SOCIETY PROCEEDINGS.

THE NEW YORK OTOLOGICAL SOCIETY.

Meeting of May 27, 1919.

DR. T. J. HARRIS, PRESIDING.

Atypical Mastoiditis.

DR. W. C. PHILLIPS: I want to speak in a general way of the prevalence during the past season of what we ordinarily call atypical cases of mastoiditis, in which there are but few classical mastoid symptoms. Many of them have little or no discharge; little or no pain; little or no temperature; but finally the few symptoms verified by the radiograph lead one to operate and very extensive involvement is found in the mastoid process.

I recall a private case in consultation with Dr. Friesner, which eventually required a double mastoid and in which extensive disease was found.

Another case somewhat different was a woman forty years of age, who complained of no pain in the ear, very little discharge, no mastoid symptoms, but enough redness of the drum and bulging apparent to lead me to believe that it was not a case of catarrhal involvement. I opened the ear drum, and she had some discharge for two or three days, but always complained of a sense of fullness on the side of the head. The discharge entirely ceased, and for about a period of over a week there was no discharge. She went back to her work and was apparently well, when suddenly she had a little bit more pain, and then a very profuse discharge of pus, and some temperature, but no tenderness of the mastoid. The discharge remained excessive, she had gone over a period of three weeks, and she was running a temperature of about 100 in the afternoon. I operated on her last week, and I have never seen a more extensively involved mastoid process. And yet that

woman never had any pain; she never had a temperature above 100, and for the first three weeks of her disease, some of the time no discharge, and almost none until the last few days.

DR. A. B. DUEL: As far as my two interesting cases go, one was a double mastoid and the other a single mastoid, with a very slight middle ear involvement. In one case I myself was called in, and in the other case another physician was called in, and in neither was there sufficient involvement of the ear to warrant opening of the drum. There was a slight redness, and a slight pain, which subsided immediately; and after three or four days, another attack of pain, and at that time an involvement of the middle ear. In all of those ears the symptoms advanced so rapidly, and the discharge was so profuse following the opening of the middle ear that it seemed a wise thing to open the mastoid.

In all three of those mastoids the involvement was just as extensive as in Dr. Phillips' cases. In one, both sinuses were uncovered. Now, it seemed impossible for me to account for this condition, except by the idea that the infection had passed across the middle ear without very serious involvement, and involved the mastoid cells; that the inflammation had gone on there for a number of days—in one case for a week or so, from the very beginning—and that after the mastoid had become completely involved, it passed back into the middle ear, and passed out of the drum and had to be opened. Of course, it seemed absolutely impossible that such an extensive involvement could possibly have happened in a very short time following the acute middle ear symptoms.

CHAIRMAN: What was the organism in your case?

DR. DUEL: It was streptococcus.

DR. S. McCULLAGH: I saw this young man about three weeks to a month after he had had an acute infection of his left ear for which a myringotomy was performed in an army hospital. There was a discharge for two or three days, and complete healing ensued. He came to see me for an acute catarrhal condition of his right ear, which cleared up under local treatment. He had very large tonsils, and a mass of adenoids, which I removed.

About nine days after the operation he had an acute suppurative attack in his left ear, for which I did a paracentesis.

The temperature at that time had been up to about 103; it went up to 105 $\frac{2}{5}$. Blood culture showed that the blood was swarming, literally swarming, with hemolytic streptococci. The ear was draining very well, and there were no symptoms, nothing in the ear picture that did not seem to be progressing favorably. There was no tenderness, no spontaneous pain, but the temperature was irregular. Dr. Friesner saw the case with me, and it was a question of whether the septicemia was secondary to the tonsillar operation.

The tonsillar cavity on the left side did not look well, and there seemed to be a slight amount of tenderness over the left jugular, with some involvement of the glands there. The boy was very sick, and it was decided that something must be done immediately. I think Dr. Friesner felt that the bacteremia was undoubtedly secondary to the tonsil operation as did I. I did not think that it could come from the ear, but at the operation I decided to go in through the mastoid on that side. This was six to seven weeks after his original infection. On opening the mastoid all the cells were full of granulation tissue. In the region of the bulb the inner plate was entirely destroyed, and there was an area about half an inch in diameter with a thick pad of granulation tissue on it. The sinus was plugged off, the jugular was tied and a portion of it resected. The sinus was opened, the wall of the sinus was not removed, the wound packed and the patient was put back to bed.

Inside of forty-eight hours his temperature reached normal, and continued normal and his recovery has been uninterrupted.

It was merely because of the slightly greater amount of tenderness over the left side, and the enlargement of the glands that made us go in on the left side originally.

