scale, atrophic rhinitis with gauze packing, entirely obstructing respiration, it "had never produced deafness; on the contrary, occasionally pre-existing deafness had actually improved"!

(*c*) In nasal polypi, even in children, deafness was notoriously rare. "The same held true of nasal obstruction due to deflected septa and spurs." (Lack did not appeal to sinusitis, but it was pointed out by others that when acute otitis followed it was of the nature of an accident due to injudicious hyper-pressure douching and syringing.)

(2) "Growths in the post-nasal space—*e.g.* adenoids—caused deafness, but here there was no obstruction or negative pressure at the orifices of the Eustachian tubes, the plane of the site of obstruction produced by adenoids being posterior to the orifices of the tubes."

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

(3) In Eustachian obstruction deafness, he asked, "Why did negative pressure in the post-nasal space exert its influence on the tympanum and membrane when the tube was obstructed and not when it was patent, and how was it that the greater the amount of obstruction of the tube the more marked the indrawing of the drumhead?" "Surely Eustachian catarrh and obstruction, with or without more or less middle-ear catarrh, was the cause of the ear trouble in these cases, and not negative pressure."

(4) "Children with simple nasal stenosis were usually not deaf." (This was in contradiction to Horne and others, who, as I think very rightly, asserted that nasal obstruction, apart from post-nasal obstruction, though a sufficiently prominent factor in adults, was a much more prominent factor in children on account of the *relative* smallness of the nasal cavity in them, and Horne also suggestively called attention to the fact that the Eustachian trumpet was on a lower plane in children, and also nearer the floor of the nose, of which it was almost a direct continuation in line. It must be remembered, too, that the tube is relatively wider and shorter in children than in adults.) "Children with adenoids and also adults were often not deaf, but only when the tubes were blocked."

(5) The immediate improvement following adenoid operations might be "better explained by the lessening of the Eustachian obstruction resulting from hæmorrhage than by the negative pressure theory."

It will be seen that Lack and Tilley failed to appreciate the proviso insisted on by the supporters of the negative pressure hypothesis—that rarefaction in the post-nasal space only obtained when the degree of obstruction acting *per se* was a moderate one, and fell short of that which necessitated mouth-breathing. The majority of otologists, however, were at one with Lack in rejecting the alleged negative pressure influence in any circumstances.

It should be clearly stated and understood that those who took part in the discussions above mentioned were almost without exception of opinion that *a certain amount of clearly unnecessary nasal operating for deafness was being perpetrated at that time.* A few even thought it was very prevalent, though this was the opinion for the most part of certain specialists only who were not represented at these discussions. It was alleged that some enthusiasts went so far as to remove small septal spurs and cauterise the mucosa, with the promise of relief in long-standing middle-ear deafness, and even in cases of otosclerosis with open tubes.

Of those who took part in these controversies in this country nearly twenty years ago, all survive except Baber.

The subject has now come up for review and stocktaking by almost the same seniors again, who will now have the advantage of hearing the opinions of those of our junior *confrères*, many of whom were not practising otologists at the period of controversy early in this century, and the questions are: Does the modern view more or less correspond with those held by the more moderate members of the catarrhalist group? Or, Is expert opinion to-day widely divided? Are there any separatists? And, again, Are there any new aspects of this question?

I think I may conclude that the influence of nasal obstruction *per se* in the absence of accompanying catarrh has few adherents at the present day, and that even the very moderate and plausible claims made by Scanes Spicer and Dundas Grant for the negative pressure factor in

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

moderate degrees of nasal obstruction which fall short of mouth-breathing have not caught on.

Although we all of us admit in varying degrees the influence of nasal tumefactive catarrhal factors on the tubes and tympanum, yet the considerable number of cases of various forms of nasal catarrh in which the ears are not distinctly affected require explanation. Is an individual predisposition to catarrh, more especially to aural catarrh, a necessary additional factor in the production of deafness? How else can we explain the number of cases with nasal polypi, a typical catarrhal disease, with varying degrees of obstruction, in which the deafness is so slight as not to be acknowledged by the patient and only demonstrated by careful testing? Is it not a fact that nasal suppurative sinusitis is rarely followed by tympanic suppuration apart from those exceptional cases following operation or the injudicious use of the nasal douche? Why does the so-called dry catarrhal process, with crust and fœtor, so seldom cause deafness?

