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SOME OF THE EFFECTS OF CHRONIC NASAL OBSTRUCTION.

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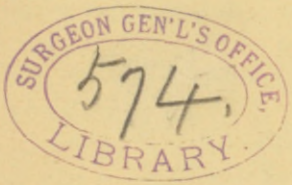

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SOME OF THE EFFECTS OF CHRONIC NASAL OBSTRUCTION.

BY CHARLES N. COX, M.D.,

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The importance of the nose as an accessory organ of respiration cannot be overrated. It is the purpose of this paper to point out some of the effects of chronic nasal obstruction. With the latter will be included not only effects on the organ itself and the rest of the respiratory tract, but also those on the organ of hearing, and, incidentally, certain general conditions which may ensue.

Long-continued obstruction of the nose, from whatever cause, is very liable to be followed by some trouble; so that its effects may properly be considered, in a general way, without reference to the particular cause of obstruction.

EFFECTS UPON THE NOSE ITSELF.

Naturally, the first thing that will be noticed is an interference with the passage of air through the nose, giving rise to *mouth-breathing*. This may vary in degree from a partial or occasional respiration through the mouth to a total and constant performance of breathing through that orifice. The latter degree is, of course, fraught with such discomfort that it is not likely to fail of recognition. We have all, at some time, experienced the abject misery of complete obstruction of the nose when suffering from an ordinary cold in the head.

It is the lesser degrees that are liable to be unobserved—and, without doubt, they are every day overlooked.

If both nostrils are obstructed there will be more or less *impairment of the sense of smell*. Indeed, the obstruction may be in the upper portion of the chamber and not interfere with

respiration, and yet totally destroy the sense of olfaction; for we may remember that the olfactory nerve is distributed to the upper portion of the nasal cavity as far down as the middle of the middle turbinated body and the upper third of the septum. Now, if this portion of the nasal cavity be shut up, there can be no odoriferous particles brought in contact with the terminal filaments of the olfactory nerve, and olfaction will be suspended.

As important as the sense of smell is to the enjoyment and well-being of man—and perhaps also to his protection—it is, after all, of secondary importance to the function of normal nasal respiration; and yet a slight impairment of the former is almost certain to elict complaint, while considerable abatement of the latter will pass unnoticed not only by the patient, but, in many instances, by the physician as well. And, worst of all, is sometimes not considered worthy of attention, even when observed.

Other consequences of nasal obstruction are an excessive *discharge* of mucus or muco-purulent matter from the anterior nares, frequent attacks of *sneezing* and *altered speech*—the so-called nasal twang, which is to be differentiated from the "dead" or muffled voice, caused by obstruction in the naso-pharynx by adenoid vegetations or other growths. It would be difficult to describe the difference between these two abnormal qualities of voice, but having heard them, it is possible to note it.

Pain, or a feeling of tightness over the bridge of the nose, is sometimes produced by obstruction, particularly when the middle turbinated body is enlarged and pressing against the septum.

A possible, but fortunately unusual, effect of chronic nasal obstruction is the production of a *red nose*. This is a disfigurement that makes the possessor "the well-known butt of many a flinty joke." Of course, this congestion of the end of the nose is generally the reflex of some gastric or other disorder; but it is possible for it to arise from a disturbance of the circulation within the nasal cavities, more especially from enlargement of the inferior turbinated bodies, as shown in the following illustrated cases, taken from my records:

Case I.—Mr. P. R., age forty-six, consulted me July 7, 1891. Digestion and general health excellent. Suffering from post-nasal catarrh. Both inferior turbinated bodies very much enlarged, producing sufficient obstruction to interfere materially

with nasal respiration. End of nose much reddened—and, indeed, this was the source of quite as much anxiety to the patient as the obstruction and catarrhal symptoms.

Thorough cauterization of each inferior turbinated body, with the galvano-cautery, soon removed the cause of obstruction, and at the same time the nose gradually resumed its natural color. This symptom had been present for some months before treatment. I learned quite recently that there has been no return.

