

A CEREBRAL COMPLICATION OF ACUTE MASTOIDITIS WITH VERY SUDDEN UNUSUAL SYMPTOMS.

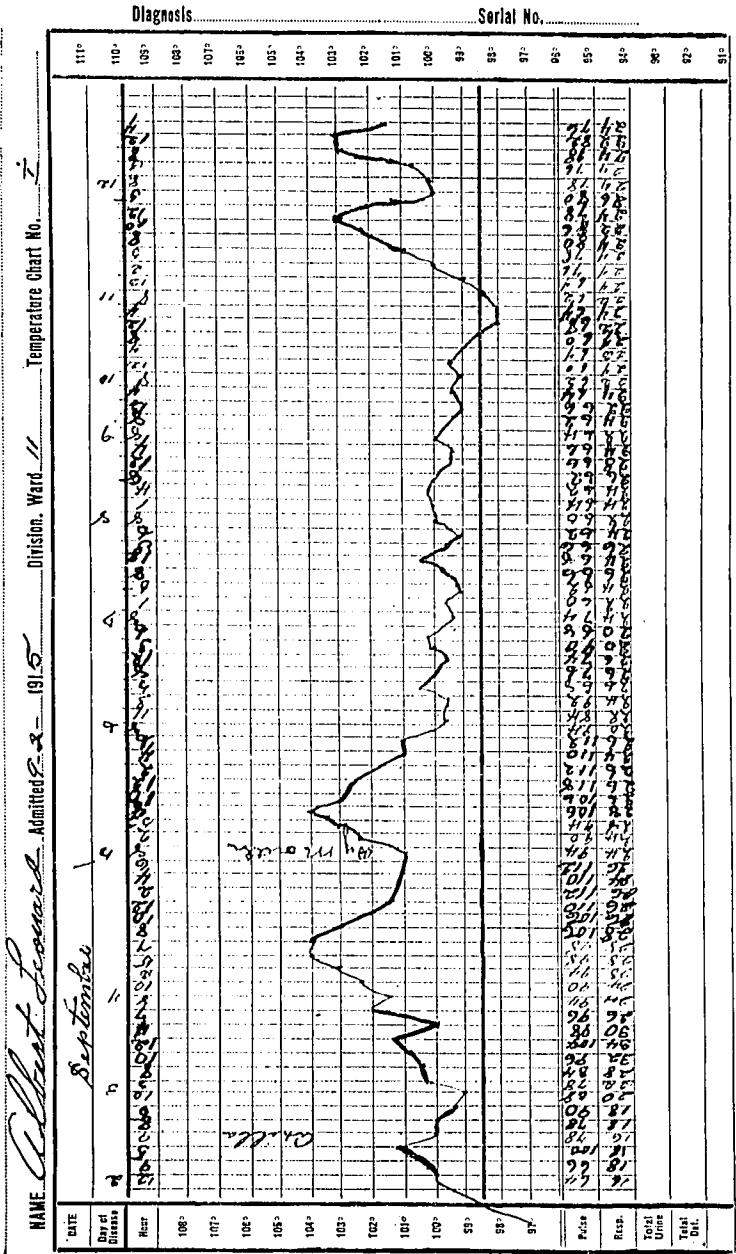
DR. W. T. PATTON, New Orleans, La.

The writer does not in this paper wish to give the impression that he considers cerebral complications rare in mastoid involvement; in fact, they are rather common. However, it has been impossible to find any record of a case developing so suddenly and with such severe onset as the one to be reported. In looking over records in the Charity Hospital of Louisiana I was able to find in the past seven years, records of seven cerebral abscesses from various causes; all the patients died either before or after operation. Two other cases I saw in other hospitals of the city; both died. Dr. J. W. Murphy,¹ of Cincinnati, reported five cases seen by himself in one year, all following suppurating ears. In all of these cases the abscess was found either at operation or post-mortem. This is certainly a large number of cases for one man to see in such a short time when we consider that the records in the large Charity Hospital show only seven cases recognized in the past seven years. In speaking to a number of surgeons and otologists very few have seen more than one case of cerebral abscess and a number of the busy surgeons have never seen a case.

The portion of the brain most likely to be involved from middle ear infection, depends often upon the manner in which the infection gains entrance. When it occurs by direct continuity, the temporo-sphenoidal lobe is most often the seat of abscess. When the extension is through the labyrinth the abscess is most often on the anterior aspect of the cerebellum. Since abscess of the brain of otitic origin is a secondary and not a primary disease, the problem of diagnosis is often masked by the primary disease or some of its complications. Quite a large extradural abscess may be present with little or no symptoms. A cerebral abscess of otitic origin, being an acute infection, the time is generally too short for the pathognomonic eye symptoms to develop, as in the case of tumors of the brain. Hence, the absence of optic neuritis does not exclude cerebral abscess.

It will hardly be necessary to mention here the symptoms of brain abscess, as the normal or subnormal temperature, slow pulse, slow respiration, slow cerebration and want of sustained attention, mental

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obscuration, and tendency to doze, are too well known to all. Often, however, we may have abscess with very few of the above symptoms, and these are the cases that give us most trouble.

