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WHAT BENEFIT CAN EAR-PATIENTS DERIVE FROM NASAL TREATMENT.

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The causative relation of naso-pharyngeal anomalies to diseases of the middle ear is so evident and well known that you will find reference to it in all text books of otology. To what extent, however, we can benefit ear patients by treatment of their nasal and pharyngeal disorders is a subject on which views still differ. While all the systematic treatises written by European otologists discuss the treatment of nasal conditions in connection with catarrh of the middle ear, they speak of the nasal anomalies as an occasional cause and as a condition favorable to the development and maintenance of the ear disease rather than as the regular starting point of the trouble. And until recently it was not the practice in most European ear clinics to pay much attention to the nose except when compelled by urgent nasal symptoms.

On the other hand American rhinologists have insisted very properly, that since middle ear diseases are usually a complication of nasal disorders, the primary trouble should receive full attention. Indeed the drift of discussion at several public meetings of rhinologists has been such as to create the impression amongst general practitioners that ear patients require nasal rather than aural treatment.

In view of this divergence of opinion and practice I wish to present to you the conclusions which I can draw from fifteen years of personal experience in this work.

In starting with the proposition that *most* affections of the middle ear are secondary to naso-pharyngeal disturbances, I refer by "most" not to the number of patients, but to the types of ear-disease. For there are certain forms of disease of the middle ear which have no etiological connection with the naso-pharynx. As such independent forms of middle ear disease I would rank progressive sclerosis of the middle ear, tuberculosis of the walls, rare instances of metastatic intratympanic suppuration due to traumatism or infection through the drumhead. But with these exceptions *all instances of disease of the middle ear are the complications of previously existing naso-pharyngeal anomalies*. It is true that the etiological view can not be tested in every case met in practice, but its correctness can always be shown whenever a patient is observed at the time his ear-trouble begins.

The relation of the type of ear-disease to the particular form of naso-pharyngeal disorder has not

been emphasized sufficiently in the literature. My own experience can be summarized in the following propositions:

1. Acute pharyngeal inflammations cause either suppuration or catarrh with serous effusion into the tympanic cavity.

2. Chronic naso-pharyngeal anomalies lead to the proliferating or adhesive form of middle disease, the so called dry catarrh of most authors.

3. Whenever an acute catarrh has been started in the middle ear by an acute naso-pharyngeal process in a patient presenting persistent anomalies in the nose or pharynx, the tympanic disease will follow a protracted chronic course. Moreover it is in patients with persistent lesions in the nose or pharynx that acute disease of this space is most apt to lead to middle ear complications.

The therapeutic influence of nasal treatment upon ear disease can be presented to the best advantage by passing in review the separate naso-pharyngeal disorders.

A. The acute inflammation of the naso-pharynx in scarlatina, measles and diphtheria follows a self limited course, which we can not abridge with our present means. Hence in these instances nasal treatment is of very little service for the relief of the ear complications. If the involvement of the middle ear appears as a suppurative inflammation, it will as a rule become chronic except in very young infants, unless locally treated. If it takes the form of serous catarrh, it will generally get well spontaneously, but always quicker and more reliably with aural treatment than without the latter. The same considerations apply to ear complications in acute tonsillitis and acute coryza. But if there exist any nasal obstruction or enlarged pharyngeal or faucial tonsils, tonsillar inflammation as well as nasal catarrh, be the latter idiopathic or an incident in influenza or any other infection, can take on a chronic course. In such case the catarrh of the middle ear is also very likely to become protracted and aural treatment alone will not often succeed unless the naso-pharyngeal inflammation be removed.

B. Of chronic lesions the most important one is the enlargement of the pharyngeal tonsil, commonly known as adenoid vegetations. It is only in rare instances that this condition does not lead to middle ear complications. The least frequent of these is the proliferating form or the "dry catarrh." I have observed it as a consequence of enlarged pharyngeal tonsil only in older children or after puberty and have found it scarcely affected by any purely aural treatment. But it always ceases to progress after the pharyngeal enlargement is removed, unless other retro-nasal lesions are present. Its occurrence seems to depend on the retro-nasal catarrh maintained by the enlarged tonsil. To what extent, however, the morbid changes in the middle ear and Eustachian

tube can recede in these instances depends on the length of time they have existed.

More common than the proliferating form are acute infections of the middle ear, occurring whenever any acute inflammation takes place in the nose or throat of patients with adenoid vegetations. In such patients the acute middle ear inflammation as a rule turns into chronic processes. Aural treatment will generally cure a suppurative otitis as well as a serous catarrh of the tympanic cavity, even without treatment of the pharynx. But relapses are so common, that the removal of the enlarged pharyngeal tonsil is an unavoidable duty. The performance of this operation, one of the most satisfactory of all surgical procedures, generally suffices for the cessation of any complicating middle ear catarrh, although the cure of the latter can be much hastened by aural treatment. But in case of suppurative otitis, the removal of its starting cause in the throat is not sufficient for a cure; the otitis itself requires local attention.

