metrical. Contiguous spaces were sometimes separated from one another only by a thin septum of connective tissue. In some instances a larger space might be seen pushing upward the epithelial layer above it, which was more or less atrophied.

The margins of the spaces were sharply defined, and in some cases painted indications of being lined by thin endothelial cells. In other cases, this endothelial lining could not be made out. At the margin of a very few of the spaces a few flattened multinucleated, atypical cells were observed, which were regarded as of the same character as those seen in Case 1.

No evidence of a bacterial origin for the condition was obtained. As in the first case the spaces seemed to arise from the dilatation of lymph channels.

It will be seen that both cases followed abdominal hysterectomy, and the thought immediately suggests itself, may not this condition in some way be due to a blocking of the lymphatic system as a result of the operation? As to the formation of gas in these dilated lymph vessels, no further explanation can as yet be offered.

EARNACHE: CAUSES, TREATMENT, RELATION OF THE EXANTHETAMA THERETO.

H. H. Richards, M.N., Fall River, Mass.

Who of us has not been called, many times it may be, to relieve, for child or adult, that most exasperating pain, an acute earache? Who of us has not felt himself or herself almost helpless in its presence, and wondered what he or she could do to relieve the pain, while the little sufferer moaned and tossed and cried, and seemed not a whit the better for all we were doing, and yet we did not see the pain last for hours until finally, when child and attendants were well-nigh exhausted, nature has perforated the drum, the pain has ceased and the child has gone to sleep? Following this we have seen the ear discharge pus for a longer or shorter time, and the pain having ceased, the case has passed from our observation. Such being the facts, and the unsatisfactory nature of the treatment being generally recognized, I offer no apology for bringing to your notice to-night the subject of earache considered broadly as to its causes, and with especial reference to treatment and the relation of the exanthemata thereto. I include under the term earache those acute affections of the external canal, the drum and the tympanic cavity characterized by acute, more or less severe, pain in the ear.

1. Otitis media externa, including furuncle therewith. This affection is characterized by swelling and pain in the external canal, radiating to and sometimes involving the drum membrane. The pain varies with the severity and extent of the inflammation, but is not as severe as in affections of the deeper parts. In furuncle the mouth of one or more glands become stopped up; there is localized swelling and great discomfort, sometimes great pain, though in the main it is discomfort rather than severe pain. In my experience this is more common among adults than in children. In the more diffuse form there is general swelling, and the whole canal may be closed. I will not consider the etiology but confine myself to the question, Given the condition, what can we do for its relief? If the inflammation has gone on to pus formation, we should incise and liberate the pus, remembering that the amount of pus is always small, and that relief often comes from the incision even when no pus is present. Before the inflammation has reached the pus stage two methods of treatment are applicable, both of which have been found very useful: gelatin bougies as originally introduced by Gruber, and local applications. A modified formula for the bougies is given farther on. The bougie is inserted into the swollen external canal, and is allowed to dissolve there; and good results follow.

For this affection I am in the habit, however, of using a simpler remedy which has the merit of being always easily obtained and of invariably giving relief, never doing any harm, and of being applicable at any stage of the inflammation. I refer to a five-per-cent. solution of carbolic acid in pure glycerin. The carbolic acid produces anesthesia and eases the pain, while the glycerin, on account of its affinity for water, rapidly removes the serum from the part, and the swelling, heat and tension subside. As the heat and tension are often the things most complained of, the relief afforded is very great. The carbol-glycerin is applied on a small wad of cotton so rolled as to go as deep into the canal as possible, and changed every two to four hours. Once the patient has been shown how he can do this by the doctor, he will readily make the changes himself.

Suppose this does not wholly relieve, and it becomes necessary to incise the furuncle or any part of the swollen canal? Do not attempt to do it without an anesthetic unless you are especially called upon to do it, or the result will be unsatisfactory to both. The region is so tender that it is practically impossible for any one to hold still. Give a little chloroform or ether to primary anesthesia, and then with a suitable knife make an incision long enough and deep enough to go through all the tissue it is desired to open. The bleeding will doubtless be profuse, but will relieve rather than otherwise. Do not be disappointed if no pus comes; with an opening deep enough, the pus, if there is any in the vicinity, will find its way out. Apply the carbolic-acid-glycerin compound as before, and soon the patient is well.