When the abscess is in the cerebellum, the respirations are much slower than when in the temporo-sphenoidal lobe, are more apt to be irregular and of the Cheyne-Stokes character.

As to the treatment, once a diagnosis is made the only treatment is incision, and the sooner the better. As to the method of incising there is some difference of opinion. Some men use a long cataract knife claiming that because of its thinness there is a minimum amount of trauma and because of its sharpness it readily pierces a tough capsule. Others use a blunt grooved director. Should there be a sinus showing pus, the encephaloscope is very useful. Once the abscess cavity is reached, it can be more freely opened by means of a fine artery forceps. Then some form of drainage tube or silk worm gut is put in. One should be very careful in irrigating the abscess cavity. The author prefers not to irrigate.

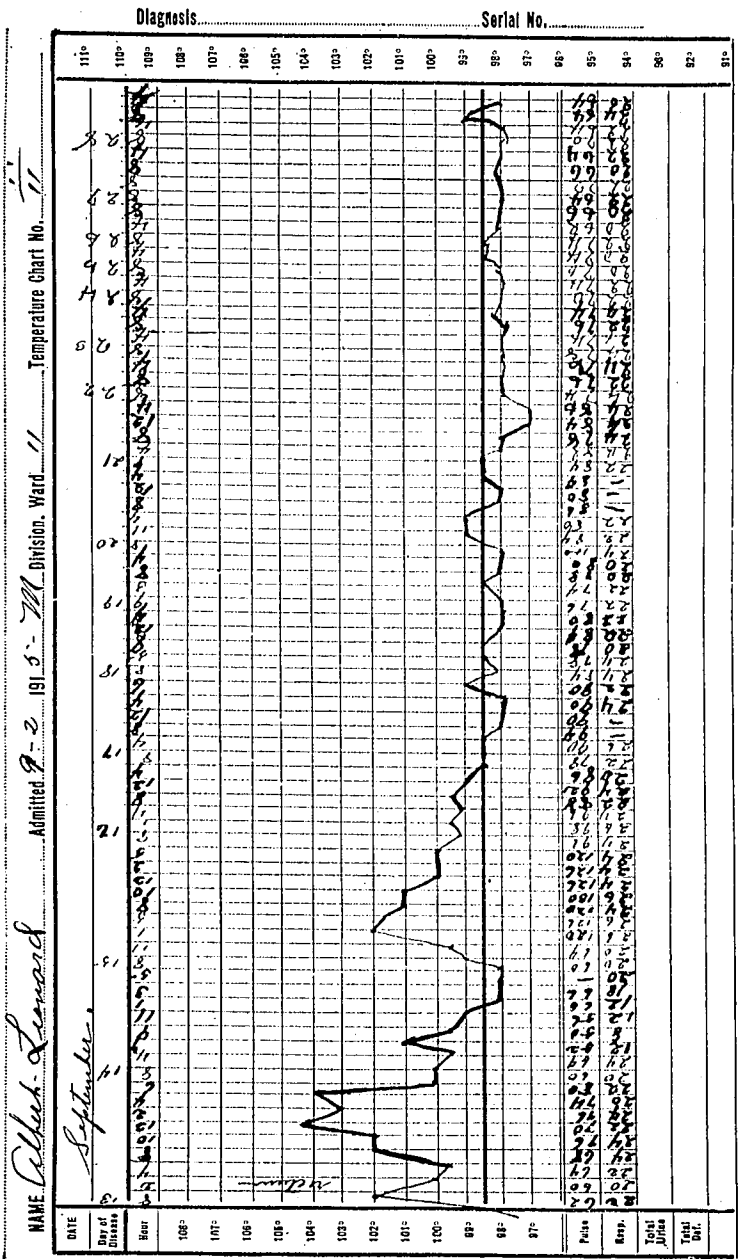
The case I am about to report seems unusual both in method of onset and recovery. I hope some one with more experience will clear up several points which are still obscure.

Albert Leonard, white, married, age 28, was admitted to the surgical service of the Charity Hospital, New Orleans, September 2, 1915, with the following history:

Family history: Negative.

Past history: Smokes moderately, does not drink, never was sick before, with exception of "chills and fever;" denies all venereal history. Married eight years and has three healthy children. Occupation, farmer.

Present illness: On the morning of September 1, about 7 o'clock, while driving the cows, he was suddenly attacked with a violent pain in his right ear; this continued all day. Patient used a hot water bottle to his ear and hot sweet oil in the ear with no relief. The same night about 7 o'clock, the ear began to discharge and the pain became much less severe. The patient was quite restless and drowsy. About 10 p. m., his wife states that his left hand and arm began to "jump," then the leg on the same side became similarly involved, and before morning there was paralysis of the entire left side. Pain still continued over the right side of the head. The patient was brought to New Orleans September 2, and admitted to the surgical ward of the Charity Hospital. I was first called to see the case on September 3, about 4 p. m. On examination I found the patient very drowsy, answering questions very poorly and



slowly. The right ear canal was full of sero-sanguineous fluid. Tympanic membrane bulging; posterior superior canal wall sagging. Only slight tenderness over mastoid; no edema. Entire left side paralyzed, with occasional twitching of muscles. The right pupil was dilated, not reacting to light and the eye was turned out; at this time the eye grounds were only slightly congested. Nose, throat and left ear normal; temperature 100°, pulse 78.