Again, the ætiology and pathology of the atonic palate of Woakes, following nasal catarrh, require further elucidation, as does the mechanism by which this condition leads to deafness.

May there not be just something in the associated area theory of Woakes? How are we to explain the occasional rapid relief of tinnitus and vertigo in various ear lesions by nasal cauterisation except by this reflex theory? It is alleged that otosclerosis is influenced for the worse by nasal operations and cauterisations. Is not this on the assumption that the ear is *reflexly* influenced for the bad under these circumstances?

In reference to enlargement of Luschka's tonsil: does this affect the tube and tympanum by the spread of tumefactive catarrh or by narrowing of the post-nasal space? What is the explanation of the *immediate* relief of deafness in many cases after the removal of adenoids? Again, is it not a fact that the mere removal of adenoids in children often relieves the accompanying nasal catarrh without any *ad hoc* treatment of the nasal cavities proper?

I hope that we may arrive at some definite conclusions as to when relief of ear symptoms in cases with accompanying nasal lesions can be expected, and when it is not mearly justifiable to operate on the nose, but unjustifiable neglect to omit to do so.

Mr. Norman Patterson: For clinical purposes it may be useful to regard the middle ear as an accessory sinus or annexe of the nasal and post-nasal spaces, which may be looked at as one tract. The tympanum may be considered as corresponding to the frontal sinus and the Eustachian tube to the fronto-nasal canal. It is reasonable to suppose that infection is carried to the cavities in question along their respective ducts in exactly the same way. A pad of adenoids, or a neoplasm in the nasopharynx, may at times play the same part as an enlarged middle turbinate, a polypus, or other swelling in the neighbourhood of the middle meatus. The analogy is further brought out in considering the treatment of inflammatory diseases of the ear on the one hand and sinusitis on the other.

The President read the following letter from Mr. Lambert Lack: "I am very sorry I cannot be present, as my views seem to have been considered of so much importance. On re-reading they seem to be more reasonable than one would expect after such a long period of years, but I entirely disagree with Dr. Hill's interpretation. My opinion is opposed

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

only to a theory of nasal obstruction acting by negative pressure. That nasal catarrh produces deafness I have never doubted, and obviously nasal obstruction produces nasal catarrh or predisposes to it. In olden days we fought a foolish theory of negative pressure which wrought much harm, but perhaps now is dead and forgotten."

Sir StClair Thomson: I approach the subject from the nasal side. We should check our observations by noting the conditions of more healthy subjects, as I have done for the last eight years. At Midhurst patients are only submitted to me to see whether there is anything wrong with the larynx, but I have used the occasion to look also at the nose, nasopharynx, and, where necessary, at the ears. In that way I see many patients who make no complaint of nose or throat; and yet I have been struck by the large number of them who have nasal obstruction without aural disease. So I have come to consider that this "negative pressure" theory is, as Dr. Hill put it, quite a "dead donkey." I am inclined to think the trouble is more pyogenic than obstructive, but there, again we are met with difficulties in these cases of ozæna and sinus suppuration, in which ear disease is not by any means the rule. When I was looking up the matter for my text-book, I investigated the records of all the published cases of patients with congenital atresia of the posterior choana, and it was remarkable that in them deafness or ear trouble was not noted. I operated upon a boy with an enormous nasopharyngeal fibroma—and other similar cases have been recorded—who was a constant mouth-breather because of the blockage, and yet deafness was not marked. Dr. Hill says it is accepted that catarrhal processes in the nose tend to extend to the ear, but I question whether it is as much accepted as that catarrhal affections of the nose extend to the pharynx, or affections of the pharynx to the larynx. We have to bear in mind local resistance and predisposition. I am sometimes asked to give an opinion—either a primary or a secondary one—as to whether a septum should be resected on account of symptoms, and I have seen a number of patients who have been told they have a deviated septum, and that, if it is not operated upon, they will go deaf. That is quite unjustifiable. But if the patient is already deaf, or has had ear attacks, I think it is right to tell the patient that to improve the air-passages—if they are open to improvement—is a wise precaution, to preserve the hearing they still have.