Undoubtedly, this condition corresponds closely to the one that Dr. Duel referred to, in which there had been infection involving the mastoid, where the middle ear cleared up, and the destructive process had continued in the mastoid without any symptoms whatever. I had looked, of course, at his left ear when he came in complaining of his right ear, and the drum was practically normal at that time.

DR. I. FRIESNER: Surely atypical cases of mastoiditis have been more common this year than I have ever seen them before. I saw, during the months of January and February, four cases of perisinus abscess, in which there never had been any discharge from the middle ear. These cases began as very mild cases of otitis. No myringotomy was done, and the cases went on; all four of them had pain over the side of the head, and when I examined them the drums were not normal. They were thick, and in one or two of them there was distinct sinking of the posterosuperior wall.

There were three other cases that I saw during that time, or shortly after that time in the clinic, with precisely similar conditions; that is, there never had been any discharge from the middle ear; there had been an acute otitis of a mild character, followed by an intense hemicrania. After a little while they came to the clinic complaining of this pain over the side of the head, giving the history of a mild, acute otitis, four, six or eight weeks before; the tenderness was far back on the mastoid, in the region of the emissary, and the drum looked thick.

It seems to me that there must have been something peculiar about the infections this year if in an operative service as limited as mine I should have seen seven of those cases within so short a time.

As to Dr. McCullagh's case, I thought that the pyemia was a direct extension into the jugular from the pharyngeal veins, and we felt we had only one chance—that was to say, we must select into which vein this infection was entering. There was some difference in the two sides; the left side was brawny, somewhat brawny, and the glands were more numerous on that side than those on the right side. It was rather a surprise to me to see the findings in the mastoid. There was no pus, but the mucosa in the cells was very much swollen, and the horizontal portion of the sinus was covered with diseased bone; and on the dura, that is, on the outer covering of the sinus, there was a distinct diseased patch. The vein in the neck was perfectly normal. In other words, there were far more pathologic changes in the lateral sinus than there were in the jugular.

DR. W. C. PHILLIPS: I think this type of case calls for fine judgment. Yet every case has proven the diagnosis to be right.

DR. WELLS P. EAGLETON presented

A Case of Laryngitis With Unusual History and Most Unusual Pathologic Findings.

DR. WELLS P. EAGLETON: Almost all of us think that all this talk about tonsils and cleaning the teeth, etc., is a good deal of nonsense, but the postmortem presented made me believe that we can't avoid recognizing that if you are careful to look for chronic infections it can cause changes. And it is our business, if we see a diseased tonsil or bad teeth, to recommend their removal immediately.

Now, in this case, the thing that had made this man stay off was that he had always had headaches, never anything worse. But, in reality, he had a chronic infection that was producing a fibrosis in the vessels of his brain. It could have been prevented, if he had been operated on for some fibrosis infection perhaps thirty years before.

Also, another thing is the importance of infection on weak conditions. While I was down in Baltimore, talking to Weed, he told me a remarkable thing. They had found that by taking an animal and injecting it with Friedlander's bacillus they gave it septicopyemia. If they did a lumbar puncture the spinal fluid was clear, but by doing the lumbar puncture they gave it a meningitis. They repeated it over and over again, and in Weed's mind there is no doubt that in certain forms of septicopyemia, if they give him a lumbar puncture, they will give him a meningitis.

The first time the test is clear, but the second time it shows an infection of meningitis. Now, one who is subject to a chronic poison is more apt to have a secondary meningitis. Why should this man suddenly have flared up if he hadn't it? In other words, he would have gotten away with the disease if he hadn't had this chronic infection.

DR. J. R. PAGE asked Dr. Eagleton if the spinal fluid was very straw colored in intracranial complications. He happened to have seen it in a case of a brain abscess, in which

the spinal fluid was like urine. No bacteria could be found on smear or culture.

DR. F. J. BLODGETT: My case is a young lady, 21 years old, who has measles. The third day of the measles her right ear pained her and I incised it. There were no signs of inflammation in the left ear. That was at two o'clock in the afternoon. At nine o'clock the same evening she had pain in the left ear and I incised it the next morning. Her temperature went along well for a day or so, and then it went up to 102, with the onset of bronchitis. It was only a mild sort of bronchitis, and yet the temperature was running from 102 to 103 right along. At the present time, eight days after the attack, general condition is good, temperature 102 to 103, no headache, and yet I am in fear of the development of some serious complication.