Case II.—In April, 1895, I was consulted by Mrs. D. E., age thirty-four, who complained of occasional obstruction of the nose. Every time the nose was stopped up the tip of the organ became reddened. When the nose was free there was no redness. Touching the inferior turbinals with a probe cause them to swell, and at the same time the tip and alæ suddenly become red.

"Pinning" the turbinated bodies down, as Bosworth terms it, with the galvano-cautery has prevented ever since their swelling and the accompanying redness of the nose.

EFFECTS UPON THE NASOPHARYNX, PHARYNX, LARYNX, ETC.

One of the most common results of chronic nasal obstruction is *nasopharyngeal* or *post-nasal catarrh*. I doubt if it be possible to have any considerable degree of obstruction for a length of time without more or less of this affection following. It is so well known as to need little description. All are familiar with the distress caused by the thick tenacious mucus which collects in the nasopharynx, and with the hawking and scraping efforts to remove it. This common condition, which in its appellation has attained the dignity of a disease, is attributable in great part to some form of nasal obstruction, and in its treatment this fact must be borne in mind. To overlook this important element means failure. General treatment and simple cleansing sprays along with astringent applications, while good in themselves, and always producing more or less temporary benefits, are but evanescent in their effects when there is mechanical obstruction in the nasal passages.

To the failure to remove underlying causes is due the popular but erroneous idea that post-nasal catarrh cannot be cured.

When the nose is obstructed, and breathing takes place through the mouth, the pharynx undertakes to perform one of the very important functions of the nose, viz., that of moistening the air. Consequently there is an undue amount of water abstracted from

the mucous membrane, which induces *dryness of the throat.* The same is to be said of the buccal cavity. Note the dryness and attendant discomfort of the mouth and throat following only a few hours of temporary obstruction of the nose.

Lower down, that delicate and the wonderful organ, the larynx, may become irritated by breathing air that has not been filtered and freed from dust, nor sufficiently moistened nor warmed, as it should be had it passed through a normal nose. In consequence there may be set up an *inflammation* of that organ.

EFFECTS ON THE EAR AND ITS ADNEXA.

In the absence of a proper passage of air through the nose, every inspiration causes a partial vacuum in the nasopharynx. This may induce *congestion of the Eustachian tube* or *tubo-tympanic congestion*, giving rise to a stuffy sensation of the ear, more or less impairment of hearing, or tinnitus.

This condition of affairs predisposes to attacks of *acute* or *subacute middle ear catarrh.* As a result of the former, *acute suppuration* may ensue, which, if left alone, is quite prone to become chronic, with all its attendant evils.

EFFECTS OF A GENERAL NATURE.

It should always be borne in mind that effects of a general nature may be produced by nasal obstruction. Pretty much every trouble that the human body is heir to has been by extremists attributed to nasal obstruction, and, while it is possible that the most distant organs may, on rare occasions, be affected thereby, the whole list of more frequently observed effects can be narrowed down to a very few.

Asthma is one of these. There may be those to-day who disbelieve in any nasal origin of asthma. But their number is small. The frequent mitigation and cure of asthma by removal of nasal polypi or other obstructing neoplasms or lesions is proof so convincing as to leave little doubt that this distressing disease may sometimes be caused by nasal obstruction. The fact is of sufficient importance to warrant and demand a careful examination of the nasal cavities in every case of asthma that presents itself to the physician, if his desire is to try to remove the cause as well as to relieve the patient temporarily.

Cough is another occasional result of nasal obstruction. An enlarged turbinated body or a septal spur may be the cause of a slight tickling cough that has worried the patient and his friends and resisted the onslaughts of hosts of cough mixtures.

The anterior and posterior ends of the inferior turbinated body are the most frequent seats of such a reflex. Where it exists, cough can be produced at will by touching the sensitive areas with a probe.

Headache is quite frequently the result of nasal obstruction. It is, in fact, quite a common cause—especially of frontal headache or pain located over the frontal sinuses.

