

IV.

A CASE OF THROMBOSIS OF THE POSTERIOR CEREBRAL VEINS AND ARTERY, ENCEPHALITIS, PURULENT LEPTOMENINGITIS, LATERAL SINUS PHLEBITIS AND PARIETAL THROMBOSIS FOLLOWING MASTOIDITIS.

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A well-nourished woman 50 years of age was seen by the writer in consultation at the Manhattan State Hospital. She had a history of having had grippe more than four weeks previously, since which her mind had become unbalanced. The physical condition of the patient had been of negative interest except for diminished thoracic expansion, up to the day her temperature began to rise without any apparent cause. Three days previous to the rise of temperature her physical examination was negative. Her ears showed nothing abnormal.

On the fourth day after the commencement of the rise of temperature, rales and scattered patches of exaggerated breathing were noted at both bases behind. The right ear began to discharge thin pus. On the sixth day of the illness, the patient appeared very sick. Discharge from right ear continued. Some tenderness behind ear and indefinite earache. Lungs—dullness, rales, and exaggerated respiratory sounds over lower half of both lungs behind. Heart sounds very weak. On the seventh day the patient appeared better. Discharge from the right ear had ceased. No mastoid tenderness and little aural discomfort. Lungs slightly improved. Hemoglobin, 70 per cent. Leucocytes, 22,000. Ear irrigation continued.

On the eighth day the author did a complete mastoid operation for acute mastoiditis. Free myringotomy. The mastoid was opened in the usual way by first removing the tip, which appeared perfectly normal. The mastoid was very cellular, especially inferiorly and posteriorly, where the cells were filled with granulations, and there was free bleeding. Only two minims of pus were found which was located over the region

of the lateral sinus far back. The bone covering the sinus appeared healthy. The sinus was not exposed. The dura mater of the middle fossa was exposed through the tegmen antri posteriorly. It was very slightly congested and had slightly increased tension. The wound was washed and closed over a small drain. Iodoform gauze was put into the canal and a wet saline dressing outside. Time consumed, 35 minutes. Took anesthetic well. Returned to bed in fair condition. Examination of the pus from the cells showed large diplococci. Bacterial examination of the blood was negative.

The ninth day of the illness or first day after operation: Radial pulse very weak. Lungs apparently unaffected by the anesthetic. Leucocyte count, 20,600. Second day: Examination. Pupils small, regular and active. No stiffness of neck, Knee-jerk slight on right, absent on left. Achilles reflex present on left, absent on right. Some tendency to Babinski sign in left great toe. Spinal puncture, 5 cc. slow flowing, clear fluid withdrawn; no blood. Microscopic examination showed encapsulated diplococci similar to those found in the mastoid pus, staphylococci and a few bacilli and blood cells. No polynuclear leucocytes. Examination of the blood culture negative. Heart regular and rapid. Lungs unchanged. Patient dull, restless, no pain. No motor symptoms observable. Patient gradually became weaker, lungs more edematous. Radial pulse entirely lost. Temperature ranging from 105° to 106° followed by death on the eleventh day of illness and the third day after operation.

AUTOPSY BY DR. GLANVILLE Y. RUSK.

"Remains of a moderately well-nourished female. Pupils, circular, equal, moderately dilated. The amount of cerebro-spinal fluid moderately increased. Over the right convexity, the subdural space shows a puriform cerebro-spinal fluid and the convexity, especially along the Sylvian fissure, is covered with a somewhat granular fibrino-purulent exudate; the exudate is for the most part in the meshes of the pia-arachnoid or strips off with it, except near the anterior end of the temporal fossa, where for an area about 3x5 cm. the exudate is closely adherent to the dura. The veins over the right hemisphere are more prominent than over the left, the large veins over the temporal lobe and along the Sylvian fissure being the most marked. On opening the lateral sinus, it is found to contain an adherent

thrombus, starting anteriorly at the junction of the superior petrosal sinus with the lateral sinus and extending backward about 5 cm. along the superior and outer wall of the lateral sinus. A thrombotic plug is also present at the mouth of the jugular foramen. The point of most adherent pus formation to the dura lies about an area approximately 5 mm. in diameter, where the overlying bone has been removed during operation, and which is situated about 2 cm. above and slightly behind the auditory meatus. Smears from the intracranial pus show streptococci in short chains. Sections from the cortex show typical leptomeningitis with occasional streptococci, the inflammatory process not invading the brain substance. Unusually good examples of phagocytosis are present. The large nerve cells show examples of acute alterations of moderate grade."

Mastoid wound in good condition, clean and healing by first intention. The parietal thrombus of the lateral sinus covers and enters the mouths of the posterior cerebral veins. Thrombosis of right posterior cerebral veins and artery. Thrombus of jugular foramen appears to be more recent than the parietal thrombus of the lateral sinus. The meninges of the cerebellum and left hemisphere, normal. Ventricles, normal. Lungs filled with fluid. Death due to mastoiditis and pulmonary edema.

Capitulation.—The author was unable to find any references in literature to a similar extension of infection from the mastoid cells. The case seems to be unique in this respect that the infection from the mastoid crossed the lateral sinus without encroaching upon its lumen to any extent, entered the posterior cerebral veins and caused a fatal leptomeningitis which was out of all proportion to the comparatively slight mastoid involvement which was obscured by the concomitant pulmonary signs.

An interesting point shown at autopsy was the presence of two separate and distinct thrombi of different age, on the same side; one, of the lateral sinus; the other, of the jugular foramen.

The differential diagnosis between the complicated mastoid affection and lung affection was aided by the lack of parallelism of the respiration, pulse, and temperature curves and by the improvement in the condition of the lungs independent of the amelioration of the septic condition. In this case there was no macroscopic connection between the mastoid infection and the meningitis.

The temperature curve was not characteristic of sinus thrombosis since the rises were maintained for a time, blunting the characteristic saw-teeth. After the mastoid operation the question of jugular ligature was not raised because the temperature curve did not indicate thrombosis. The character of the old thrombus found at autopsy was not the kind likely to give rise to a characteristic temperature curve. The question of other intracranial explorations was considered and was decided against because of extreme weakness of the circulation. The autopsy showed the certain futility of any such procedure owing to the extensive leptomeningitis.

The history has been compiled from the hospital record kindly furnished by Dr. William Mabon, from the pathologic notes contributed by Dr. Glanville Y. Rusk, and from the author's own clinical and autopsy notes.