XXXVII.

REPORT OF A CASE OF MASTOIDECTOMY FOR ACUTE SUPPURATIVE OTITIS MEDIA, FOL- LOWED LATER BY FACIAL PARALYSIS, ALMOST TOTAL DEAFNESS, MENIN- GITIS AND DEATH.

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In this case, the brief report of which follows, a facial paralysis began to develop three days after a simple mastoid operation, and in two days it was complete. Seven days after the operation there occurred suddenly, with vomiting and tinnitus, but apparently without nystagmus or vertigo, total loss of hearing in the opposite ear, and it was then noticed positively for the first time that there was almost total loss of hearing on the operated side. A high leucocyte count and cloudy cerebrospinal fluid were present, with a mental condition that remained unimpaired almost to the last day.

A delicate boy, ten years old, had a simple mastoid operation performed on his right ear in May, 1916, from which he made a good recovery. He was unusually bright and sensitive, and not robust, though he had improved in health during the past two years. On the twenty-sixth day of January, 1918, eight days after the development of an abscess in his left ear, he was seen by the writer for the first time since the operation two years before. At this examination his temperature was 103 by mouth, and he complained of severe headache. His mastoid was acutely tender, with a profuse characteristic discharge from the middle ear and marked sagging of the posterosuperior canal wall. Immediate operation was advised and consented to.

A thin darkened cortex was removed with a rongeur, and a pneumatic mastoid was found filled with pus, a culture from which showed hemolytic streptococcus. The cells were involved behind and internal to the facial nerve, but no exposure

of the nerve was made. What appeared to be healthy dura was exposed in the region of the attic and antrum, and the sinus was exposed over its vertical limb. The exposed sinus wall on the seventh day after the operation, when the temperature rose to 104, still had no granulations over its lower part and it looked as if infection might be passing through it, but in the next day or two it showed a healthy appearance, and the blood culture was negative.

The patient was comparatively comfortable the day after the operation, though his temperature at 9 a. m. was 103 by rectum. During the next eight days the bedside notes are of interest, showing what may have been an invasion of the meninges along the left facial nerve, with little or no disturbance of the static labyrinth, and the gradual development of a basilar meningitis, which caused total loss of hearing in the opposite ear and death a few days later without impairing the mental condition of the patient until almost the very end.

January 28th, second day after operation. Temperature ranged between 100 and 101. Patient felt nauseated and vomited small amount of clear fluid. Urine showed presence of acetone and diacetic acid. Bicarbonate of soda and ice water was administered by mouth and bicarbonate of soda and glucose by rectum. Vomiting ceased.

January 29th. Temperature ranged from 98.6 to 100.2. Rested comfortably. Full dressing was done under nitrous oxid anesthesia. A slight paresis of the muscles of the left side of the face was noticed. Acetone and diacetic acid was no longer present in the urine. Patient cheerful. No evidence of vertigo or labyrinthine disturbance.

January 30th. Temperature ranged from 99.2 to 101. Fairly comfortable morning. Later complained of headache. Paresis of facial muscles increased. Wound showed considerable purulent discharge. Dakin's solution was instilled in the wound through a tube every two hours. Sat up in bed.

January 31st, fifth day after operation. Secretion in wound less. Dakin's solution discontinued. Temperature ranged between 98.2 and 100.6. Comfortable day. Slight headache at night. Facial paralysis practically complete.

February 1st, sixth day after operation. Temperature ranged from 98.2 to 101.2. Vomited slightly at 8 a. m. and

complained of slight headache. Had fairly comfortable day, however, and retained his nourishment.

