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BY

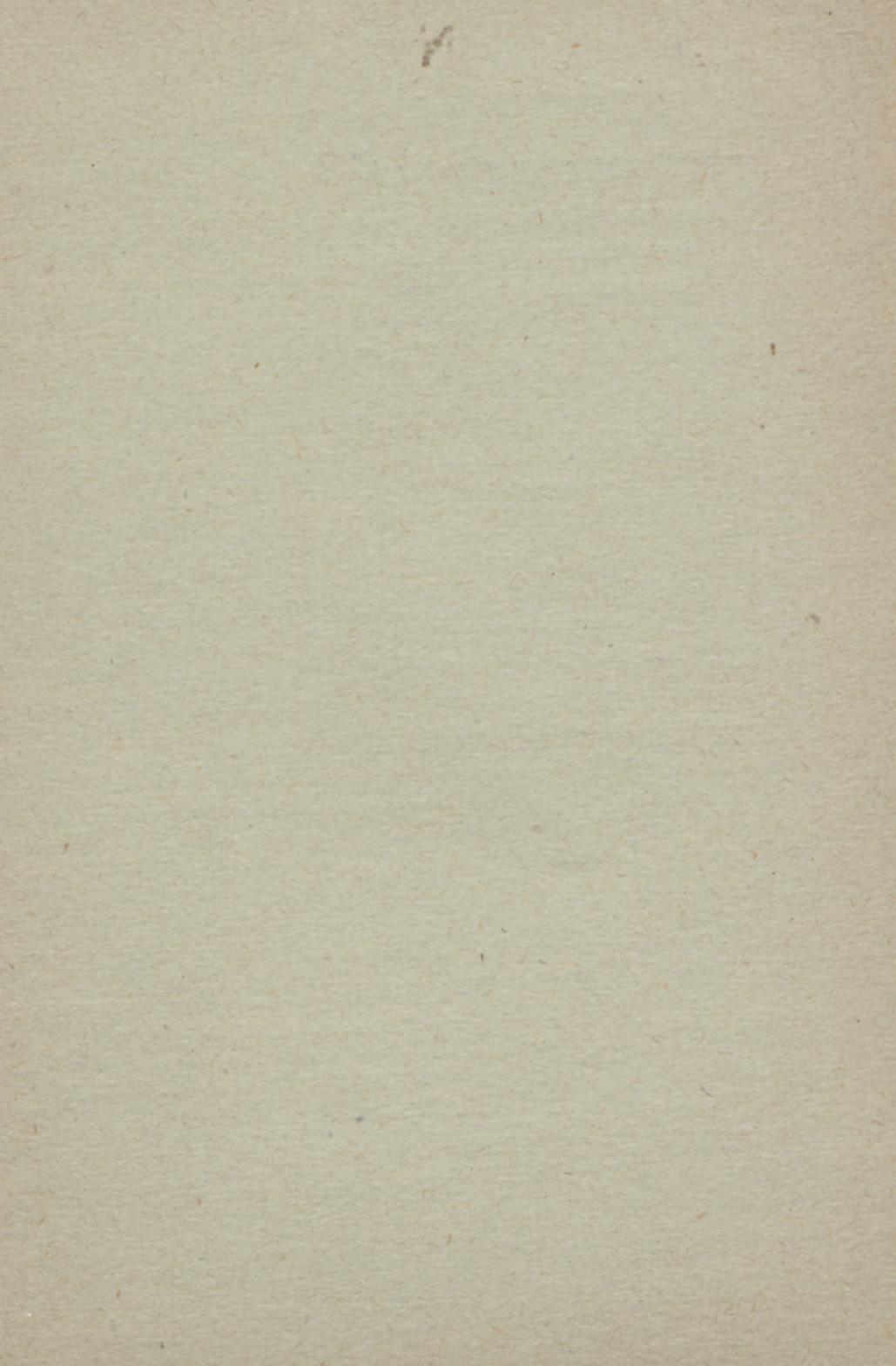
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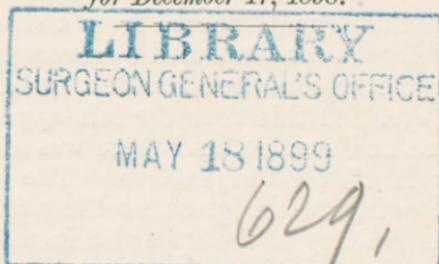
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FURTHER RESULTS
OF OPERATIVE TREATMENT OF CHRONIC
FRONTAL SINUSITIS.*

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THE difficulties that are met with in the treatment of chronic suppurating frontal sinusitis are so great that I feel that any information regarding the progress made in its treatment will have the effect of still further improving our operative methods, and it is with this object in view that I desire to call your attention to some further operative experience in the treatment of this obstinate disease, illustrated with the report of two cases:

CASE I.—*Chronic Suppurating Frontal Sinusitis; Caries of the Fronto-ethmoidal Cells; Orbital Abscess; Fistulous Opening at the Inner Angle of the Orbit.*—I saw this patient, a young man eighteen years of age, for the first time September 10, 1897, in consultation with Dr. Belt, to whom I am indebted for the following history of the case: In the early part of April of the

* Read before the American Laryngological Association at its twentieth annual congress.

present year the patient suffered from a sharp attack of influenza which was accompanied by severe frontal headaches. May 2d he consulted Dr. Belt for a severe pain in the left eye. At this time the left upper and lower lids were red and swollen, and there was also considerable chemosis of the conjunctiva. The eyeball was immovable, owing to the great swelling of the orbital tissues. The swelling of the upper lid increasing, an incision was made at the inner canthus and a large quantity of pus evacuated; and on introducing a probe into the wound it was found to pass into the frontal sinus through a small opening at the inner angle of the orbit. The wound was cleansed with a two-per-cent. formalin solution and packed with iodoform gauze. Owing to the very anæmic condition of the patient, further operative measures were not deemed advisable until his general health improved. He was accordingly put on a course of tonics, and the wound cleansed daily with hydrogen dioxide and a boric-acid solution.