Aprosexia, or inability to fix the attention, loss of memory, etc., caused by circulatory disturbances within the brain, may be, and is sometimes, due to nasal obstruction. Although, to digress, I think this condition is more frequently observed in nasopharyngeal obstruction, as from adenoid vegetations. In fact, with the latter it is not infrequent.

It remains to speak of *ocular disturbances*. Certain affections of the eye are caused or aggravated by long-continued nasal obstruction. In great obstruction, as from fibrous polypus, the visual organ may even be displaced. With lesser degrees of intranasal pressure the eye is often so affected as to resist all forms of treatment directed to itself alone, the removal of the obstructing lesion within the nose being necessary to completely overcome the difficulty.

Occlusion of the lower orifice of the nasolachrymal duct, due to hypertrophy of the inferior turbinal, is sometimes overlooked in dacryocystic disease. I am inclined to think that this fact is not quite as fully appreciated by ophthalmologists as it should be, and that the nasal speculum would frequently reveal the main seat of the mischief, which, being removed, would save the patient the disagreeable if not painful ordeal of having a probe passed through the duct at frequent intervals for months with, at best, only temporary benefit.

DISCUSSION.

Dr. E. H. Babcock: I would like to make one slight addition to the paper, or to the thoughts suggested there, and that is more or less from a dental standpoint. We all know that the teeth, if the jaws are normally developed, occlude, and by their very occlusion prevent any change in the form of the mouth. Where there is nasal obstruction, as Dr. Cox has presented it, especially at night, the mouth is thrown open, and the masseter muscles acting on either side are very apt to draw the teeth in and disturb the arch. Consequently patients many times are unable to masticate their food, the saliva is not properly sup-

plied, and there is disturbance of the digestion of the starchy food.

Dr. H. A. Alderton: Mr. Chairman, I do not know that I have anything further to add to Dr. Cox's paper. He has explained about all the ill effects that come from diseases of the nose. A thought that struck me during the course of the reading was that some ill effects come from treatment of the nose.

It is not due to Dr. Cox that I bring this forward, but recently in the work of the Eye and Ear Hospital it has been brought to my notice in a number of cases of operations on the nose, especially in the treatment of adenoids, that the tendency is with the operative procedure to set up troubles of the middle ear. I noticed in a number of these cases that, notwithstanding rigid antisepsis, the removal of growths in the nasopharynx or in the nose proper has been provocative of middle-ear suppuration. This fact furnishes no reason why we should neglect operating on the nose, but it is only brought forward as one of the reasons for cautiousness in operative interference. Of course the growths should be removed as radically as possible, but the above is a result which may follow radical operations in the nose and naso-pharynx.

There is another form of treatment in the nose which may produce trouble in the ear; that is, through long treatment of the nose, irritation of the mucous membrane is set up by the use of sprays or the repeated use of cauteries or astringent or irritating applications, by which a subacute condition is produced in the Eustachian tube or in the middle ear.

The above caution has been uttered merely to bring forward the fact that the man who treats the nose and the throat must also beware of proceeding too rapidly and too radically, except as he may do it tentatively, watching closely the surrounding regions.

Dr. J. E. Sheppard: I saw this morning what makes the third case I have seen within a short time of motion of the membrana tympani with respiration. It seemed to me a matter of some little interest. In two of the three cases there was certainly some obstructive lesion of the nose, which led me to believe that the partial vacuum, which Dr. Cox speaks of in his paper, was at work in these cases.

In the case I saw this afternoon the nose was thoroughly wide open and there was plenty of room for respiration. In all the cases the motion of the drum-membrane has been inward

with inspiration and outward with expiration, indicating, as shown by this last case, that even with normal respiration through the nose there is a tendency to exhaustion of the air in the tympanic cavity. This must be certainly more marked where there is obstruction in the nose. One case I saw, which seems to have some relation to these other cases, was produced by prolonged public speaking. If the man went through a day without any public speaking his ears were perfectly comfortable. If he had a good deal of public speaking to do his ears felt "stuffy" after he had gotten through with his labor, and in this case there was some very slight obstructive lesion, the man, though breathing through his nose, had some difficulty in doing so A little opening up of the nostrils soon cleared up the ear symptoms.

