VII.

TUBERCULAR MASTOIDITIS—RADICAL OPERATION UNDER COCAIN ANESTHESIA.*

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About two years ago, Mr. S., aged twenty-four years, came to consult me about his deafness and sharp pain in the right ear. His history showed that he had had a tuberculosis of the lungs which at that time was in a quiescent state. He had had a radical mastoid operation performed on the left ear and mastoid four years before. This had never healed properly, with the result that there was a large opening into the dura which was constantly suppurating.

Examination of the right ear showed granulations in the middle ear, entire destruction of drum, and the discharge of cheesy-like pus. Culture from this ear and from the sinus behind the left ear showed numerous tubercle bacilli. He could hear neither watch nor tuning fork at either ear.

During that first winter I had him under observation two or three times a week, during which time I attempted every known means of clearing up the condition.

As he did not improve, I advised a radical mastoid operation.

The question of anesthesia was an important one. Here was a patient with a quiescent tuberculous process in his lungs, a patient whose general physical condition was far below par. Ether anesthesia per oram would possibly light up his lung condition, so I determined to operate upon him under local anesthesia.

On the day of the operation at ten o'clock in the morning he was given a hypodermic injection of morphin grain one-fourth, atropin grain one-one-hundredth. Two hours later a

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second injection of like amount was given. At two o'clock he was brought to the operating room. As there were no signs of opium poisoning, another injection of morphin grain one-eighth was given. The operative field was prepared in the usual manner. A solution of equal parts of ten per cent cocain with equal parts of adrenalin having been prepared, an injection of this solution along the line of the proposed incision was made, going well into the surrounding tissues, forward to the lobe of the ear, upward to the zygoma, and backward to the occipital bone. An attempt was made to have the injections reach down to the periosteum. This is not a difficult matter in this region, as the tissues are not very thick.

The semilunar incision was made throughout its whole extent down to the periosteum. A longer needle was attached to the hypodermic syringe and an injection made under the periosteum of a one-half of one per cent cocain solution with equal parts of adrenalin (Shleich infiltration). Two to three drams of this solution were injected, care being taken that some of it reached the periosteum below the tip and anterior to the bony canal. It was spread through the tissues posteriorly and above until an area of at least three to four square inches was infiltrated.

The periosteum was then incised and scraped back with a rasp and the retractors were inserted.

After the bone was well exposed the mastoid cavity was uncapped with a chisel. The patient complained of no pain at any time while I was working in the mastoid cavity. The operation was a Schwartze-Stacke. The cavity was extremely large, the bone extremely hard, the tip entirely destroyed so that it had to be removed in its entirety. When the patient was asked to describe his sensations, he stated that he felt no pain, only the apprehension of pain, similar to what he would feel in the dentist's chair. We are wont to feel that in the mastoid operation under ether anesthesia, the constant chiseling and using of rongeurs produces a slight concussion of the brain, which accounts for the lessened amount of ether we have to give. After this experience I am inclined to think that this idea of ours is visionary. The constant pounding of the bone produced no marked change in the patient's mastoid condition. In fact, he did not seem to mind it at all.

The mastoid cavity was thoroughly cleaned out without any trouble. The bony canal wall and the bridge over the antrum were taken down without any pain. However, when the sensitive mucous membrane of the middle ear was reached, trouble commenced. It had been impossible thus far to cocaine this membrane. Here was a mass of sensitive granulation tissue. In order to overcome this sensitiveness a four per cent cocaine solution was injected along the posterior canal wall, into the granulations themselves and deep down into the eustachian tube. Not all sensitiveness could be overcome, but enough to proceed with the operation with little trouble. The mass of granulations were removed with a curette until I came to a thicker tougher mass, apparently attached to the internal wall of the middle ear. I hesitated to remove this, as I realized that the facial nerve was either in it or close by. But the mass was infected and had to be removed. I grasped it with forceps and snipped it off with a small scissors. At once the patient exclaimed: "Doctor, you must have hit my facial nerve. The right side of my face is paralyzed." Such was the fact.

The eustachian tube was curetted and a skin flap for a new canal made without any trouble. The making of the skin flap was facilitated by the lack of bleeding, due to the blocking off of the vessels by the cocaine solution. When one realizes how much bleeding there usually is, he can appreciate of how much value this ischemia was. After making the artificial canal the posterior wound was closed with tendon sutures.

Three hours after the operation the patient sat up in bed to eat his supper. Having had a radical mastoid operation performed on the other side under ether anesthesia, he was in a position to make comparisons. He was most enthusiastically in favor of local anesthesia. Not only had the general reaction been severe at the time of the former operation, but his wound pained him a great deal. In this instance the pain was practically nil. At the end of the week he left the hospital with his wound in excellent condition. The facial paralysis began to improve, so apparently the nerve was not completely severed.

A few months ago I lost track of the patient. I had hoped to present him at this meeting. But I received a letter a short time ago stating that he had died at Bellevue Hospital during

the summer from a tubercular meningitis. Autopsy showed a direct extension of tuberculosis from the suppurating cavity behind the left ear to the dura.

The practical points to be deduced from this case are the following:

1. That the radical mastoid operation can be done under local anesthesia without any pain.
2. That the superficial scalp tissues and periosteum are sensitive, but that bone has absolutely no sensation.
3. That the mucosa of the middle ear is extremely sensitive and must be separately cocaineized.
4. That irritation or destruction of the facial nerve is immediately noticeable to the patient.
5. That the after-effects are practically nil.
6. That the end result is just as good under local as general anesthesia.