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A SHORT SKETCH

OF THE

PRINCIPAL FORMS OF OBSTRUCTION
OF THE EUSTACHIAN TUBES,

INCLUDING A

DESCRIPTION OF POLTIZER'S NEW MODE OF TREATMENT.

BY

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SKIN DISEASES, ETC.

(Read before the Glasgow University Medical Society, Dec. 18, 1863).

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1864.

A SHORT SKETCH

OF THE

PRINCIPAL FORMS OF OBSTETRIC

OF THE DYSTOCHIA TORSA

THE

DESCRIPTION OF PRACTICE AND MODE OF TREATMENT

J. MCALPIN ANDERSON, M.D.

Author of "The Principles and Practice of Midwifery," "The Principles and Practice of the Art of Midwifery," "The Principles and Practice of the Art of Midwifery," &c.

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A SHORT SKETCH
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It is unfortunately a trite remark amongst the members of the medical profession, that very little can be done towards the alleviation and cure of diseases of the ear. Who then can wonder that this idea has been taken up by the public at large, and has permeated through all classes of society? And what is the result of such a maxim? It is, alas! too apparent. The treatment of one of the most delicate organs in the human body has in great measure been neglected, or fallen into the hands of the ignorant and unprincipled, who fleece their victims by holding out delusive promises of cure, and if they do no other harm, bring increasing discredit on a most important and valuable branch of therapeutics. How often have I been consulted by patients who have laboured under deafness, not for days, or weeks, or months, but for years, and who are reaping the sad harvest of those doctrines of the profession in the annihilation of the sense of hearing. With what anxious care does the physician watch the premonitory symptoms of consumption, that awful malady which has carried off so many of the fairest and most promising, and yet with what criminal indifference does he too often neglect the rapidly increasing signs of deafness till at last the patient has lost all hearing power! It is in the hope of averting such a reproach from any of the members of this society, that I take the liberty of directing attention to one of the most important divisions of aural surgery—that interesting

group of diseases, namely, arising from obstructions of the eustachian tubes. I believe I am not far wrong in stating that at least one half of the cases of deafness which come before the physician are due to, or complicated with, a partial or complete obstruction of the eustachian tubes.

These passages, as all of you must be aware, pass upwards from the back of the throat to the middle ear, thus connecting the pharynx with the cavity of the tympanum; and, as the mucous membrane of the nasal, buccal, pulmonary, and gastrointestinal tracts is continuous with that of the eustachian tubes, you can readily understand how disease affecting the lining membrane of any of these reacts by sympathy or by direct transmission upon the eustachian tubes. And when I remind you that the osseous portions of these passages are only about a line in diameter, you will have no difficulty in comprehending what a small amount of disease of the mucous membrane is capable of producing obstruction.

Now, before proceeding further, it may be well, for the sake of those who have not made a study of the subject, to inquire how an obstruction of the eustachian tubes produces deafness, a question which involves another, namely, What is the use of these canals? Their use is obviously to permit escape of mucus from, and to allow entrance of air into, the cavity of the tympanum. If the *mucus* does not escape, as happens when an obstruction occurs, it accumulates, fills up the cavity of the tympanum, and prevents the free transmission of the vibrations of sound to the inner ear, while it too often presses so injuriously on the drum as to cause it to give way, and thereby leads to a very serious injury of that organ. If no *air* enters into the cavity of the tympanum, as results likewise from obstruction, the pressure of the external air, not being counteracted by a similar pressure in the middle ear, the drum and ossicles are pushed inwards, the cavity of the tympanum is in great part obliterated, the contents of the labyrinth compressed, the transmission and effect of the vibrations of sound thereby restricted, and deafness produced.

It will thus be observed how very important it is to maintain a free communication between the cavity of the tympanum and the throat. But it was for a long time, and still is to a certain extent, a disputed point whether or not the faucial orifice of the eustachian tube is constantly open, so that there is *always* a free communication between the cavity of the tympanum and the throat, or only occasionally. It is not my intention to enter into an elaborate discussion of the "pros" and "cons," and I shall content myself by stating one or two facts which prove incontestably to my mind that it is only occasionally open, namely, when the

levator and tensor palati muscles are called into play so as to separate its outer from its inner margin.

