DOUBLE MASTOID OPERATION—ACUTE THYRO- RENAL EXHAUSTION.*

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Mortimer B., about 9 months old, was admitted to the Manhattan Eye, Ear, Nose and Throat Hospital, late in May, 1918, having for two months suffered from sore throat and recurrent furunculosis of his auditory canal, going from one physician to another for treatment. Examination revealed a retro-pharyngeal abscess, which was incised, and he was kept in the hospital for irrigations.

On June 17, 1918, he was again treated in the office, this time for a recurrence of the furuncle in the auditory canal.

In May, 1919, he underwent a tonsil and adenoid operation in a Boston hospital; but the adenoids were incompletely removed and he remained a mouth breather.

On January 31, 1920, at which time he was 2½ years old, he was again brought to the writer, suffering with a running nose and a right otitis media. The drum was incised under ethyl chloride.

On February 3, he developed a left otitis media, and that drum was incised. He also underwent myringotomies nine days later, on February 12 and 16.

On February 19, the remainder of the adenoids was removed, with a post-nasal polyp.

From January 31 on, he was seen every other day, the ears being cleansed, dried, and inspected. On every attempt to dry the ears he fought violently, thrashing about with all his might, although the manipulations were as gently done as possible. As a result of all this treatment, he became thoroughly afraid of me. These many infections show a patient below par in so far as his resistance is concerned, and as a result one with ample reason to be afraid of a doctor.

In spite of all efforts, both ears went on to a mastoid infection, and a double mastoid operation was performed on February 27, the patient being in the hospital thirteen days—the strange surroundings, the absence from home, the suffering and the nurses all contributing their quota in adding to his fright. When I entered his room in the hospital, especially at night, his pupils dilated, the pal-

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pebral fissure widened, his face flushed about the cheeks and malar bones while he became deadly pale about the mouth, and he screamed continuously: No more doctor! No more doctor, a picture of abject extreme fright.

The wound was slow in healing, and about the eleventh day it became evident that it was not doing well. From that time on the child went rapidly to pieces, so far as the condition of the wound and his mentality was concerned. On the fifteenth day after operation the edges of the wound were everted and angry looking, and it was breaking down along the entire length of the original incision, and the external auditory canal was pouring out pus. Smears from the wound showed a short chain streptococcus, the same infection that had been present before operation. The physical and mental condition of the patient were on a par with the state of the wound; his muscles were weak, he had difficulty in balancing himself, even more than his weakness would account for. It was impossible to elicit any facial expression from him. He cried, but without facial or vocal expression of pain. *When placed on the floor, after completing a dressing, he planted his feet far apart, seemed to take no interest in anything, and with a vacant stare and the head falling forward would allow the thick mucous saliva to drool from his mouth. At home he remained continuously in bed or on his mother's lap, moaned "Ah, Baby!" or screamed, "No more Doctor!" and took no interest in anything.

About this time, on the theory that the patient was suffering from thyroid exhaustion, he was given syrup of the iodide of iron medication, to supply some immediately available iodine to the thyroid gland, and a few days later was sent to Dr. M. G. Pease for examination with a suggestion as to the diagnosis of acute thyroid exhaustion. Agreeing as to the probable cause of the breakdown, Dr. Pease placed the boy on one-tenth grain of dried thyroid gland substance three times a day.

Two days after the thyroid medication, nineteen days after operation, both the wound and the mentality of the child began to show slight improvement.

There was a slow, continued improvement after this until March 28, when it became necessary to send the child to a colleague for dressing. In making this change, the thyroid gland substance was inadvertently discontinued, and the improvement in the patient's condition also stopped. From March 28 to April 16, this colleague made every possible effort to induce healing, but with practically a total failure. He was compelled to believe that he was dealing

with a badly performed operation in which all the necrotic bone had not been removed from the mastoid. When returned to me on April 18, the patient had rather more discharge from the operative wounds and from the auditory canals than when I had last seen him and the granulations were more unhealthy. At this time the operative wounds opened directly into the attic, there was still bone on both sides uncovered with granulations, the clip abscesses on the right had scabbed over but did not look healthy, and on the left side they were still open ulcers.