2. Earache due to acute trouble in the middle ear from whatever cause. This is most common in children, less so in adults. In the majority of instances it is due to extension of inflammation from the nose and nasal-pharynx along the Eustachian tube to the middle ear. Hence the catarhal troubles of childhood, enlarged tonsils, adenoids and the exanthemata are the most common causes. The intimate relationship between adenoid growth and ear trouble has been often pointed out. Seventy-four per cent. of Meyer's cases of adenoid growth had ear trouble; and it is the experience of every one paying any special attention to the matter that a very large proportion of the cases of running ears have those growths as a cause, or one of the causes. The close anatomical relationship between the adenoid growth and the mouth of the Eustachian tube is sufficient to account for this. Furthermore the adenoid, being a lymphoid structure, is much more swollen and prominent at some times than at others; hence it may complicate the case many times when it is not the prime cause.

As exciting causes, sneezing cold perhaps comes first and most prominent; then the gripes, measles, scarlet fever, chicken-pox, whooping cough, diphtheria, pneumonia, syphilis, tuberculosis, meningitis and disorders.
Pain suggested, continued, and is peculiar, characterized by a severe lancinating character. What is to be done in the way of treatment? How best prevent injury to the drum and delicate structures, and how best preserve the hearing from present and future damage? First, the pain must be relieved. That the efforts of physicians in this direction have not been always crowned with success is proven by the large number of remedies suggested by various authors. Even the distinguished Politzer, in the last edition of his text-book, suggests all of the following as appropriate remedies in acute otitis media (acute earache):

1. Acetate of morphia, 0.2 in olive oil 10, applied as drops to the affected ear.
2. Oil of hyoscynamus, 24 grains; aqueous extract opium, 13 grains; as ear drops.
3. Opium saline, externally to mastoid and along canal.
4. Olive oil and chloroform, equal parts as ear drops.
5. Aqueous extract of opium and water, equal parts, put in the ear.
6. 10 per cent. carbonized glycerin.
7. 5 per cent. cocain in the nose, so as to reach the Eustachian tube, opening and influencing the ear from this direction.
8. Warm poultice to the whole aural region.
9. Tincture opium and water in varying proportions, in the ear as drops.
10. Cover the whole head with hot, moist cloths.
11. Analgesias internally.
12. Leccehes in front and behind the ear.

To these may be added the following taken from other sources:

Coacae, 5–10 per cent. solution in the canal.
Cocaine 0.5 per cent. solution. Cold about the ear, hot applications in the ear. Covering the ear with dry cotton.
Hot water bottle.
Air douche, with Politzer bag: but this only when acute symptoms have subsided. If well borne it can be used, but if it causes pain it is contraindicated.

Dr. Whitney, of New Bedford, reports very good results from the application directly in the ear of a few drops of the following: olive oil, ten grains; chloroform, one grain. This, he says, does not hurt when first put in and quickly relieves. To be repeated as needed. From my own experience I have the following to suggest as having given fairly good results: tincture of opium, or more preferably the fluid extract, one ounce; with atropia, four grains; mix. An equal quantity of this added to an equal quantity of hot water and the external canal filled with this as hot as can be borne; the ear stopped with a small pledge of cotton and the hot-water bottle applied to the ear.

The ordinary hypodermic tablet (morphia, $\frac{1}{2}$ of a grain; atropia, $\frac{1}{2}$ of a grain) dissolved in some hot water answers the same purpose, and has the advantage of being always at hand. Five-per-cent. carbonized glycerin used as for furuncle is often very efficacious, and has served me well, being continued after perforation has taken place or paracentesis has been done.

Of late I have been using some aural bougies, samples of which I show you. They are the aural bougies of Gruber modified by Wood, of Dublin, to which I have added from three to five per cent. of carbolic acid. They each contain three-sevenths of a grain of liquid extract of opium, one-fourteenth of a grain of cocaine and one-fourteenth of a grain of atropia in gelato-
The proportions of the gelatin and glycerin are important, and should be such that the bougie when inserted into the ear readily dissolves. To effect this there should be no more gelatine than is necessary to hold the glycerin in shape. When made they are covered with lycopodium. To use, wash off the powder with a little warm water, stick the end of a pin or toothpick into one end and then slip into the ear. They are very slippery and can be inserted without causing the slightest pain. Stopper the ear with cotton and lay the child down with a lightly filled hot-water bottle over. The bougie soon dissolves and the analgetic effect will last for hours. Furthermore, the glycerin is distinctly curative in that it tends to draw out some serum from within and lessen the tension. A paracentesis may perhaps be prevented.