The point on which I differ from Dr. Hill is, that a catarrhal process in the nose has not, necessarily, a tendency to extend to the ear. The physiological view is, that the catarrhal process tends to attack both, not of necessity by a process of extension, but that the patient has either a congenital tendency, or a congenital loss of resistance in these two organs; in other words, he is a catarrhal subject. We know how difficult it is to explain the fact that in some families adenoids will cause one train of symptoms, and in another family another set of symptoms, just as other abnormalities seem to run in families. We ought to take account of the lowered resistance of certain organs in certain people, or a greater predisposition to certain diseases.

Dr. Albert Gray: The phrase "negative pressure" is not justifiable; one might as well speak of dry rain. Negative pressure is an indication of something which does not exist. The right term in this connection is "diminished pressure." With regard to individual differences in people who suffer from nasal catarrh, I agree with what Sir StClair Thomson said, and that is the point I try to emphasise. Many individuals suffer from nasal obstruction, and yet only a limited number of these suffer from

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

dulness of hearing. That is one of the reasons why the results of operation on the nose for the relief of deafness are so often unsuccessful. I believe otosclerosis to belong to the degenerative conditions, not to the inflammatory. If there is a nasal condition which may show a tendency to produce deafness, it is not uncommon for the deafness to progress even when the nasal condition has been rectified. Many supposed cases of catarrhal deafness are those in which otosclerosis has also commenced, and that is why we may speak, correctly I think, of mixed cases.

Mr. CHARLES HEATH: I regard aural catarrh as a constitutional affection, more than as a condition brought about by irritation or obstruction in the nose. Catarrh may and does affect the ear *and* the nose, or the ear or the nose. I have seen patients with no nasal catarrh who yet had undoubted catarrhal deafness. I have seen many cases of operation on the nasal septum which were not beneficial. Yet they seem to be more popular than do those on the turbinal bones. After both anterior and posterior turbinectomy has been done, I have seen the middle portion, which was left, still obstructing. This middle portion seems by many to be regarded as sacred: it must not be touched. A deaf servant in my house, who was a mouth-breather, had also double otorrhœa. I asked Dr. Jakins to remove her inferior turbinals. He said she would probably have a dry pharynx if he did. I replied that it would be dry in consequence of the nose transmitting air when the secretions of the nasal mucosa were diminished. Both her suppurating ears dried up, and the perforation healed as a result of the operation. I have seen other and similar cases. Yet I join Sir StClair Thomson in condemning the custom of promising improvement of hearing by nasal operations.

Dr. WATSON-WILLIAMS: Dr. Hill has referred to the attitude I took up in the discussion eighteen years ago, and has characterised me a catarrhalist. My subsequent experience has made me even more so. I reject *in toto* the negative pressure hypothesis, in favour of which I have not heard a sound argument. I believe the influence of septal deflections and adenoids mainly depends on the catarrhal affection which may be associated. The reason of the variation in the results of operation on the septum in cases of deafness depends on the fact that often the nasal obstruction has led to a superadded infection of the nasal passages and sinuses—*e. g.* after an attack of influenza. In such a case the determining cause of deafness may be the septal deflection, if the deafness is due to the spread of that catarrh to the ear. I wish to draw attention to the group of cases in which pain is referred to the ear in sphenoidal sinus disease. Many years ago I was asked to see a patient, a boy, aged twelve, who was suffering from severe pain in the ear. I found nothing wrong in the ear, but slight febrile conditions, etc., led me to think he had influenza. I was then more chary of entering the sphenoidal sinus of a boy of that age than I should be now, so I left directions that if he did not improve with palliative measures I should be asked to see him again to explore the sinuses. So severe was the pain referred to the ear that Mr. Cheatle was called in, with the view of doing a mastoid operation, but found nothing wrong in the ear. A little later Sir Victor Horsley was called down, when the patient was moribund, and it was thought to be cerebro-spinal meningitis, but the cause was not diagnosed. The *post-mortem* examination revealed cavernous sinus thrombosis, which the practitioner, Dr. Hubert Wilcox, thought was due to the sphenoidal sinus infection.