February 2d, seventh day after operation. Complained of slight headache during the night. Temperature at 6 a. m. was 102.6. Vomited at 6:30 a. m. Vomited small amount of greenish fluid at 7:30. Up to this time there was apparently no difficulty in hearing. At 9 o'clock he vomited clear fluid. At 10:45 he was visited by me and was found sitting up in bed. As soon as I entered the door he called out in a loud voice, "Good morning, doctor," and shouted that he had a roaring in his right ear and could hear nothing. It was apparent that he could not hear the sound of his own voice. The nurse was asked how long he had been deaf, and she replied that she had only just noticed it, that he had been able to hear her well a short time before. A blood count was taken that morning which showed 42,000 leucocytes and 90 per cent polynuclear neutrophils. Blood culture taken at the same time was negative, urine was normal and eye grounds were normal. Mental condition was bright. Dr. Duel and Dr. Mixsell were in consultation. Lumbar puncture was done by Dr. Dwyer at about 3:30 in the afternoon, when the temperature was 103.8. The cerebrospinal fluid was cloudy, but no bacteria were found on smear or culture. Lactic acid was present and sugar was present. There was pain in the back of his neck and between his shoulders, but there was no marked rigidity or very evident Kernig sign. Headache was intense in the morning, but after lumbar puncture patient slept well and said he felt better and had hardly any headache. The temperature was 104 and pulse 90 at night. Condition was improved except for the high temperature. There was no further record of vomiting until the afternoon of the following day.

February 3d, eighth day after operation. Temperature ranged between 101.2 and 103.8. Pulse from 84 to 104. Blood count, 44,000 leucocytes and 89 per cent polynuclear neutrophils. Eye grounds were examined and found normal. During the dressing the patient remarked that his hearing was much better when the dressing was off the right ear. In the afternoon vomiting and headache returned. At 1:30 a. m. he complained for the first time of feeling dizzy and vomited immediately a small amount of dark fluid. During the night

he asked for some cherries and was allowed several which he retained. There was no apparent change in his mental condition, but in voiding urine he seemed unable to sit up as usual. He slept quietly all night and some of the time turned on his affected side.

February 4th, ninth day after operation. At 6 a. m. his temperature was 103. He retained some orange juice. At 7 a. m. he complained of being hungry and ate a little cereal and milk. At 9 a. m. he had a temperature of 103 and complained of shooting pains in his forehead and later pains in his head and spine between the shoulders. At noon his temperature was 103.8 and he was very thirsty. At 1:30 he vomited a large amount of undigested milk. At 2 p. m. he voided urine in bed. An hour later he became noisy and screamed with pain. He was quite rational. His temperature in the afternoon was 103.6; blood count, 47,600 leucocytes and 88 per cent polynuclear neutrophils. At 6 p. m. he was quiet and rational. Vomited small amount of clear fluid. During the night he vomited several times, complained of intense thirst and was irrational at times.

February 5th, tenth day after operation. Patient had typical meningeal cry. Rational only at times in the morning. Temperature dropped from 104 at 6 a. m. to 100.2 at 3 p. m., and at 6 p. m., two hours before his death, temperature was 104.4.

No autopsy was obtained.

From the second day after the operation until two days before his death the patient frequently sat up in bed and showed no loss of equilibrium. While until the last there remained a slight amount of hearing in the left ear, it was only for very loud sounds, and words could not be distinguished except on one or two occasions when the dressing was off. There was sudden and total loss of hearing in the right ear.

An interesting point to decide is, whether this was a labyrinthine deafness or a retrolabyrinthine nerve deafness. The sudden loss of hearing with roaring tinnitus and vomiting leads one to think first of the labyrinth, but when it is recalled that from first to last the patient was at all times able to sit up without disturbance of equilibrium it seems improbable that any destruction of the labyrinth could have taken place. For while a simultaneous obliteration of both laby-

rinths might occur to cause total deafness without nystagmus, such sudden destruction would necessarily be accompanied by some very evident disturbance of equilibrium.

The conclusion reached is that meningitis was the cause of the persistent vomiting and deafness, and not disturbance of the labyrinth, and that invasion of the meninges very likely took place in this instance along the route of the facial nerve.

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