EMPHYEMA OF FRONTAL, ETHMOIDAL AND SPHENOIDAL CELLS, WITH ABSCESS IN ORBIT, SEROUS MENINGITIS, OPTIC NEURITIS, OTITIS MEDIA. OPERATION. RECOVERY.*

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On Christmas morning of last year, Mr. M. walked into my office, and gave the following history: About two years ago he began to have a nasal catarrh. He was treated in one of the New York Hospitals by cauterizing his inferior turbinate, since which time his nose has been more or less obstructed because of adhesions forming between turbinate and septum. This deformity was removed last summer.

On several occasions he has suffered with severe pain in the head, and especially over the left eye. The discharge from the nose has been thick and slightly offensive in odor, and for the past year his sense of smell has been impaired. The last two weeks he has been laid up in bed with considerable pain in the head and over the left eye. His temperature has been as high as 101°F. The sight of the left eye has rapidly failed, and one week ago the left ear began to discharge, after a painful night.

Examination.—White, male, age 30, married, 5 ft. 6 in., weight 120 lbs. Family history negative. Had the usual diseases of childhood. Never had syphilis or any serious disease. Looked pale and weak, and appeared somewhat apathetic. Examination of left ear showed pus in external auditory canal and large perforation in superior posterior quadrant. Mastoid was not tender and gave him no pain. Examination of pus showed streptococci. Examination of nose showed perforation of septum, which had occurred when the adhesion of the turbinate and septum had been freed. Pus was in the middle meatus and could be easily traced into the hiatus semilunarius as the anterior end of the middle turbinate had been removed last summer. The probe showed disease of the ethmoid and sphenoid cells, and in spite of careful manipulation would pass into the anterior ethmoid cells instead of the frontal sinus. The canula and trocar passed under the inferior turbinate into the antrum with a stream of warm saline solution gave no evidence of antrum disease.

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Transillumination of the antrum and frontal sinus was negative, and I felt sure the frontal sinus was involved from the fact I could not enter it through the frontal duct and from the pain and tenderness over the sinus.

Examination of the left eye showed slight congestion of the conjunctiva, but no paralysis of any of the muscles. The ophthalmoscope revealed a well marked papillitis, and tests showed he was blind in the nasal half of this field.

He was sent to the hospital, and prepared for operation. Temperature 99.6°, Pulse 100.

The following day I made a Killian operation, entering the frontal sinus from below, through the roof of the orbit at its inner angle. The bridge of bone was left *in situ*, and as the sinus was large I had no trouble in working from above as well as below. There was only a small amount of pus in the sinus but the mucous membrane was thick and studded with granulations. The entire mucous membrane was removed and the bone found healthy.

I then attacked the anterior ethmoid cells which were necrotic as were those of the posterior cells. In the region of the posterior cells, the orbital wall was necrotic and a hole about the size of a dime from which pus was oozing, could be distinctly made out. The anterior wall of the sphenoid was likewise necrotic and was removed. In removing the wall of the orbit, and especially in the region of the trochlear, I was materially assisted by the use of Kerrisons' forceps. The orbital fat protruded only slightly into the frontal sinus after the wall was removed, and so far as I could see was of little or no benefit in filling up that cavity.

The wound was stitched through the eye-brow which had been cut off with scissors and not shaved, and although I had been careful to make slight cross-cuts, so as to carefully approximate the parts, I did not find them of advantage and finally abandoned them and stitched the opposing surfaces just as I do in a mastoid wound. The frontal sinus and the roof of the nose were packed with sterile gauze and the ends came out alongside the nasal bone.

I desire to state here that just before I operated, while the patient was on the table, I had a lumbar puncture made and although the spinal fluid was clear, it spurted out, showing it was under pressure. He undoubtedly had a serous meningitis, and in considering the optic neuritis this must not be forgotten as an etiological factor, although I am of the opinion that pus in the orbit made pressure

upon the optic nerve and thus produced blindness of the nasal half of the field.

The notes taken at the time of dressing were as follows:—

Second day after operation.—Patient complains of some pain in the head. Removed dressings. Wound looks well and drains in good condition. Nasal half of retina still blind, otherwise eye looks normal. Movements of eye perfect. I was unable to determine whether or not diplopia existed because of the blindness. Patient can see my hand move when carried to the right side of face, but cannot count fingers. Right lids, both upper and lower were oedematous. Bowels constipated. Ordered 1/6 gr. calomel every hour until 1 gr. had been given. Apenta water in the morning. Pulse 70, mouth temp. 98.4°. (This was the only mouth temperature, all others were rectal.)

Third day after operation.—Wound looks well, Removed packing which appeared all right. Repacked. Right side of face oedematous. Says he does not see well with right eye. Ophthalmoscope shows very slight haziness in optic nerve with vessels somewhat engorged. Pulse 70, temp. 99.6°.

Fourth day after operation:—Removed drain from ear. Discharge somewhat diminished. Washed nose with saline solution. Pulse 78, temp. 99°.

Fifth day after operation.—Dressed wound. Removed five stitches from eyebrow; wound healed. Drains only slightly soiled. Repacked. Removed drain from ear and repacked. Pulse 76, temp. 99°.

Sixth day after operation.—Removed drain from ear. Pulse 76, temp. 99.

Seventh day after operation.—Removed packing which was considerably soiled and some of the pus had gotten into the eye and set up a conjunctivitis. A 1% sol. silver nitrate was applied to conjunctiva. Ear drain removed, which was only slightly soiled. Ophthalmoscope showed right eye clear; left disc about same as it had been. Pulse 80, temp. 99.6°. At this juncture I had determined to make subconjunctival injection of saline solution to see if I could hasten the absorption of the inflammatory products within the eye, but owing to the existing conjunctivitis, I was deterred from this procedure, and as subsequent results show, it would have been entirely unnecessary, and no doubt would have falsely strengthened my belief in such treatment. I then determined to close the external wound and pack through the nose.

I will not weary you with a further recital of each day's progress, Suffice it to say that the membrana tympani healed on the ninth day. He left the hospital on the seventeenth day after operation, and was able to count my fingers with his left eye at two feet.

On January 28th I ceased to pack his nose; there was very little discharge. The external wound had long since healed and the deformity was nil; the eyebrow having grown out sufficiently to cover the scar, and only a red line could be seen on the side of the nose. His vision in the right eye was 20/20 or normal, and in the left eye 20/50+ or 3 lines above normal. There was no diplopia. He had gained twelve pounds in flesh and felt well.

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Lumbar Puncture in Localized Meningitis.—FRITZ GROSSMANN—
Arch. f. Ohrenh., Leipzig, December, 1904.

The author reports three cases in which meningeal symptoms were pronounced. In the first case, the fluid obtained by lumbar puncture contained pus cells and diplococci. The patient recovered. In the second case an acute infection had taken place in an ear which had been suppurating for a long time. The meningeal symptoms were well marked, but the cerebro-spinal fluid contained pus cells, but no bacteria. After operation the symptoms become worse, but the fluid from a second puncture showed no change. The autopsy showed that the patient died of sepsis, there being no sign of meningitis.

In the third case, a perforation of the dura was found at the time of operation. No lumbar puncture was performed.

YANKAUER.