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

With regard to the general relationship of nasal catarrh to diseases of the ear, excluding nerve affections and those due to meatal conditions, such as new growths, syphilis and tubercle, I conclude that in most cases the aural affections are catarrhal—*i. e.* infective—and that in a great proportion of them the original source of the infection is the nose and naso-pharynx, either from rhinitis or nasal sinus infection, or it may be from infected adenoids. How far otosclerosis is due to toxic absorption from an infected ear is too much of an open question for discussion to-night. But I want to emphasise the frequency of a *latent* sinus infection, sometimes non-purulent, especially of the sphenoidal sinus, as the real source of otitis media. A young man, aged twenty-three, was brought to me by a practitioner who had been treating him for subacute mastoiditis of some weeks' duration. But he had supra-orbital neuralgia also, and he was found to have frontal sinus suppuration, and suppuration of the maxillary antrum. After I had operated upon the maxillary antrum and the frontal sinus the whole condition cleared up, and he went out to the Front with a sound ear. Since then I have been more consistent with my exploration of sinuses in cases requiring mastoid operation, and now I do not do that operation without first exploring the sinuses, by means of the suction syringe, which occupies one minute. It is astonishing with what relative frequency one finds the sinuses affected. Recently I had satisfied myself, in a patient upon whom a mastoid operation was to be done, that there was no sinus infection, but, on exploring, I found in one maxillary antrum a considerable amount of muco-pus. I made a pernasal opening and drained, to avoid having my operation spoiled by infection passing up the Eustachian tube to the middle ear. The presence of sinus infections is allowed to rest too much on the actual presence of pus, but a catarrhal secretion, if examined histologically, will often give a valuable clue when there are polynuclears and pyogenic organisms with polynuclears, showing there is active infection in that sinus, though I do not say such a sinus must require operation. If there is otitis media in association with infective sinusitis, they are probably interdependent conditions. Almost all cases of chronic otitis are infective, not necessarily purulent. It may be a dry otitis media and yet be infective. The result of my more recent observations is that the sinuses are infected in a larger proportion of cases than we have been led to suppose. My experience is that the more pus there is in the sinus, the less is the likelihood of the infection spreading to the ears. I have seen robust-looking patients with the nose full of polypi and pus, and the copious polynuclear exudation has apparently kept the development of organisms in check. If I am correct, this is the explanation why, in cases of well-marked signs of suppuration with polypoid degeneration, one comparatively rarely finds otitis media. In other cases, though the patient is depressed and pale, there is little to be seen. I therefore lay stress on the importance and relative frequency of the non-suppurative yet infective cases of sinusitis, for I fear they are often overlooked.

Mr. Claud Woakes: It is interesting to hear my father's work referred to by Dr. Hill. I myself follow his methods daily, and with some success. In treating deafness we must choose our cases, and be careful not to promise a cure of the deafness. The word "cure" is not in my medical vocabulary. I tell patients I shall probably give them relief if I remove what is causing the trouble. When I seen an Eustachian tube which is not functioning, whether due to obstruction in the nose, or pressure, or ethmoiditis, I treat those conditions, and then open the

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

Eustachian tube by the ordinary method, with a bougie, and the results I have had have been fairly satisfactory.

Prof. URBAN PRITCHARD: I gathered it was said that the pressure of adenoids, by blocking the Eustachian tube, did not produce deafness. Still, we know that on the removal of adenoids the improvement in the hearing is often immediate. Some say it may be due to the hæmorrhage, but I do not believe that at all. I remember one case in which the patient had suppuration of both ears, and could only hear at ½ in. a 50-in. watch. and immediately after coming out of the anæsthetic after the removal the hearing was normal. Why that was so I never could tell. In patients with bad suppuration I do not at once remove adenoids, but prefer to purify the middle ears as well as I can. When the suppuration is practically at an end, I remove them. The removal of adenoids in the presence of suppuration has produced mastoiditis.

With regard to the previous discussion, and the operations on the nose, we thought they were done much too frequently. I think we all practically objected to removing spurs in cases of otosclerosis. I am very glad Dr. Gray has improved our nomenclature. At Boston I said I wished somebody would invent a good name for otosclerosis, because all that was correct about the term in use was the "oto."

Mr. MARK HOVELL: When there is double nasal obstruction in a case of deafness, it is especially necessary to attend to the nose, and in some cases removal of a spur is beneficial, but much depends on the size of the spur, for it is not necessary to take away the whole of every spur. There should be a free air-way through the nose, but many people breathe comfortably through what appears to be an obstructed nostril, as air will pass readily through a tortuous passage, and the sensation of the patient can probably be trusted in this matter.