DR. I. FRIESNER: I was very much interested in the work that was done in Baltimore. I have tried to correlate that work with some of our clinical findings, and it occurred to me that all of us have seen repeatedly atypical cases of sinus thrombosis in which there has been, for instance, a sustained high temperature with headache, where we were in doubt as to whether we were dealing with a meningitis or not, and where simultaneously we had a blood culture, blood count and a lumbar puncture done. Now, I am sure that not one of you will recall a case in which, despite the fact that a positive blood culture was found, meningitis ensued because of a lumbar puncture.

The work in Baltimore is very interesting. It was done on monkeys, wasn't it?

DR. EAGLETON: No, on a cat.

DR. FRIESNER: Cats are exceedingly prone to meningitis. Clinically, the fact that following lumbar puncture in the presence of a positive blood culture with sinus thrombosis, meningitis has never followed, so far as I know, leads me to doubt very much the value of this work so far as it applies to otology.

I would like to hear from Dr. Eagleton about that, because I feel sure that idea must have occurred to him, too.

DR. EAGLETON: I agree with all Dr. Friesner says. That has been my personal experience, but we have seen sinus

thrombosis, when we did lumbar puncture, that did not develop into meningitis, but then we have seen sinus thrombosis cases, with the Friedlander infection, that did develop into meningitis. While they were doing this work, and after they had already prepared it, a man from one of the camps reported that he had made the same observation in the camp, not among cats, but among humans, and he said that it depends on the infection. If there is an epidemic of Friedlander's bacillus, as far as it is known now, a lumbar puncture results in meningitis. It is not so in the streptococcus septicemia.

DR. A. B. DUEL: It strikes me that Dr. Blodgett's case is a problem. It is a very fortunate thing when such a case happens to be in the institution where the X-rays may be used. If Dr. Blodgett had an X-ray apparatus right next to his patient, he could have a confirmatory report on his suspicions. But I can see perfectly well where a man might hesitate to operate on a case for a few days, without any further symptoms than he has.

DR. W. C. PHILLIPS: As I recall it, Dr. Blodgett stated that there was distinct mastoid tenderness at the tip.

DR. ROBERT LEWIS: I would be inclined to operate.

DR. PHILLIPS: I would venture to predict that any time within the last few days it would have shown disease of the mastoid.

THE CHAIRMAN: The Chair would like to ask if any of the gentlemen have had any experience outside of institutions on the X-ray outfit? I studied it pretty carefully at Oglethorpe. At first we were satisfied with it, but after a while we came to the conclusion that the pictures were misleading and we were not willing to venture an opinion on it.

DR. PHILLIPS: I think we all recognize that radiographs of the sinuses and the mastoid are good ones only when made by experts. I don't know, even in New York City, outside of three places where I could ever expect a good radiographic picture.

THE CHAIRMAN: I am speaking of the portable——

DR. PHILLIPS: I understand, but I doubt if any portable apparatus has been perfected.

DR. ROBERT LEWIS: I saw a case four days ago that has developed some alarming features. He had had a maxillary sin-

usitis a month or so past, and later developed an acute purulent otitis media. The drum membrane was opened three weeks ago. A week or ten days later the perforation was healed. There was no discharge. There was some slight deafness present. Two days before I saw him there developed a swelling underneath the tip of the mastoid process.

I was asked to see the patient and I found that the drum membrane was somewhat thickened. There was a little pink condition around Shrapnell's membrane; he had no mastoid tenderness; but there was this distinct swelling right below the tip of the mastoid process, and there was a general edema of the neck, extending to the median line. He had a temperature of 99° and a fraction. The man had not been well for some three months. The other aurist and myself believed he had a Bezold perforation. The radiograph showed the cells cloudy and the trabeculæ broken down. We operated on the next morning. The incision was extended down lower than usual and opened up this abscess, which did not lead into the mastoid process. The mastoid was opened, the cortex was exceedingly hard and, having penetrated the cortex, we found the underlying cells filled with granulation tissue and pus.

There was no great amount of pus. The bone was very much softened. The cells over the jugular bulb were very soft, as also those in the angle between the middle and posterior fossæ.

The operation was done before twelve o'clock. That night at midnight his temperature rose to 105° F. The next morning he had a cellulitis, extending well down along the anterior border of the sternocleidomastoid muscle; the temperature has remained high. The abscess cavity has been opened and followed down along the border of the muscle and as far as the sternoclavicular notch. I believe we have reached the end of the abscess cavity. He has areas of consolidation of both lungs. The temperature remains high—104° F. and more—the respirations are 48. The man is irrational to a certain extent, I suppose due to the high temperature.

I have never seen a case where the cellulitis developed so rapidly. I do not think the infection extends beneath the muscle, not that it has invaded the common sheath of the great vessels and the pneumogastric nerve. The infection is a strep-

Staphylococcus hemolyticus; the blood culture is negative. The blood count showed over 6,000,000 reds, 81 polymorphonuclear cells and 29,000 white cells. The infection is very marked, much pus, with a very foul looking wound.