I immediately began to attempt to destroy the unhealthy granulations and to induce healthy granulations over the exposed bone, using silver nitrate and tincture of iodine, *e'c.*, but with only partial success. I also prescribed the syrup of the iodide of iron as a tonic, as this had been discontinued. This treatment was kept up until April 30, with slow improvement in the wounds, mainly that they were cleaner. During this time the mother directed my attention to the presence of Sargents' adrenal white line—in this instance produced by the baby rubbing his face with his hand. On April 30, I prescribed Harrower's adenospermin compound, containing thyroid substance gr. 1/12; adrenal substance gr. 1/4; spermin gr. 1, as an adjuvant to the adrenal substance and brain substance for its organic lecithin—one capsule four times a day. At this time both ears were discharging pus from the auditory canal and the operative wounds; small operative wounds reaching the attic on both sides; bare bone at the bottom of both operative wounds just posterior to the attic where the antra had been opened. About three-fourth of an inch above the operative wound on the left side was an ulcer three-eighths of an inch in diameter, where the original incision had been broken down. On the right side there had been a similar breaking down and ulceration; this had been scabbed over, but the healing had stopped there and the scab had not been cast.

In addition to the ear trouble the child had when first seen in January a running nose. This had persisted and had gradually become worse during all the time he was under treatment, at times assuming the form of a membranous rhinitis. It was at all times so severe and resistant to treatment as to suggest an indolent ethmoiditis. This condition had not perceptibly improved when he was placed on the thyro-adrenal combination.

On May 2, the left ear was dry, but there was still a severe discharge from the operative wound. (From this date on as long as packing was required in the external wounds, all the dressings

were made by filling the wounds with mercurochrome and packing gauze into the solution. The drops were also used in the external canals.)

May 4. Left ear still dry; operative wound closed; some pus and considerable granulations in it when forced open. Less discharge from right ear; operative wound cleaner. Mentality and general health improving.

May 10. Still some pus in operative wound of left ear when forced open; open ulcer above operative wound of left ear has a good healthy scab. Purulent rhinitis is improving.

May 12. Left operative wound not disturbed; cannot find bare bone at bottom of right wound, and only slight discharge from wound and canal. Nasal condition improved; patient breathes through nose part of time. Patient very lively, mentally and physically; is all over the house; helped arrange layout for dressing and insisted on bossing the work of dressing the wound.

On May 14 the packing of the right external wound was discontinued. There was a slight discharge. On August 5 a small fragment of bone was removed from the fundus of the right auditory canal, which had been acting as a foreign body and keeping up the discharge. From this time on the case was treated as one of chronic otitis media until it became dry and remained so early in October.

It is a well established fact that extreme fright, severe fatigue, and strong emotion have a profound effect on the thyroid and suprarenal glands and the central nervous system; and that this disorganizing effect if long continued will lead to functional exhaustion; and the ill effects consequent upon the absence of the important secretions of these glands needs no argument. This being granted, it remains only to point out why it seems evident that this patient was suffering from exhaustion of the thyro-adrenal apparatus and to demonstrate that the final cure was due to the thyro-adrenal preparation. It seems evident that some new factor entered the case on April 30 or May 2 that initiated the physical and mental improvement. On April 30, the thyro-adrenal preparation; on May 2 the use of murcurochrome-220 in dressing the wound was started. That the healing was due to the thyro-adrenal preparation rather than to the murcurochrome-220, with a slight absorption of mercury, seems to be proved by the following facts:

The mental deterioration and the muscular weakness, with the difficulty experienced by the patient in balancing himself and supporting his head on the shoulders is of the type to be expected in

severe thyroid deficiency; this will practically always be accompanied by the supranal involvement. The Sargent's white adrenal line exhibited by the patient, if not pathognomonic of a high grade of adrenal insufficiency, is strongly suggestive of it.

At two different times the patient was started toward improvement by measures directed to his internal secretions—once with a thyroid and the second time with a thyro-adrenal preparation, the latter showing the more phenomenal results.

The improvement in the mental and physical condition of the patient was more marked than the improvement of the wound, and even antedated it. This was too rapid to be due to the small amount of mercury that might have been absorbed.

Some profound systemic alterant must have been responsible for the rapid improvement and cure of a purulent rhinitis that existed from January 1 to May 1, which resisted every form of treatment to which it was subjected, at times becoming membranous in spite of the treatment. This could hardly have been due to the absorption of mercury in the murcurochrome-220, but must be placed to the credit of the endocrines administered.

REPORT OF A CASE OF FACIAL PARALYSIS.

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While facial paralysis in children is frequently mentioned in literature as a complication of mastoiditis and especially following mastoidectomy from injury to the nerve during operation, the following case seemed to me to present points of interest sufficient to warrant reporting.

W. M., male, aged 21 months, had been on a long auto ride in an open car (his head, however, was well protected from cold) the day preceding the onset of symptoms.

The next night he was restless and crying, apparently with a hard cold. Temperature 102°. The following morning left ear began discharging, temperature dropped to normal, pain and restlessness subsiding. The following day, ear discharging freely, no pain, temperature normal and mother noticed slight facial asym-