Dr. J. S. Prout: Mr. President, I am going to ask Dr. Sheppard to explain to us how these operations produce middle-ear trouble. I never understood it very well, but I know it is an operation that is as necessary as any in surgery. Will Dr. Sheppard tell us a little more about how that happened?

Dr. Sheppard: The cases in which I have seen this occurrence take place have been, I believe, uniformly after operation on the nasopharynx. I do not remember seeing any in operations on the nose. After thorough radical removal of the so-called adenoid growths from the nasopharynx I think it is common for us to see for one, two or three days, or sometimes for a week, even more greatly obstructed nasal respiration than before the operation was performed. I have seen that repeatedly. The supposition on my part—I do not know whether it is a very scientific explanation or not—has been that there was a good deal of irritation, probably amounting to inflammation of the mucous membrane, of the whole nasopharynx, including that around the mouth of the Eustachian tube, and that this inflammation very naturally would extend and involve the mucous membrane of the whole tube, in that way causing insufficient ventilation to the tympanic cavity, and we all know that insufficient ventilation of the tympanic cavity, if maintained a sufficiently long time, may bring about inflammatory changes there, even to the extent of suppuration.

Dr. E. H. Bartley: I do not wish to take very much part in this discussion, because it is something I am not very familiar with, but I have seen a number of these operations, but have not seen any of these cases of middle-ear inflammation, following operations upon this location. I have noticed that after the

removal of those adenoid growths there is usually, for a time a somewhat disagreeable discharge. There is almost always more or less odor from the breath; and the very manner of performing the operation would lead to such a result. The operation is not a clean-cut operation, that leaves behind no material for disintegration, suppuration, or septic infiltration. It would appear to me that the explanation of these results might be purely septic, or a creeping up perhaps of a septic trouble following this operation, which, we must admit, is somewhat crude. The method of removing the growths by simply tearing them off, or scraping them off, or pinching them with a pair of forceps and getting rid of them in that way would not in other locations, where we could get at it, be regarded as very good surgery; but here, where there is no other way to treat them, you cannot make a nice, clean-cut operation, and I see no other way of doing it. But it strikes me that the explanation is purely one of sepsis—I mean the result following the operation, and traveling up the Eustachian tube is one of septic origin. If that is incorrect I would be glad to be corrected on the subject.

Dr. L. H. Miller: Mr. President, I would like to ask, in the majority of cases, where they have middle-ear trouble following adenoid operation, if it is not in cases where there has existed middle-ear trouble previously, for a large majority of cases of earache in children, I think, will be found to be due to adenoids. It would seem to me that in a large number of cases where we have middle-ear trouble following adenoid operation, it is where the trouble has existed or been there previously.

For the last few years I have done quite a large number of adenoid operations and I do not remember having seen a case where middle-ear trouble followed the adenoid operation except it existed there before. As far as the matter of sepsis is concerned after adenoid operation, I think we can be fairly antiseptic in the future treatment in most cases.

Dr. Alderton: I might add a few words to the last gentleman's remarks. I would say that I suppose there are as many adenoids removed in the Brooklyn Eye and Ear Hospital as in most institutions, and in my experience there, hardly a day goes by in which I do not send from two to five patients to be operated upon. They have been operated upon by competent men, men who are as thoroughly able to perform the operation as any under anesthesia, cocaine, ether, or chloroform, and also with antiseptic precautions, and it has been my experience that some

of these cases have been sent back to me with a suppurative otitis, cases that had previously no trouble of the middle ear—when I say previously no trouble, I mean previously no suppurative trouble. They might perhaps have had tubal obstruction or retraction of the drum producing some deafness, but no previous suppurative trouble—and following the operation the ears have gone on to acute suppuration on one or both sides, and the trouble has kept up for a longer or shorter period. Only recently a case was sent in after having been operated on, and that was the condition present. I myself have operated on a patient, a grown girl, in whom I took all the precautions I possibly could. She never had had any trouble with the middle ear—never had deafness—the drums were normal, tubes normal and in every way there was no trouble of the middle ear previous to operation. After the operation, with all the antiseptic precautions I was master of, unilateral suppuration set in, and was only controlled after treatment lasting a few weeks.