If you blow air through your nose by means of Politzer's instrument, which I shall fully describe afterwards, and at the same moment perform the act of swallowing, you will at once experience a sense of fulness in the ears which does not disappear until you repeat the act of swallowing two or three times; but, if you blow air through your nose when you are not swallowing, no air enters the eustachian tubes, because the levator and tensor palati muscles have not been called into play and the faucial orifice remains closed.

This may be well illustrated if you get a patient who has lost the drum of one ear, and whose eustachian tube is pervious. If you perform this experiment while he is swallowing, air at once rushes out of the ear with a loud whistling noise, but if he does not swallow during it, no air comes out of the ear at all, because the levator and tensor palati are quiescent, and the faucial orifice is not open.

Again, if you expire forcibly, and at the same time keep the nose closed, after the manner of Valsalva's experiment, which I shall explain more fully hereafter, you will perceive the same fulness in the ears as in the previous experiment, owing to an excess of air being driven into the cavity of the tympanum; and this fulness does not disappear till the act of swallowing is repeated, by which means the faucial orifice of the eustachian tubes is opened, and the excess of air allowed to escape.

And if the membrana tympani is carefully examined with a good speculum during either of these experiments, it will frequently be observed that, at the moment the fulness is experienced in the ears, the drum is pushed outwards and remains in that position until the act of swallowing is repeated two or three times, when it retreats to the position which it occupied before the experiment.

Lastly, the effect on the ears of descending in a diving bell has been cited by Toynbee as proving the same thing. "It is well known," says he, "that during the descent the compressed air filling the external meatus produces a sensation of weight, and often of pain, by pressing the membrana tympani inwards. This sensation can, however, be at once eased by an act of swallowing, whereby the condensed air is allowed to enter the tympanum through the eustachian tubes, and thus afford support to the inner surface of the membrane."*

These three instances, then, prove that the faucial orifices of

* The Diseases of the Ear. By Joseph Toynbee, F.R.S., Churchill, 1860. P. 190.

the eustachian tubes are not constantly open, but only when the levator and tensor palati muscles are called into play.

But how are we to ascertain that the eustachian tubes are pervious, or rather what are the *essential* symptoms of their obstruction?

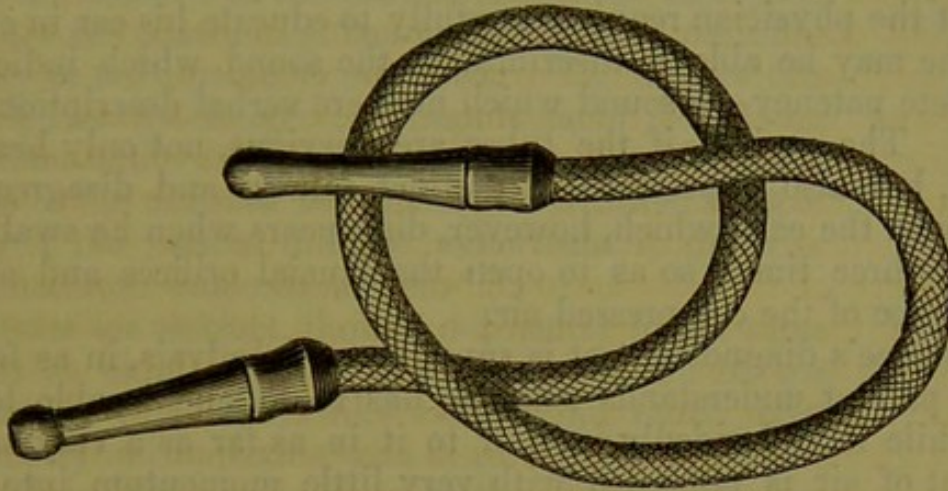
In all cases there is a certain amount of deafness, which is very considerable if the obstruction be complete, but of course the exact amount of the deafness, even in that case, will be regulated to a considerable extent by the morbid condition which has closed the tube. Thus, let us suppose two cases, in both of which there is complete obstruction, but in the one this is due to thickening of the mucous membrane at the faucial orifice only, while in the other, it is caused by an old chronic inflammation of the cavity of the tympanum, which has produced adhesions between, and rigidity of, the ossicles—we must expect to meet with a greater degree of deafness in the latter than in the former. But what we have specially to bear in mind just now is, that one of the essential results of closure of the tube, no matter from what cause it arises, is a certain amount of deafness.