In connection with any of these external remedies I believe, if there is any fever, from one-eighth to one-half a minim of a tincture of aconite hourly for a few doses, sufficient morphia or opium in some form to in a measure quiet the pain, and a saline cathartic. The pain is apt to be worse at night than in the day, and we must not drive ourselves and think the pain from the attack is over because with the advent of day the patient seems better. Supposing that in spite of all our efforts that the pain still continues, what next? In other words, when is paracentesis to be done? In answer to this question I cannot do better than to quote from Hartmann, who says: "Paracentesis is not indicated in simple catarrh of the middle ear and in cases of moderate pain. On the other hand, whenever the drum membrane is distinctly bulged outward from the pressure of the accumulating secretion, and when this pressure and the continuing fever and pain threaten spontaneous perforation, then paracentesis is strongly indicated. Besides this, it is indicated whenever after the subsidence of the acute pain a degree of deafness remains, due to the non-absorption of the retained secretion, the objective examination showing the presence of this secretion." I am sure it is better to do now and then a paracentesis when perhaps the case would have got along without it than to neglect to do one when it is indicated, even though it should happen, as has been claimed, that a serious inflammation is thereby converted into a purulent one through the entrance of germs along the canal. The operation, if done under ordinary antiseptic precautions, is devoid of any danger, and, if there is fluid, invariably relieves the pain. Also, whenever after the pain attack is over there is evidence of an accumulation of fluid in the tympanic cavity, it is better to remove it.

Two recent cases of mine will illustrate this point. A young girl, fourteen, delicate, severe earache several days, anodyne locally and internally. Some adenoids being present, these were removed. Examination of the drum at this time showed some fluid, but not a great deal, and when I saw her in the daytime there was seldom any pain. But nearly every night there was pain; and although I had at first thought that nature would absorb all of the fluid and that paracentesis would be unnecessary, I later concluded to puncture the drum. Some fluid was evacuated; the pain ceased entirely; and the hearing, which had been much impaired, was entirely restored.

Absorption seems to go on very slowly in the presence of much fluid. Remove the fluid, and resolution then goes on rapdilly. The following case will illustrate this: A woman, forty years old, had an attack of acute otitis media. The pain subsided under the skillful treatment of her family physician. A month later, finding that she was still hard of hearing, she came to me. I found the tympanic cavity full of fluid, the landmarks lost, and the drum bulging very decidedly outward. I did a paracentesis, and quite a quantity of fluid came out. The opening promptly healed, but it was two or three weeks before complete restoration of the hearing took place. I think in this instance, that, if the case had been wholly left to nature, there would have been more or less permanent loss of hearing, due to the thickening of the articular surface of the ossicles resulting from long-continued contact with the inflammatory products.

Paracentesis often prevents a serious inflammation from becoming a purulent one, prevents adhesions and permanent damage to the ear. Long-continued suppuration is always productive if for a few doses, sufficient morphia or opium in some form to in a measure quiet the pain, and a saline cathartic. The pain is apt to be worse at night than in the day, and we must not drive ourselves and think the pain from the attack is over because with the advent of day the patient seems better. Supposing that in spite of all our efforts that the pain still continues, what next? In other words, when is paracentesis to be done? In answer to this question I cannot do better than to quote from Hartmann, who says: "Paracentesis is not indicated in simple catarrh of the middle ear and in cases of moderate pain. On the other hand, whenever the drum membrane is distinctly bulged outward from the pressure of the accumulating secretion, and when this pressure and the continuing fever and pain threaten spontaneous perforation, then paracentesis is strongly indicated. Besides this, it is indicated whenever after the subsidence of the acute pain a degree of deafness remains, due to the non-absorption of the retained secretion, the objective examination showing the presence of this secretion." I am sure it is better to do now and then a paracentesis when perhaps the case would have got along without it than to neglect to do one when it is indicated, even though it should happen, as has been claimed, that a serious inflammation is thereby converted into a purulent one through the entrance of germs along the canal. The operation, if done under ordinary antiseptic precautions, is devoid of any danger, and, if there is fluid, invariably relieves the pain. Also, whenever after the pain attack is over there is evidence of an accumulation of fluid in the tympanic cavity, it is better to remove it.