With regard to the question of adenoids, on which Dr. Hill touched, I have long held very decided views with respect to their recurrence. I used frequently to get recurrence, and one day the friends of a boy upon whom I had operated about two months before brought him back, saying he was no better and that his mouth was as widely open as before, and, therefore, the operation had not done any good. I knew all the adenoids had carefully been removed, so I anæsthetised the soft palate, and on examining the nasopharynx saw it was quite clear, but that both choanæ were blocked by the enlarged extremity of each inferior turbinated body. After the removal of these with a snare nasal respiration was fully restored, and ever since I have passed a snare as a routine measure to ensure the extremities, if enlarged, being taken away, and since have had no recurrence of adenoid growth. This procedure, I maintain, cannot do any harm, even if there is nothing to come away. It used to be taught that if the adenoids were removed nasal obstruction would disappear, but the case I have quoted clearly shows this to be an erroneous idea.

Dr. DUNDAS GRANT: I do not think it is desirable to divide the members of the specialty up into camps. With one or two exceptions, I think that if the members of the various groups were together in consultation in any given case their opinions would exactly coincide. Dr. Law once told me he was sure the Vienna otologists would have been more successful with their cases if they had been better rhinologists. In one of our former discussions much confusion existed with regard to the diagnosis even of otosclerosis, and reproaches were uttered because one or two people were removing spurs with the intention of curing that disease. They had evidently not been able to diagnose otosclerosis, but would do

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

so to-day. They were probably confused also as to what constituted nasal obstruction. I pointed out in one of our great discussions that even though a nose may appear thoroughly obstructed, we have to ascertain whether there is *actual* obstruction before we operate. It may be said that if there is septal deflection to one side, and a narrowing of that cavity, there is a larger space than normal on the opposite side, and that one large cavity is good enough. But even though there is a large cavity on one side, if the other is obstructed the patient has got the use of only one nostril. It is not a stretching of mechanical mathematics to say that the degree of suction or negative pressure is in proportion to the obstruction, and when only one nostril is useful the space for entrance of air is diminished. It will be generally accepted that an obstruction on one side keeps up a catarrhal condition, but a wide nasal cavity is not a safeguard against catarrh, and the infection may extend along the Eustachian tube. "Negative pressure" is a term we understand, whether it is scientific or not, but it must be taken in its proper perspective. When there is partial obstruction in the nose and the patient is trying to inspire through it, there is a lowering of pressure behind the obstruction. I do not doubt this has in itself some effect in producing vascular tumescence, especially if there is in-suction of the *alæ nasi*. The inspiratory dilatation of the thoracic cavity tends, however, to draw the blood into the thoracic organs and diminishes the peripheral vascularity. At the previous discussion an argument urged against Dr. Scanes Spicer's theory was that both nostrils may be full of polypi and yet there may be no signs of tympanic catarrh. His answer was, that in the absence of attempts at nasal breathing there was no negative pressure in the nasopharynx. We have all seen cases in which removal of obstruction has been followed by recovery from Eustachian catarrh: whether it was cause and effect it is difficult to say. No one would now entertain the idea of removing a small spur in otosclerosis and promising good hearing as a result.

Dr. P. G. Goldsmith: Before one operates upon the nose in a case of deafness, he should have a very careful record made of the degree of hearing. So many people have done operations on the nose and depended on what the patient said afterwards in forming a judgment on the benefit derived. The patient would feel better and brighter as a result of more air going into his head, as nasal obstruction often produces the feeling of dulness and stupidity. The hearing power should also be taken afterwards, irrespective of what the patient's own impressions are. Such a precaution would prevent the occurrence of that kind of case in which young women have had the turbinals and septums operated upon, and the operation for adenoids performed, with the subsequent discovery by another practitioner of commencing otosclerosis, together with a family history of the same complaint. Such procedures tend to bring discredit on the specialty. The question as to why some cases are very much benefited from adenoid operation, while others are not, I do not attempt to explain, but it is noteworthy that while some are relieved temporarily, others do not benefit at all, yet each case is of the catarrhal type. It is possible that one set of cases may have general lymphoid hyperplasia, and so it is conceivable that a tubal hyperplasia is the predominating feature in the cartilaginous portion. In the one set the progress will be fairly rapid, while in the other there will be little or no progress.