Pain, though a common, is by no means a necessary symptom in uncomplicated cases, but tinnitus is almost always present to a greater or less extent. Then the appearance of the drum often affords us valuable information. It has fallen inwards towards the posterior wall of the cavity of the tympanum, for the reason which I previously stated (p. 2), so that it is much more concave externally than it ought to be, so much so in some cases, that the stapes can be distinctly seen. In consequence of this altered position of the drum, the head of the malleus projects very prominently forwards, so as to catch the eye whenever the speculum is introduced, while its handle is drawn backwards, and appears much thinner and smaller than when in its natural situation; and in extreme cases it is hardly visible at all. Then the surface of the drum is dull, glassy-looking, and irregular, owing to its altered position; and, instead of one triangular bright spot passing downwards and forwards from the point of the malleus, we often observe two or three of varying shapes and sizes on different parts of its surface. Sometimes we find a milkiness or dense opacity of the drum, but only in cases due to, or complicated with, disease of its coats, or of the cavity of the tympanum.

Toynbee describes an ingenious method of ascertaining if the eustachian tubes are pervious or not. "It has already been shown," he remarks, "that during the act of deglutition, with the mouth and nose closed, a small quantity of air is passed through the eustachian tubes into the tympanic cavities; a process which is attended with a sensation of fulness in the ears. The entrance of air into the tympanum can be distinctly heard

by means of an elastic tube about eighteen inches long, each end of which is tipped with ivory or ebony; an instrument which I have named the Otoscope (see fig. 13). One end of it is to be

Fig. 13.



inserted into the ear of the patient, and the other into that of the medical man, who must take care that no portion of the tube touches any neighbouring body. When the patient swallows a little saliva, the mouth and nose being closed, if the eustachian tube be pervious, at the moment that he feels a sensation of fulness in the ear, the surgeon will hear most distinctly a faint crackling sound, produced apparently by a slight movement of the membrana tympani. This crackling sound is that most usually heard; but in some instances where the mucous membrane of the tympanum is thick, a gentle flapping sound will be detected in its place.”*

Then there is Valsalva's method, which consists in causing the patient to propel air into the cavity of the tympanum by making an effort at forcible expiration, the mouth and nose being closed. Many patients do not understand what they are meant to do if you give them directions such as the above, and they are much more likely to comprehend and act upon your request if you say—“Blow your nose, but at the same time hold your nose tightly, so that no air can escape.” While he is carrying out your instructions, you must watch him carefully, and you soon come to know whether he has understood your meaning; and after you are satisfied of this, put your stethoscope against his ear, or make use of Toynbee's otoscope, and tell him to repeat the operation, but without moving his head in the least. If the eustachian tubes are quite pervious a peculiar “thug,” as it is called, or sound like that produced by inflating a minute

* The Diseases of the Ear. By Joseph Toynbee, F.R.S., Churchill, 1860. P. 195.

bladder, is elicited, which is audible both to patient and physician. In most cases there is a certain amount of sound produced, even where the eustachian tubes are almost completely impervious, especially if the obstruction is at the tympanic orifice, thus permitting the transit of air through the greater portion of the tube, so that the physician requires carefully to educate his ear in order that he may be able to discriminate the sound which indicates complete patency—a sound which no mere verbal description can teach. The patient, if the tubes are pervious, not only hears a sound, but also experiences a distinct fulness and disagreeable feeling in the ears, which, however, disappears when he swallows two or three times, so as to open the faucial orifices and allow the escape of the compressed air.