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The consideration of the possible complications growing out of the scarlet fever is a symptom, or the principal symptom, is beyond the scope of this paper, as is also the consideration of the chronic purulent discharges which often follow acute conditions. A large share of the cases coming under the aurist’s care result from lack of treatment or improper treatment of such conditions as I have described; and of all the causes mentioned there are none more productive of permanent damage than the exanthemata, and of these scarlet fever is far the most serious. The most obstinate cases of purulent disease of the ear, those attended with the greatest amount of permanent damage to the tympanic cavity and the function of hearing, occur in connection with, or as sequelae of, scarlet fever. Too often it is overlooked or paid little attention to until the damage is too great to be more than partially remedied. In my experience, the worst cases of old suppurated or perforated drums, or complete destruction of the drum and one or more ossicles, with foul discharge and considerable caries and granulation tissue, have had their origin in scarlet fever. After leaving it as the nature and condition of the Eustachian tube, there is every opportunity for the disease to invade the tympanic cavity and do much damage there. The same is true, though in much less degree, of measles and diphtheria. In all of these the possibility of injury to the ear should be borne in mind. Any pain which is referred to the ear should be investigated. If there is any deafness during the disease or during convalescence, the cause should be carefully sought for. Fluid in the tympanic cavity should be drained and any resulting discharge properly treated. No case of the exanthemata should be regarded as finished as long as there is any discharge from the ear.

I do not suppose any member of this Society has ever been guilty of telling a parent that the child would outgrow conditions such as I have referred to, although if the testimony of patients is reliable they are often so told. The outgrowing of diseases of this nature is a pernicious fallacy. The children never outgrow them. On the contrary, as the ear remains bared in pus the pathologic process continues active, threatening all the time the general health and gradually destroying the hearing. When the individual seeks the help of the aurist, it is usually too late to do more than save the remnant of hearing and bring the active suppuration to a close; and even this is not always accomplished, as old adhesions remain. Let me urge upon you the necessity of looking carefully into the aural conditions present in your cases of the infectious diseases and of the exanthemata, especially in cases of scarlet fever, as scarlatinal deafness is much easier to prevent than to cure.

In searching for the causes of an earache the intimate relation between the nerve supply of the ear and the teeth must not be lost sight of, nor the clinical fact that some cases of earache are dependent on dental irritation. Conversely, toothache is sometimes relieved by remedies applied to the ear, especially those remedies containing chloroform. I have already referred to the grippe as a cause of earache. It is a very common cause, a large number of the acute serious inflammations having their origin in this disease. It is much less serious in its sequelae than the ear troubles incident to the exanthemata, having less tendency to eventuate in prolonged suppuration. Here, however, the liability of the ear to trouble should be borne in mind.

Clinical Department.

FRACTURE OF THE NOSE COMPPLICATED BY A RHINOLITH.

BY TIMOTHY J. RAEHORN M.D., BOSTON.

Complications are the rule in fractured noses, and consist for the most part either of a separation of the cartilaginous septum, of fracture of the same causing various degrees of obstruction to nasal respiration, of hematoma of the septum, or of abscess of the septum either unilateral or bilateral.

The fracture may also be complicated by its extension into the orbita or by its extension, or complete destruction of the drum and one or more ossicles, with foul discharge and considerable caries and granulation tissue, have had their origin in scarlet fever. After leaving it as the nature and condition of the Eustachian tube, there is every opportunity for the disease to invade the tympanic cavity and do much damage there. The same is true, though in much less degree, of measles and diphtheria. In all of these the possibility of injury to the ear should be borne in mind. Any pain which is referred to the ear should be investigated. If there is any deafness during the disease or during convalescence, the cause should be carefully sought for. Fluid in the tympanic cavity should be drained and any resulting discharge properly treated. No case of the exanthemata should be regarded as finished as long as there is any discharge from the ear.

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