Another point is, that in examining cases to see whether the nose should be operated upon, it is the common belief that operating on the nose will improve the hearing. Not always. I think the important point

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

is the permanency of the improvement. I have a record of the hearing taken, then I inflate the ear and re-examine it in about twenty minutes. If the improvement is not maintained, I do not have an operation done on the nose with any idea of affecting the ear; any operation done on the nose is for the nose only.

Accurate case-taking will avoid many disappointing results. Careful records of the hearing tests both for diagnostic and comparative records is essential to sound practice. Furthermore, careful records of the progress in improvement is of first importance, since it is of great value in our determining when to *stop* treatment. Over-treatment is unfair to the patient, disappointing to the surgeon and patient alike, and for the latter may be disastrous.

Dr. JOBSON HORNE: When discussing the benefit conferred by nasal treatment on deafness, otosclerosis is one cause of deafness which must be excluded. I do not know of a single case of pure otosclerosis which has benefited by nasal treatment apart from other treatment.

Mr. W. STUART-LOW: I agree with another speaker that it is a pity to divide those who practise this specialty into sets or camps. Were I to receive a label I think it would be "Sepsisist," because I believe that in most of these cases there is a degree of sepsis present, and that we do not take cultures of the discharges frequently enough. Why do so many instances of marked deafness in the course of nasal catarrh recover their hearing completely? It is because in such cases the catarrh is due to the presence of such simple organisms as the *Micrococcus catarrhalis* as distinguished from septic organisms. But if you find septic organisms in the nose, the patient is liable to have fugitive sepsis of the middle ear, and the repetition of this produces exudative or dry catarrh of the middle ear, and a more permanent form of deafness results. One important precaution, therefore, is the careful bacteriological examination of the discharge from the nose. We have been told that in complete obstruction of the nose there is often no deafness. Why? Because there is no sepsis, but, if sepsis results, the patient will get fugitive attacks of middle-ear sepsis resulting in dry catarrh of the ear. We should operate for this condition if there are repeated attacks, because it will lead to deafness. The cause of repeated attacks—namely, anatomical abnormalities in the nose—should be removed by operation, all forms of nasal obstruction being removed.

Dr. KELSON: Formerly, as senior clinical assistant at hospital for several years, I had the opportunity of watching cases after operation, and chronic cases as well, and so of judging the results of treatment better than when only seeing new cases. It is most important to know under what conditions, if any, operation on the nose is likely to be followed by relief of deafness, tinnitus or giddiness. My experience shows that there is a fair chance of some relief when, with nasal obstruction, (1) there is a marked tendency to colds in the head with increase of aural symptoms during the cold; (2) there is improvement on inflation; (3) there is improvement after sniffing alkaline lotion up the nose—this is often very striking, but whether by removing mucus or germs, or reflexly, is not so clear.

I shall not refer to adenoids, as they are, strictly speaking, outside the range of this discussion.

Twenty years ago many more minor operations were performed on the nose, especially on either end of the inferior turbinate, but subsequent improvement in hearing was very rare.

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

Mr. HERBERT TILLEY: I can only say that in the opinion I expressed at the British Medical Association meeting at Ipswich in 1900 I am more confirmed to-day—namely, that obstruction of the nose *per se* has no influence in the production of those forms of deafness which are characterised as of middle-ear origin, except in so far as it acts indirectly in maintaining, or in promoting, catarrhal conditions. These are probably of microbic nature, and I believe them to be the cause of the infections of the middle ear which lead to the chronic forms of deafness in which we are interested to-day. I regard the treatment of otosclerosis by the removal of spurs as an illegitimate proceeding. You have only to remember the histological demonstrations of the lesions in otosclerosis which Mr. Fraser, Dr. Gray and others have shown us from time to time to bring such an idea of treatment into ridicule. With regard to the term "negative pressure," I was glad to hear Dr. Gray express himself in disfavour of such ridiculous terminology. Curtis, of America, said we might just as well speak of vomiting as "negative swallowing!"