Toynbee's diagnostic test is superior to Valsalva's, in as far as every patient understands what he has to do, and is able to do it; while it is decidedly inferior to it in as far as a very small current of air is propelled with very little momentum into the cavity of the tympanum, in consequence of which the sensation of fulness in the ear is not nearly so distinctly felt by the patient, and the crackling sound not nearly so distinctly heard by the physician.

If you are not satisfied with the information conveyed by means of Toynbee's or Valsalva's experiments, you may have recourse to the eustachian catheter, the use of which has been so fully described in standard works that it is not my intention to occupy your time this evening by discussing it; but I quite agree with Toynbee in thinking that, as a means of diagnosis, it is very rarely required.

Let me now allude shortly to some of the more usual morbid conditions which are accompanied by a temporary or permanent, partial or complete, closure of the eustachian tubes; in doing which I shall touch upon the indications of treatment merely, and shall omit for the present all mention of the mechanical treatment, to which I shall subsequently refer.

Occlusion of the faucial orifice is very often met with in delicate children, especially after fevers or debilitating diseases. In them the tonsils are frequently enlarged, and the mucous membrane of the throat, nostrils, and eustachian tubes hypertrophied, and secreting abundantly. So great, in some cases, is the thickening of the lining membrane of the nostrils, that the patient requires to breathe almost entirely through the mouth; and when, in addition, the tonsils are very large, he is not only apt to snore while asleep, but likewise to speak with a nasal twang. Occasionally, during the act of blowing the nose, swallowing, coughing, sneezing, or any other act which calls the levator and tensor palati muscles powerfully into action, the

patient experiences a loud crack in the ear, followed by a sudden improvement in hearing, which lasts from a minute or two to one or two days, and gradually subsides. The amount of improvement at these times depends upon the amount of the previous deafness, and upon whether the obstruction has been, for the time, completely or only partially removed. The oftener this occurs, and the longer the improvement in hearing continues after each crack, the more hopeful must we be of the ultimate success of our treatment, especially if the patient did not experience it till after the treatment was commenced.

Adults are subject, though not nearly to the same extent as children, to a similar obstruction of the eustachian tubes from like causes, but much more frequently in connection with acute or chronic coryza, relaxed sore throat, or bronchitis. The tonsils are not nearly so often in a state of hypertrophy.

The treatment in children consists in a careful regulation of the diet, attention to the state of the stomach and bowels, and the internal administration of cod liver oil and tonics, especially those containing iron. Exercise in the open air is to be recommended, and a cold sponge bath in the morning, the patient being afterwards rubbed with a flesh brush or rough towel till thorough reaction is established, else harm is to be expected instead of benefit. Counter-irritation by means of mustard poultices applied to the angles of the jaws, and astringent and stimulating gargles are likewise of service. In some cases it is of use to paint the fauces with a solution of caustic (℥ss.—℥i.) every second day, or to touch the orifices of the eustachian tubes with solid caustic by means of Toynbee's caustic-holder (see fig. 14); and it is often of service to remove the patient from a relaxing to a more bracing climate, from which the best results may be anticipated. I am not an advocate like Mr. Yearsley for the excision of the tonsils, unless they are so large as to interfere with the breathing, as I believe that most cases can be cured without any such operation. If the nostrils are stuffed, it is useful to make the patient close the mouth, and breathe entirely through the nose occasionally; and I have observed benefit from making him draw cold water, or a slightly astringent solution, through the nostrils twice or thrice daily. In adults the treatment is that of the

Fig. 14.



affection which has produced the obstruction, combined with the use of local applications, such as those which I have just indicated.

A case resembling in many respects those to which I at present refer, and producing an obstruction of the tubes, though from a different cause, occurred the other day in my practice, and is worthy of mention :—

A gentleman, aged about 50, married, and with one child, consulted me with regard to deafness, which I found to arise in great part from an obstruction of the eustachian tubes. He had coryza to such an extent that he used about a dozen pocket-handkerchiefs daily; his tongue was covered with syphilitic fissures and mucous patches, and his whole head was the seat of syphilitic psoriasis. All of these symptoms were of old standing, and all due, in my opinion, to the syphilitic taint which in earlier years he had acquired. I ordered him an eighth of a grain of the bichloride of mercury thrice daily, after food, made into pills with the extract of cinchona, and made him try Valsalva's experiment thrice daily. In a short time my opinion of the nature of his case was verified by the partial subsidence of the eruption on the head and the disease of the tongue; while at the same time the coryza diminished greatly, and the deafness was ameliorated.