C. Chronic anomalies of the faucial tonsils are not as common a source of mischief in the ear as is enlargement of the tonsil at the roof of the pharynx. The influence of chronically inflamed or enlarged faucial tonsils upon the ear seems to be an indirect one, by maintaining persistent pharyngeal irritation. Whenever this exists, removal of the tonsil enhances the possibilities of aural treatment. But the operation on the tonsils does not by itself exert the prompt curative influence upon the ear complication, which is so striking after the removal of adenoid vegetations.

D. The chronic, but severe nasal irritation in *ozæna*, nasal polypi and syphilitic ulceration results often in a protracted catarrh of the middle ear with effusion. In these conditions ear treatment alone gives only palliative results, while after the cure of the nasal irritation a permanent recovery from the middle ear catarrh can be looked for if proper local measures are continued.

E. The most common cause of the often intractable proliferating or adhesive forms of middle ear disease is the so-called naso-pharyngeal or retro-nasal catarrh. There exists much confusion amongst different authorities as to what constitutes naso-pharyngeal catarrh and a variety of morbid processes have been described under this head. It is needless to quote all different views on this subject since you can find them well summed up in Bosworth's treatise on the nose. My own experience has taught me to sift clinical observations in the following manner:

The symptom common to all disorders of the posterior part of the nose and nasal part of the pharynx is the accumulation of viscid secretion in the space above the soft palate, and upon the presence of this symptom we must base the diagnosis of retro-nasal catarrh. But we can distinguish between various conditions which give rise to this symptom. One of these is a subacute inflammation of the upper pharynx, characterized by redness of the mucous membrane and the presence of a purulent secretion. This form of disease has in my experience been easily cured by astringents, except where there is nasal stenosis. Whenever I found ear complications it was the serous catarrh which followed the same course as the pharyngitis and was stopped by the cure of the latter. A second form of retro-nasal dis-

ease is the disorder described by Tornwald as inflammation of the pharyngeal bursa. It consists either of cysts in the substance of the pharyngeal tonsil or suppurative inflammation limited to an open recess in that structure. But these disorders have not been frequent in my practice and I have not seen enough of ear complications with them to speak authoritatively.

By far the most common condition constituting retro-nasal catarrh is that characterized by a viscid white or gray but not purulent secretion coming from the posterior choanae and accompanied by no lesion recognizable by the rhinoscope. In such typical cases the pharynx appears healthy and is not reddened. The posterior ends of the turbinated processes show no characteristic anomalies. It is true, anomalies are often present, especially hypertrophy of the posterior ends of the inferior or even all the turbinated bodies or flat tumefactions or vascular swellings on the sides of the vomer near its rear end. But since the characteristic symptom namely, the presence of viscid phlegm behind the nose does occur in cases where no such lesions exist I can not but regard them as secondary complications. While I do not know of any satisfactory pathological investigation of this disease, I can only interpret the clinical facts as indicating a persistent irritation in the posterior part of the nose probably due to a limited localized inflammation. It is this form of retro-nasal catarrh without characteristic lesions which constitutes the starting point of the so-called dry catarrh of the middle ear.

Bosworth deserves the credit of having proven that retro-nasal catarrh can be maintained by any nasal stenosis and benefited or even cured by the operative removal of the nasal obstruction. While I consider this observation an important advance in nasal therapeutics I can not agree with Bosworth's opinion that retro-nasal catarrh is always due to nasal stenosis. I have seen many instances of persistent post-nasal viscid secretion with perfectly free and unobstructed nasal passages. According to my observations post-nasal catarrh is the remnant of acute diffuse inflammation of the nasal passages. Without denying that nasal stenosis is the most frequent condition which determines such a sequel to an acute catarrh, I must insist that many of the spurs and ridges on the septum which obstruct the passage in old cases of retro-nasal catarrh are themselves the result—not the original cause—of the persistent retro-nasal irritation and that in many instances the caliber of the nasal passage was not encroached upon when the disease began. Still even these late obstructions complete a vicious circle and serve to maintain the retro-nasal catarrh. On the other hand nasal stenosis of different degrees may exist a lifetime without leading to chronic retro-nasal catarrh. The etiology of the latter evidently depends also on other as yet undetermined conditions.

In opposition to Bosworth I must also claim that it is not the nasal stenosis as such which leads to the adhesive middle ear disease, but that this complication depends on the retro-nasal catarrh, for I have often seen the proliferating middle ear disease in connection with retro-nasal catarrh but with perfectly clear nasal passage, while I have never seen this form of ear trouble in patients who had nasal stenosis without post-nasal catarrh. If patients

with obstructed nose, but without chronic post-nasal catarrh get ear trouble during an acute attack of naso-pharyngeal inflammation it is usually the secretory form of middle ear catarrh which yields readily to aural treatment, provided the naso-pharyngeal inflammation does not become chronic.