With respect to the reflex action of nasal disease on the ear, I think I was the first to emphasise this in the discussion on sinus suppuration at the British Medical Association meeting at Leicester in 1904, when I brought forward a case showing the influence of sphenoidal sinus suppuration in the production of severe earache. The operating table was in the patient's house ready for the performance of a mastoid operation the following morning, but at 10 o'clock overnight the lady felt so well that she said it could not be her ear which was at fault, and refused surgical treatment. A few days later she consulted me, and I discovered sphenoidal sinus suppuration. We opened the sinus, and she has never had any more ear trouble. There was no symptom in the ear except intense earache, and while this was in progress the pinna was hot and flushed, in marked contrast with that of the other side. Because of that pain it was thought there must be some deep-seated trouble in the ear, for it is well known that in certain rare cases of mastoid suppuration the tympanum may be intact.

With regard to the question as to what should guide us in determining whether a nasal operation will benefit a case of deafness, my own practice is as follows: If I find a patient's deafness varies from time to time and nasal obstruction is present, and if I find that Politzer's inflation or the Eustachian catheter improves the hearing even for a period of twenty minutes, I have not the slightest hesitation in dealing with any nasal disease or structural abnormality. But if I find that inflation of the tympanum has no effect on the chronic deafness, I do not think there is any call for dealing with the nose as a curative measure *quâ* the ear. To operate for the nasal comfort of the patient is another matter. I think that is the one test on which we can safely base our practice.

There are many points raised in Dr. Watson-Williams's observations, and the views he has advanced seem plausible, but I feel that if our practice is to be based on his conclusions we may be led into many difficulties. If I understand him aright, he maintains that one cannot be sure that any sinus is healthy unless the bacteriologist proves its contents to be non-infective. My own instinct would be to rely on my clinical judgment, this being based on the symptoms and the result of my examination rather than on the report of the pathologist.

Dr. DONELAN: As Dr. Hill says, the term "idiopathic" is applied to diseases of which we do not know the cause and it should not be adopted by modern otologists. I have always understood that negative pressure

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press

could exist only in the tympanum, and then only from interruption of the normal equilibrium by closure of the Eustachian tube and absorption of the air in the tympanum.

Mr. Stuart-Low rightly says that none of the obstructions mentioned has a permanently injurious effect on the hearing until there is retention of secretion in the nose or its accessory sinuses and septic or other changes occur in the secretion. As to the causation of otosclerosis, the analogy with the occurrence of chronic rheumatic arthritis in sequence to chronic nasopharyngeal inflammations will doubtless suggest itself to many.

The removal of spurs is not likely to have any effect on chronic otosclerosis, but spurs are often removed while gross obstructions at the chondro-vomeral juncture, for instance, are neglected. Where there is marked septal deformity, its correction is to be preferred to the removal of functionally active turbinals. Each case must, however, be treated according to its individual features.

Sir StClair Thomson: This association of ear pain with sphenoidal sinus disease does occur, and I have carried its proof through to the bitter end in a case in which I did a *post-mortem* examination. It is published in my paper, "Cerebral and Ophthalmic Complications in Sphenoidal Sinusitis."[1] The complaint was simply of pain in the ear, and the patient was sent to me at an ear hospital, but nothing aural was found wrong. He died of suppuration of the sphenoidal sinus with meningitis. At the *post-mortem* examination the ear was found intact.

The President: The thanks of the Section are due to Dr. Hill for the way he opened the discussion. All the speakers seem to be agreed that catarrhal conditions resulting from nasal obstruction do cause or contribute to the possibility of aural affections, and that in these cases the treatment is obvious. We see such cases every day, and we know that this is true; but whether middle-ear deafness can be relieved or its progress arrested by nasal treatment for real or apparent obstruction when catarrh is non-existent has not been decided at this meeting. Some cases seem to improve—others do not. The question can only be settled by quoting or publishing accurate statistics of cases extending over a period of years, and in order that a definite decision be arrived at by our Section this should be done.

Abstracts.

PHARYNX.

Tonsillectomy in the Tuberculous.—Frank L. Dennis. "The Laryngoscope," November, 1917, p. 805.

Dennis has operated on thirty-four cases, but has only observed the patients after operation in twenty-two instances. Of the latter the results are distinctly good in seventeen, poor in three, and of no effect in one. Five of the patients had laryngeal tuberculosis, one tuberculosis of

[1] *Trans. Med. Soc. Lond.*, 1906, xxix, pp. 12–71.

https://doi.org/10.1017/S1755146300019284 Published online by Cambridge University Press