In many cases the obstruction takes place at the upper or tympanic orifice of the tubes in connection with morbid conditions of the cavity of the tympanum.

Acute and subacute inflammations of this cavity are almost invariably accompanied by a certain amount of obstruction of the tubes, and if the disease is neglected, this may become complete, and defy all efforts to remove it. The most usual causes of this affection are exposure to cold, violence done to the ear, or extension of inflammation from the throat, especially if the patient be debilitated. It is a frequent accompaniment of fevers, especially of scarlet fever. The symptoms are usually so marked, and the treatment so obvious and so well understood, that it is unnecessary for me to take up your time by discussing them;* and while this inflammation may be mistaken for meningitis or cerebritis, the obstruction of the tubes, with which we are at present concerned, can never be mistaken for those cases of obstruction at the faucial orifices to which I have just referred.

Internal otorrhœa, or chronic discharge of muco-purulent, purulent, or lymphic matter from the cavity of the tympanum, escaping externally through an orifice in the drum—one of the most frequent and troublesome of the affections of the ear—is, in the majority of cases, accompanied by a partial or complete obstruction of the eustachian tube, and, if the disease has lasted for a

* For an account of this affection, see my sixth paper in the *Glasgow Medical Journal* for April, 1863.

length of time, it may be impossible to overcome the obstruction. The symptoms of this affection render its nature too apparent; and the principle of treatment is to endeavour to remove the inflammation and discharge by appropriate remedies—which it is not my intention to allude to here—and at the same time to resort to one or other of the mechanical means of overcoming the impervious condition of the eustachian tubes, which I shall refer to presently, and which have sometimes the effect, not only of rendering the tubes pervious, but also of removing the discharge which may for years have resisted all kinds of astringent and stimulating injections.

Very often we meet with a form of disease of the tympanic cavity, a chronic inflammation, producing hypertrophy of its mucous membrane, the drum remaining entire, but assuming a milky, or even a dense opaque appearance. And sometimes it exhibits that crescentic opacity which I described in a recent paper in the *Glasgow Medical Journal*,* and which I have attributed, rightly or wrongly, to fatty degeneration. The tympanic orifice of the eustachian tube is sure to become impervious sooner or later; and in old standing cases the mucous membrane of the tympanic cavity becomes rigid, and adhesions are apt to form between the ossicles, which are occasionally ankylosed, and the walls of the cavity which contains them. While these cases are often due to cold, especially in strumous or debilitated subjects, there can be no doubt in my mind that the gouty or rheumatic diathesis, or a syphilitic taint, not unfrequently plays some part in their production. The chronic inflammation of which I now speak often comes on so insidiously as to escape for a long time the attention of the patient, and it is only when he begins to be sensible of a gradually supervening deafness that his attention is at last aroused to his condition. Frequently no pain whatever is experienced throughout the whole course of the complaint, though usually there is more or less of tinnitus. If neglected, the hearing power gradually but steadily diminishes, until—and this too often when he is in the prime of life—he is beyond the hope of cure or even of improvement.

As regards treatment, it will be found that the occasional application of two or three leeches to the orifice of the meatus, and long-continued counter-irritation over the mastoid process, are of service; while I have observed benefit from a prolonged course of the bichloride of mercury. In strumous subjects, cod liver oil and iron are indicated, and if there is any tendency to gout or rheumatism, anti-arthritic or anti-rheumatic remedies must be resorted to. In the case of a lady who consulted me lately, who had the above symptoms, and was very rheumatic,

* For January, 1863. Paper, No. V.

a course of Fowler's solution removed the rheumatism entirely, and certainly relieved the deafness. In addition to the indications just referred to, an endeavour should be made to overcome the usual accompaniment of obstructed eustachian tubes by mechanical means.