Dr. Bartley: Perhaps I do not make myself understood. It was a suggestion rather more than a statement. I did not mean to intimate that sepsis immediately followed the operation, but as a result of the disintegration of tissues left behind, or tissues somewhat disorganized by the operation and then allowed to slough and come away. The operation might be perfectly aseptic, and yet the after-infection might take place in that way.

Dr. J. M. Van Cott, Jr.: Professor Miller, of Berlin, in his able monograph on mouth organisms, has shown that sixty varieties of organisms exist in the mouth and nasal passages. I agree entirely with Dr. Bartley from that standpoint. It seems to me that it would be practically impossible to remove all the organisms in the mucous membrane in the locality under discussion prior to operation. I do not see how it would be possible to get behind the adenoids and render the field of operation perfectly sterile. It should also be remembered further that in the course of the operation for adenoids a very considerable amount of trauma is done to the tissues. You cannot get the organisms out nor can you get the adenoids out without producing the trauma which would make it possible for the infection to occur. I do not think it is competent to blame anybody for such infection, for it is neither possible to get the organisms out nor to avoid inducing the locus minoris resistentiæ.

Dr. L. H. Miller: I do not want to be understood that I consider it at all possible to keep a nasal operation thoroughly anti-

septic. I think it is utterly impossible, and I have no doubt that the fact of sepsis is one of the main causes when an acute or subacute exacerbation of middle-ear trouble follows this operation, and it is perhaps as liable to occur after my operations as anyone's, but, at least, I have been very lucky in that matter thus far, and at the Ear Infirmary, where I see and assist in treating a large number of ear cases, it is an extremely rare occurrence that the usually preëxisting ear trouble is made even temporarily worse by the adenoid operation. The chief of that clinic also informs me that he remembers of but one case where middle-ear trouble seemed to start up *de novo* soon after this operation.

Dr. Sheppard: I would like to add one word. I feel as if I might be put in a false light without a word of explanation. The extension of the inflammation of which I spoke has as its undoubted cause, sepsis; I had in mind when speaking rather the manner of extension than its cause, with regard to which I agree entirely with Dr. Bartley.

The Chairman: If there is nothing further to be said, will Dr. Cox please close the discussion.

Dr. Cox: Only a word, Mr. President. In reply to the first speaker, I purposely omitted any mention of any effect upon the teeth—the palatal arch being drawn out of shape, etc.—for this reason, that I aimed to confine my paper to the effects of chronic nasal obstruction, and while of course nasal obstruction, as well as nasopharyngeal obstruction, might bring about such results, it has generally taken place in childhood, and in childhood the obstruction is usually in the nasopharynx. Obstruction in the nose is not nearly as common in children as in adults, the obstruction being found in the majority of cases in the nasopharynx.

Relating to the results of treatment in the nose, the discussion as to its possible effects on the ear and so on has been so thoroughly gone over that I will not speak further of them, but I would like to mention one other additional evil effect of treatment that might be brought about. Dr. Seiss, of Philadelphia, reports several cases of closure of the lower end of the nasolachrymal duct as a result of cautery operations, bringing about the very thing that hypertrophy of the turbinated body itself might do, so of course we cannot be too careful in the use of the cautery in the nose.

There is one part of the nose I am very cautious about using the cautery on, and that is the posterior nares. I hesitate to

apply the cautery to the posterior end of the turbinated bodies. I believe disastrous results follow that sometimes, setting up inflammation there which extends very readily to the ear through the Eustachian tube. It seems to be prone to violent reaction, perhaps more so than at the more anterior portions of the turbinated body. Where there is any hypertrophy of the posterior end of the inferior turbinated body it is best to remove it by a cutting operation as with a snare; and apropos of this, Seiler, of Philadelphia, makes the point—and I believe he is correct in that—that very frequently posterior hypertrophies will disappear after treatment of anterior ones. I have fre quently seen this occur.