The prognosis of the adhesive form of middle ear disease coincides with the prognosis of the post-nasal catarrh. If we can benefit the latter we can arrest the disease of the middle ear. But whether we can improve the patient's hearing depends on the condition of the middle ear at the time. If the disease has existed long there are probably adhesions which can not be recovered from, and while the patient may lose the feeling of fullness in the ears and the harassing noises we may only be able to promise him an arrest of, but not a recovery from his deafness. In recent cases of a duration of only some months the prospect for the hearing is generally, but not always better.

Where the catarrh is maintained by nasal stenosis, the operation of the latter cures the ear provided it cures the catarrh. But operations for nasal stenosis are not always as successful as writers would have us believe. If a septum shows a sharp crest it is not difficult to cut it off, but when the septum is simply crowding one side, either by a convex deflection or by a diffuse thickening, it is often not possible to restore nasal patency.

Cauterization of the inferior turbinated bodies is an operation which is even more often performed uselessly in retro-nasal catarrh than resection of septal prominences. While the removal of really hypertrophied or turgescient cavernous tissue may prove of great service in clearing the narrow passages, the burning of a mucous membrane which on account of the narrow space is incapable of swelling, gives often but great annoyance and no permanent benefit to the patient. Whenever there is appreciable hypertrophy of either the posterior ends of the turbinated bodies or of the lining of the vomer its operative treatment improves the post-nasal catarrh and with it the ear disease.

But I must repeat there are plenty of instances of post-nasal catarrh without obstructive lesions and the treatment of these cases and the prognosis of their ear trouble are at present very unsatisfactory.

A review of these observations from the aural point of view leads to the following conclusions:

1. Acute suppurative inflammation of the middle ear if not treated has a tendency to become chronic, the tendency increasing with the age of the patient.

2. Chronic suppuration of the middle ear rarely heals without ear treatment. Neither acute or chronic purulent otitis are influenced by nasal treatment, but the liability to relapses after their cure is decidedly lessened by the removal of naso-pharyngeal anomalies.

3. Acute catarrh of the middle ear will generally terminate in complete recovery under aural treatment and sometimes even without it, provided there are no persistent nasal or pharyngeal lesions. But when these are present the disease is more likely to become chronic in spite of aural treatment, and in many instances can either not be cured or if improved will speedily relapse unless the normal state of the nose and throat is restored.

4. Proliferating or adhesive disease of the middle ear is the consequence of retro-nasal catarrh and its

course is determined by the course of the disorder causing it. Aural treatment alone is practically useless in this form of trouble, while nasal treatment, if successful as far as the catarrh is concerned, will also arrest the ear disease. The restitution of hearing, however, depends on the length of time the disease has lasted and is often aided by ear treatment after the cure of the retro-nasal catarrh.

THE LIMIT OF HUMAN LIFE, AND HOW TO LIVE LONG.

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By common consent, human life has been limited to three score years and ten since the time of King Solomon, with a small minority surpassing that limit and a few who have lived a hundred years or more; and with conditions of life unchanged the period would doubtless remain the same. The conditions of life, however, have already changed. The influence of hygiene and measures of sanitation practiced since the beginning of the last half century, together with the wonderful discoveries and inventions employed for the comfort and protection of mankind generally, have unquestionably raised the lifetime of a generation several years. Moreover, this rising average must continue while popular education of the masses is becoming a universal policy, and the laws of health laid open to the people by the secular press everywhere; and now even the octogenarian may hope to spin out a few more years.

To man, life has ever been a matter of deepest concern and speculation has never ceased to pry into its mysteries, but the *art of living* seems to have been left to the promptings of appetite alone, until dietetics became a science, chemistry had revealed the properties and qualities of food, and physiology had clearly defined the functions of nutrition; and these have made possible the enjoyment of health and exemption from diseases leading to death.

Viewing the periods of life from childhood to old age, we observe remarkable changes. The child nourishes with avidity in compliance with nature's demand for material to build up the organism to full maturity of manhood, and the process of digestion is vigorous and complete. If food is taken in excess or of injurious quality, it passes off readily up or down as a harmless encumbrance; but this immunity is gradually diminished as growth proceeds until, finally, the acme of life is reached at the age of forty-five, when a new curriculum begins.

Heretofore pabulum has necessarily been expended for the purpose of development, as well as for ordinary waste incident to any period, but henceforth only the latter calls for a supply, inasmuch as the structure is now complete. The architect has finished the job and nothing more can be added without impairing its value or thwarting the design.

For some years yet self-indulgence may be tolerated, but always with more or less risk. If the habit of taking nutriment in quantities adapted to early life is continued, the surplus left after the loss by waste is supplied must either be cast off with much greater difficulty as age advances, or deposited as fat among the tissues to impair their functions. This is inevitable, for as manhood wanes imperceptibly into old age all the energies must participate in the de-