I do not intend referring to obstructions of the central portions of the eustachian tubes, the faucial and tympanic orifices being free—as these are decidedly rare, and are therefore of less practical value—especially as time has not permitted of my doing more than alluding in the most cursory manner to the more frequent and prominent forms of obstruction. Before leaving this part of the subject, however, let me point out to you shortly the principal means of distinguishing obstruction of the tympanic, from that of the faucial orifice of the tube.

If the patient complains of pain in the site of the tympanic cavity, and if a milkiness or opacity of the drum is discovered, or a rupture of that structure with or without discharge; or if there is the history of an injury done to the ear, as by a blow, the introduction of a foreign body, &c.; and if there is an absence of all signs of disease in the neighbourhood of the faucial—the obstruction is probably at the tympanic orifice of the tube.

If, on the contrary, the drum, although collapsed and dull, is neither milky nor opaque, and if there is an absence of all the above signs of inflammation or congestion in the cavity of the tympanum, and if, on the other hand, the patient is affected with congestion and thickening of the mucous membrane of the fauces with or without enlargement of the tonsils, or with bronchitis, we may reasonably suspect that the obstruction lies at the faucial orifice.

But we must always bear in mind the possibility of the obstruction extending along the whole course of the eustachian tube, owing to a congested or other morbid condition of its lining membrane, and there is no reason why we should not meet with an obstruction at both orifices, the central portion of the tube remaining pervious.

I pass now to the last division of the subject, the mechanical treatment of obstructions—a method of treatment which is applicable to those arising from any morbid condition, except, perhaps, acute inflammation in the tympanic cavity. By this means alone we are enabled, in some instances, to effect a cure—in those, namely, in which the obstruction is merely a mechanical one, or in which the inflammation which originally produced the obstructions has subsided, leaving the eustachian tubes blocked up. In these, the mechanical is the only treatment which is of any service. But in the majority of instances, the inflammation which was the exciting cause of the obstruction is still in operation, in which case means must generally be adopted, such as

those indicated in the previous sections, to remove it, as well as mechanical treatment to open the tube.

There are three methods of operating mechanically upon the eustachian tubes :—

1. By eustachian catheterism.
2. By Valsalva's experiment.
3. By Politzer's method.

1.—Eustachian catheterism has been so thoroughly described, and its merits so carefully discussed in standard works—especially in Kramer's work on diseases of the ear, which has been translated for the Sydenham Society, and in Mr. Yearsley's work, entitled "Deafness Practically Illustrated"—that I must, for want of time, refer you to them ; but I shall take the opportunity presently of contrasting its merits with those of the other methods.