The question is whether, if we had not operated, he would have developed a sigmoid sinus thrombosis, as the bone was very soft over the knee and required exposure of the sinus at this point to eliminate the necrotic bone.

The induration the following morning was very marked, very hard and very brawny, more than half way down the anterior border of the sternocleidomastoid muscle.

DR. WELLS P. EAGLETON asked if it might have been gas bacillus infection?

DR. LEWIS: I do not believe so. The wound was very foul inside of less than twenty-four hours. We operated at one o'clock and the next morning at half past seven the edema and swelling was very marked and, when the neck wound was extended further along the anterior border of the sternocleidomastoid muscle, the area was found to be much infected, with much pus present.

DR. McCULLAGH: Was the skin discolored at all in the neck over the wound?

DR. LEWIS: The next morning it was.

DR. McCULLAGH: Was it red or dusky?

DR. LEWIS: Dusky.

Sinus Thrombosis.

DR. A. B. DUEL: In this case which I saw with Dr. Ward the mastoid operation had been performed, and in the course of a week following typical symptoms of septic sinus thrombosis developed, and it was decided to operate. The jugular vein was tied, the sinus was uncovered, and well back behind the knee, Galen's vein was uncovered. It was plugged off, the sinus opened, and a septic clot easily removed without great hammering. There was a very nasty vein wall all the way down, which was cut away and left as open as possible. The temperature dropped immediately to normal, and for nearly a week we felt that the case was recovering, when again typical symptoms of septic sinus thrombosis appeared.

We began put the child under an anesthetic, uncovered the

sinus farther back toward the torcular, found that the vein wall had infected the clot; the clot was subsequently broken down and again delivered through the torcular end. On the second operation the sinus was plugged off probably not more than half an inch from the torcular, and all the clot removed. The temperature then dropped, and apparently the case was cured for nearly another week, when again the symptoms of septic sinus thrombosis appeared.

The third operation, which was considered a very desperate one brought up a grave question as to whether we should simply remove the septic clot and plug off at the torcular, or what could possibly be done to get to an area of the sinus wall which was still healthy? We felt if we used an ordinary plug, and still left a healthy vein wall, that we would possibly encroach on the torcular to the extent that we would produce a clot within the clot. So we decided to uncover the whole torcular so that we could see the outline of it, and try to plug it off without interfering with the circulation coming from the longitudinal sinus and from the other one. The question of how we would possibly do that with the smallest kind of a plug was discussed. So I said, "If we could take the smallest tube and carry it out with a little bulb around the end of that clot and push it down there, we still would have plugged off the torcular without having interfered with the other veins which come into it."

At the suggestion of Dr. Ward, I used the smallest rubber tube, inserted a silver director or probe and cut it off and slipped it under the bone at one end and under the bone at the other end and tied it off. Having removed our septic clot we got the whole thing out. We tried it two or three times; we lifted the thing and let it bleed two or three times, and finally we found we could control it perfectly. We left it there, and were fortunate enough to have the case well again in a short time. It is now about five or six weeks since that happened.

DR. LEWIS: How long did you leave the tube in?

DR. DUEL: It was left there for a week. It was removed under anesthetics; no pain.

As this little narrow rubber tube with the silver probe did it perfectly, I intend, if I do any more sinus cases, to plug

the sinus with a small rubber tube, with a little silver wire in it, or something stiff of that kind, rather than to use gauze.

DR. T. P. BERENS: You mean compressing, not plugging, don't you? You compress your sinus, you stop the bleeding by compressing and not plugging.

DR. DUEL: Yes.

DR. BERENS: Crosswise?

DR. DUEL: Just as you always do, only when you do it you use gauze instead of this tube.

DR. BERENS: Which side was it on?

DR. DUEL: Left.

DR. J. G. DWYER: I saw this case of Dr. Duel's. The interesting part of it was the fact that he kept at it, with the blood picture suggesting sepsis all the way through. The child seemed to be gone day after day, but he had the nerve to go back to the torcular end and finally he just turned the tide. Everybody practically had given the child up.

DR. J. R. PAGE: Dr. Duel may recall my speaking to him of a similar case I had in Norwalk, Conn., which was operated on by me four times, the thrombus reformed four different times until the torcular was reached. I was surprised to hear it was on the left side—they seem usually to occur on the right, which is the larger sinus in about, I think, 70 per cent of cases, as it is a continuation of the larger longitudinal sinus in this percentage of cases, the left being a continuation of the smaller straight sinus.