A diagnosis of brain abscess was made and operation advised. A neurologist examined the case and agreed with the diagnosis.

Blood count, September 3: *White cells*, 22,590; *lymphocytes*, 10; *neutrophiles*, 90; *Wassermann*, negative. Smear from the ear showed staphylococcus aureus, also a gram negative and a gram positive bacilli. The case was then transferred to my service. Mastoidectomy was performed on the morning of September 3. A very small amount of pus was found in the aditus; no necrosis. Dura or sinus not exposed. As the mastoid involvement did not account for the symptoms, the incision was extended up and the skull trephined one and one-half inches above and one-half inch posterior to the external auditory canal. A piece of bone the size of a silver dollar was removed. The dura seemed healthy; no apparent bulging and no pulsation. I incised and explored the brain in three directions with a cataract knife to a depth of about one and one-fourth inches, but found nothing. The wound was closed and the patient returned to the ward.

September 4: Patient much improved. Paralysis almost entirely gone, mind seemed clear and bright and patient stated that he felt fine.

September 6: White count, 18,000. Patient continued to do nicely. Temperature, 100; pulse, 76.

September 9: White count, 28,300. Patient passed a bad night. Respiration very bad according to nurse (Cheyne-Stokes breathing). Paralysis again of the entire left side. Patient unconscious and in very serious condition. Temperature, 99; pulse, 66. Again taken to the operating room, more bone removed, higher up and lower down, and brain explored in six different directions, through two incisions in the dura. No pus found. I was afraid to attempt any more cutting of the brain. It seemed useless.

September 10: To my surprise I found the patient again greatly improved; paralysis less but not entirely gone. White count, 22,280. Temperature, 99; pulse, 64.

September 12: Wound clean, patient continued to improve. White count, 20,800. Temperature, 100; pulse, 78.

NAME <u>W. Leonard</u>		Admitted <u>7-2</u>	Division, Ward <u>11</u>	Temperature Chart No. <u>111</u>	Diagnosis	Serial No.															
DATE	111°	110°	109°	108°	107°	106°	105°	104°	103°	102°	101°	100°	99°	98°	97°	96°	95°	94°	93°	92°	91°
Day of Disease																					
Hour																					
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97°																					
Pulse																					
Resp.																					
Total Urine																					
Total Cal.																					

September 23: Paralysis less. White count, 11,900. Up to this time the wound was clean. I now noticed considerable pus coming from the opening in the dura. It will not be necessary to give further history, except to say that the patient continued to improve, the blood count gradually going down to 6,000; temperature, normal; pulse, 80.

November 1: There appeared three small cerebral hernias though the line of incision, corresponding to the three incisions in the dura. I was able to get rid of part of the hernia. However, one the size of a hen's egg, persisted.

November 26: Under local anesthesia, I succeeded in transplanting a piece of fascia lata, stitching it to the dura, then closing the skin incision. The wound healed by first intention. The patient left the hospital on January 3, able to walk and use his arm very well. I am sure he will eventually get entire use of the left side.

BLOOD COUNTS.

	Sept. 3	Sept. 6	Sept. 9	Sept. 10	Sept. 12	Sept. 15
White	22,590.	18,000.	28,300.	22,280.	20,500.	16,300
Small lymphocytes	10.	8.	8.	9.	1.	3.
Neutrophiles	90.	86.	91.	88.	87.	85.
Large lymphocytes		5.	1.	2.	11.	12.
Eosonophiles		1.		1.	0.	0.
Basophiles					0.	0.
	Sept. 16	Sept. 17	Sept. 18	Sept. 23	Oct. 27	
White	18,050.	13,000.	19,700.	11,900.	12,552	
Small lymphocytes	1.	5.	1.	4.		
Neutrophiles	83.	79.	84.	70.	74.	
Large Lymphocytes	0.	16.	15.	26.	26.	
Eosonophiles	0.	0.	0.	0.		
Basophiles	0.	0.	0.	0.		

Urine September 18. Few hyaline casts.

Culture from mastoid and external ear canal September 10, 1915; staphylococcus aureus and few gram positive and negative bacilli.

Conclusions: 1. Note the suddenness of onset. I was particularly careful and could find positively no history of previous trouble in either ear. Patient and wife both stated positively that he had never had any previous trouble with his ears.

2. The amount of cutting from which the brain will recover.

3. In what way if not by abscess can we account for the symptoms? No pus was ever found.

4. Remember that the wound was clean for several weeks after the last operation, then suddenly it began to discharge pus. Could the abscess have worked its way out through one of the incisions?

In concluding I should like to than my internes, Dr. Gerster and Dr. Zengel, for their help in making blood counts and other examinations.

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