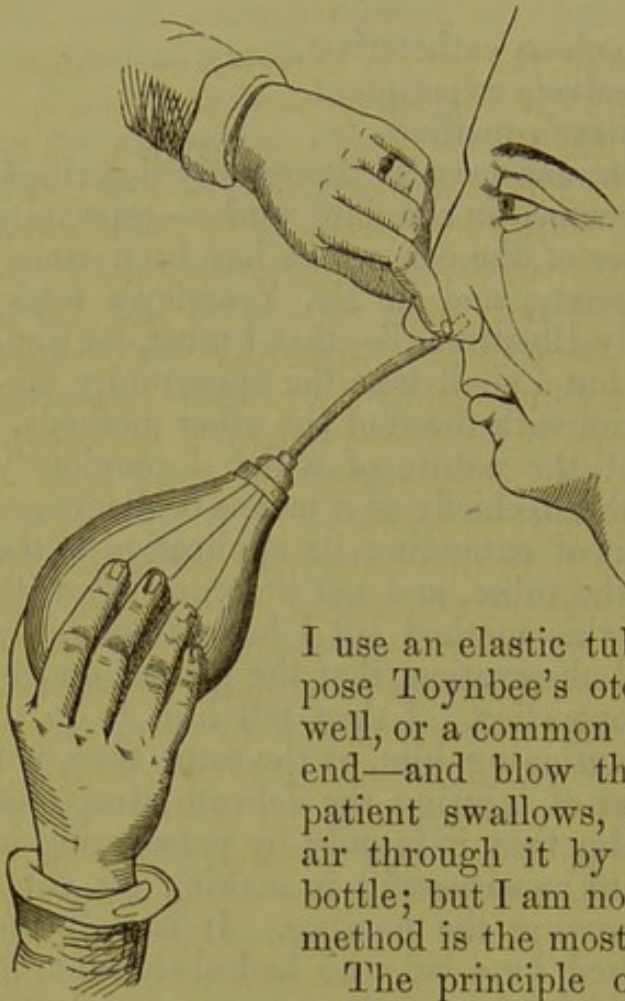
2.—Valsalva's experiment, the nature of which I previously explained, has been used hitherto chiefly as a means of diagnosis, but I have been in the habit of extending its application to the treatment of obstruction of the tubes, and not unfrequently with success. I never prescribe this method till I have thoroughly satisfied myself, by personal observation, that the patient understands how to perform the operation. I then tell him to do so three or four times daily ; cautioning him, at the same time, not to expire too forcibly for fear of injuring the delicate structures of the ear, and informing him that it is only by persevering in his efforts that he can hope to be successful in making air enter the tympanum, and in improving the hearing. It is only the other day that I was consulted by a lad who had obstruction of the eustachian tubes from thickening of the mucous membrane at their faucial orifices, and whom I treated according to this plan, to the exclusion of everything else, in order to test its efficacy. When he came to me, my watch was heard by him at the distance of two inches from the left ear, and three from the right. On his return a fortnight afterwards, the watch was heard six inches from the left ear, and more than two feet from the right. I could cite other cases did time permit, but I think I have said enough to show you that, in some instances at least, Valsalva's experiment is of value, not only as a means of diagnosis, but also in the way of treatment.

3.—The instrument of Dr. Politzer of Vienna, is that to which I wish more particularly to direct your attention. This instrument was described, and its use illustrated by cases, in a recent number of the *Wiener Medizinische Wochenschrift* ; and it is from the perusal of a pamphlet containing a reprint of this paper, that I first had my attention directed to the subject.

The instrument consists of a piece of catheter, open at the end and several inches long, to which is attached a pear-shaped india-

rubber bottle, about the size of the fist (see fig. 15). The patient is told to take a mouthful of water, and the tube is then intro-

Fig. 15.

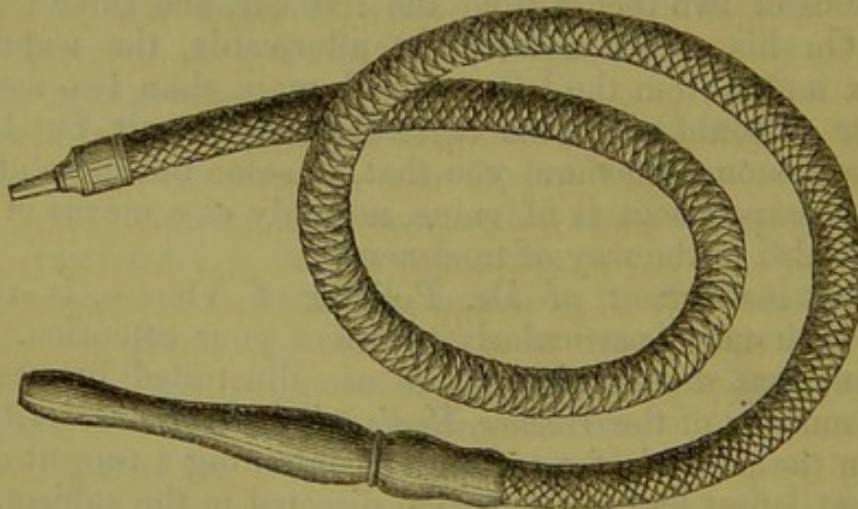


duced about half an inch into one or other nostril. The nose is then closed by the finger and thumb of the left hand, while, with the right, the india-rubber bottle is suddenly and forcibly compressed, and the moment before it is squeezed, the patient is told to swallow the mouthful of water. Instead of a piece of catheter, I sometimes use an elastic tube (see fig. 16), and not unfrequently

I use an elastic tube alone—and for this purpose Toynbee's otoscope serves the purpose well, or a common elastic catheter, open at the end—and blow through the tube while the patient swallows, instead of propelling cold air through it by means of the india-rubber bottle; but I am not yet prepared to say which method is the most satisfactory.