In this case I got back to the torcular and put an iodoform gauze plug into the lumen of the vein, and I felt much disturbed for fear that I had interfered with the circulation on the opposite side. In looking up the literature, when reporting the case later, I found there had been an interesting discussion by Mr. Balance and Mr. Hugh Jones of the Liverpool Eye and Ear Infirmary on the subject. Mr. Jones maintained that enough attention had not been given to the extension of thrombi to the other side of the torcular—that is, to the danger of the thrombus at the torcular going across and involving the opposite side. Mr. Balance spoke, on the other hand, of the anatomic situation there as a safeguard against this very thing, as the right longitudinal sinus in about 70 per cent of the cases is a continuation of the longitudinal sinus,

and the left a continuation of the straight sinus, with sometimes no communication between the two at all, and usually a communication across the front of the torcular in the shape of a short sinus. The confluence of the sinuses usually described in the textbooks that we had in school is the exception. That is about as exceptional almost as when there is no communication between the two, I believe.

The "sinuum confluens" is almost as exceptional as an entire separation of the two sides. There usually is either a small aperture, or a short sinus across the front of the torcular. I remember distinctly, after removing the clot at the torcular, there was a sudden gush of blood, which was promptly controlled when I stuck my index finger into the lumen of the vein. I could then feel an aperture of communication with the opposite side. Now, whether this was an aperture into the straight sinus, or into the small connecting sinus, I don't know, but I just took a piece of gauze and stuffed it in there, and the patient got well.

DR. CHAS. E. PERKINS: I have dissected this region in a considerable number of cadavers, and I have never seen the large dilatation or confluence of the sinuses, but I never saw a case in which there was not a communication between the two sides. As Dr. Page says, the right sinus is usually a continuation of the superior longitudinal.

DR. ROBERT LEWIS: I had a case, a young girl who had had a tubercular history. She developed a mastoiditis. Shortly after the operation she had chills and all the signs of a sigmoid sinus thrombosis. I removed the internal jugular vein and opened the sinus and found a clot in it. Her temperature, instead of going down as is usually the case, shot up very high. A few days later I reentered the wound and found a clot near the bulb, which I removed. But her temperature still kept up. The temperature remained of a septic type for a good many weeks—from 97 up to 106 degrees F., always preceded by a chill. She developed abscesses of both axillary glands. They were opened.

The blood culture showed 110 colonies in 15 cc. of blood. At the end of two weeks and a half we gave her transfusion of 800 cc. of blood. Her temperature went up immediately after transfusion, and kept up for some little time after that.

A week later we gave her a second transfusion, the temperature came down and she commenced to get well. She is now well and the wounds practically healed.

The history of the case ran over a period of four weeks. She also had some consolidation of the lungs.

THE CHAIRMAN: Do you ascribe the final recovery to the transfusion.

DR. LEWIS: I think so, although the first transfusion was not given until the temperature had fallen a little. And then there was a recurrence of the septic temperature. But following the second transfusion there was a decided change for the better.

DR. WELLS P. EAGLETON: What form of transfusion did you use?

DR. LEWIS: The syringe was used to transfer the blood from the donor to the patient.

THE CHAIRMAN: Dr. Page, have you something that you would like to bring up?

DR. J. R. PAGE: No, Mr. President.

DR. CHAS. E. PERKINS: Speaking of the gas bacillus infection of the mastoid, several years ago I had a patient who I thought at operation had that infection. It was a patient who died of meningitis. He had postauricular edema which had developed during the previous twenty-four hours. There was no crepitation, however, in the edema over the mastoid, but when I incised down to the bone there was a whistling escape of air—that is, an escape of air with a whistling sound. The very careful bacteriologic examination made by Dr. Dixon, both of the discharge from the mastoid wound and also from the brain later, however, failed to show any germs to which he could attribute that formation of gas. I have never been able to explain why that should have formed there, and I thought I would bring that matter up at some time and find out whether it was as unusual an occurrence as it seemed to me at the time.

CHAIRMAN: Have any of the gentlemen had any like experiences?

DR. J. G. DWYER: I have seen two cases of gas bacillus of the ear. One was a case of Dr. Carter's. I was just asking Dr. Perkins whether the typical gas bacillus had been identi-

fied in this case. We believe there are a whole lot of organisms belonging to the gas bacillus classification. There are a whole lot of cases reported of wounds during this war where the gas bacillus set up infection. The majority of these cases died.

Incidentally, the Welch bacillus exists without causing any infection whatever. It only seems that when it gets beyond balance that it causes any trouble. The big question now is somehow to classify them.