The principle of this treatment is easily explained. The act of swallowing brings the levator and tensor palati muscles into play; the soft palate rises, thus separating the cavity of the nose from the mouth and throat,

Fig. 16.



and the faucial orifices are opened. Now, as the patient swallows while the air is being driven through the nostrils, it, being

unable to descend into the throat or mouth, and the faucial orifices being open, rushes up the eustachian tubes into the cavity of the tympanum, unless the obstruction resist the force of the current of air.

If the obstruction be removed, the patient experiences a fulness in the ears and his hearing is immediately improved, provided always that the obstruction was the cause of the deafness. The same treatment requires to be repeated every day, or every two or three days for some time, as the improvement in the hearing which takes place after each operation gradually diminishes, in the majority of cases, and it is only after repeated trials that it remains permanent. But if there be no obstruction of the tubes this operation not unfrequently diminishes the hearing power for the moment, owing to the drum being forced outwards too much, and to the congestion of the ear which results from the sudden rush of air into the cavity of the tympanum.

In some cases, and especially in those obstructions connected with thickening of the mucous membrane of the fauces, the sudden improvement is such as to astonish the patient, and to cause him to burst forth with an exclamation of gratitude for the service rendered; but you must be careful not to promise too much beforehand, unless you have had considerable experience of the class of cases which are likely to be improved by it.

In cases which are improved by this treatment you will naturally ask, How often is the operation to be repeated? My answer is, Repeat the operation till the hearing becomes perfect, and remains so for some time after the last inflation of air, or till no further improvement takes place for the last three or four operations, and no retrograde movement in the intervals.

At some future time I may have the pleasure of laying before this society the results of a series of cases treated by this method; but, for the present, I must conclude these too lengthened observations by stating what I hold to be the comparative merits of the above methods of overcoming obstructions.

Politzer's treatment possesses these advantages:—The operation is so easily performed that it can readily be done by any practical physician, and requires no special instruction. It causes neither pain nor uneasiness to the patient, so that it is not objected to, except by some young children and nervous females, and then only from fear. It is altogether devoid of danger, and there is no obstacle to its performance, unless the absurd timidity of some persons.

Eustachian catheterism, on the other hand, is a difficult operation to those who have not had much experience of it, and therefore necessitates special instruction. It generally causes more or less uneasiness, or even pain, if not very skilfully carried

out. Some patients object to it very strongly, and for this reason it is occasionally inapplicable, and particularly in the case of young children, in whom mechanical treatment oftenest holds out a prospect of success. It is not altogether devoid of danger, and sometimes the bones of the nose exhibit abnormal forms, or the mucous membrane is the seat of tumours, which prevent the introduction of the catheter. But then, there are a few obstinate cases of obstruction which resist Politzer's treatment, and which yield ultimately to catheterism.

Valsalva's experiment has this advantage, that it can be carried on at home without the presence of the physician (although, to be sure, so in some cases can Politzer's treatment); it requires no apparatus, and it can thus be tried in conjunction with one of the other methods of treatment, especially if the patient reside in the country, and cannot come often to obtain advice.

And now, Gentlemen, in conclusion, I have to apologize for the fragmentary nature of these remarks, which is due in part to the extensive range of the subject which I have selected, making it quite impossible for me to accomplish more than a mere sketch of the principal features of obstructions of the eustachian tubes. But if I could think that I have succeeded in interesting any of the members of the society in this important and too neglected branch of medical science, and of leading them to study it with that care and attention which it deserves, I should feel that my remarks have not been made in vain.

Professor J. H. Bennett M.D.
with the author's Comments.

FUNCTIONAL DISEASES OF THE STOMACH.

PART I.

SEA-SICKNESS.

THE UNIVERSITY OF CHICAGO

PART I

PHYSICS