When I saw the patient, September 10th, there was a small fistulous opening at the inner angle of the left orbit through which pus in considerable quantities was discharging. There was a slight drooping of the upper lid, but there was no swelling of the skin over the frontal sinus and no pain on pressure.

Examination of the nose showed the left middle turbinate slightly enlarged, but no secretion was observed to pass from either nostril.

September 17th, the patient was admitted to the Episcopal Eye, Ear, and Throat Hospital, when, after shaving the eyebrow and thoroughly cleansing the parts, an incision was made along the eyebrow, commencing at a point just within the supraorbital notch and extending to the nasal boss. After elevating the skin and periosteum a small opening in the orbital plate of the frontal bone, at its inner angle and just under the supraorbital ridge, was found, communicating with the frontal sinus. This opening was enlarged by means of the gouge and rongeur sufficiently to admit of a thorough examination of the cavity, which was found filled

with granulation tissue, and it was also the seat of caries at its juncture with the fronto-ethmoid cells. The sinus was thoroughly curetted, removing all granulation and carious tissue, and an attempt was then made to pass a probe through the fronto-nasal duct, but, owing to the complete obliteration of this canal, a passage had to be made by passing a trocar through the sinus into the nose. The cavity was then irrigated with a solution of bichloride of mercury, 1 to 3,000, a self-retaining drainage tube passed into the nose, and the wound closed and hermetically sealed with iodoform and collodion. The subsequent treatment consisted in the daily irrigation of the sinus through the drainage tube with a saturated solution of boric acid. At the end of a week the patient was discharged from the hospital, the external wound having healed, and at the end of ten days, there being no secretions from the frontal sinus, the drainage tube was removed.

This patient made an unusually rapid recovery and has had no further trouble up to the present date, May 10, 1898. The scar from the operation is not visible, being entirely concealed by the hair of the brow, but there remains a small pit just under the inner angle of the orbit, resulting from a contraction of the tissues at the seat of the fistula, caused by the orbital abscess. This is noticeable only on close inspection, and is somewhat annoying to the patient on account of the difficulty in keeping it clean.

CASE II. *Chronic Suppurating Frontal Sinusitis; Caries of the Ethmoid Cells and Middle Turbinate Bone.*—Miss X., aged twenty-one years, an anæmic young woman, came under my observation December 23, 1897, giving the following history: Her health had been excellent up to three years ago, when she contracted a severe head cold which was accompanied by frontal headaches of considerable severity. These headaches have been increasing in intensity until now they are almost unbearable. The nasal secretions have also been increasing in quantity and have recently become fœtid. Examination of the left side of the nose shows

a profuse purulent secretion in the nasal chamber coming through a cleft in a very much enlarged middle turbinate bone, which is found adherent to the lateral wall of the nose, thus completely obliterating the middle meatus. The probe revealed considerable caries of the middle turbinate, and I was able to pass it some distance through this body into the anterior ethmoid cells, showing them also to be in an advanced stage of caries. The right nasal cavity was found to be normal. There is no swelling of the skin of the frontal region, but slight pressure above and below the left supraorbital ridge is attended with severe pain. The movements of the eye are not interfered with, but she complains of intense pain back of the eyeball. The general condition of the patient was not at all good. She complained of lassitude, indigestion, morning nausea, and she found great difficulty in attending to her household duties.

An external operation was advised as the only means of completely relieving the patient of her serious condition, but she was very much averse to submitting to this method of relief at this time. I therefore contented myself with removing by means of the curette, at various intervals, as much of the carious ethmoid cells and middle turbinate body as could be safely done through the nose. Her condition was not at all improved by these measures, but it grew gradually worse. On March 25th she reported that a profuse purulent secretion, mixed with a large quantity of blood, was blown from the right nostril, thus showing the *sæptum* between the sinuses had broken down and the right cavity had become involved. The headaches increasing in severity, the seriousness of her condition was again pointed out to her, and a radical operation insisted upon. To this she acceded, and she was admitted to the Episcopal Eye, Ear, and Throat Hospital, April 10, 1898.

April 11th, after shaving the eyebrow and thoroughly cleansing the field for operation, an incision was made through the eyebrow, commencing at a point just within the supraorbital notch and continuing over the nasal boss; the flap thus formed, composed of skin and peri-

osteum, was raised to a sufficient extent to admit of the removal of a centimetre of bone by means of a small crown trephine applied just above the supraorbital ridge and about two or three lines from the median line. On exposing the cavity it was found filled with thick, foetid pus and granulation tissue. After the removal of all secretion and granulations from the sinus its posterior wall was found to be carious in several places, the frontal sæptum broken down, the fronto-ethmoidal and the ethmoidal cells in an advanced state of caries. With a sharp spoon all caries of the walls of the cavity was scraped away, the sæptum was completely removed, as was also all diseased bone between the sinus and the nose, thus leaving a large communication between them. After thoroughly irrigating the parts with a solution of bichloride of mercury, 1 to 3,000, the lining membrane of the sinus was touched with a twenty-per-cent. solution of the chloride of zinc, and the cavity packed with iodoform gauze, the free end of which was brought out through the nose. The periosteum was brought down over the opening and carefully secured with catgut sutures, and then the external wound was closed by means of interrupted sutures and hermetically sealed with iodoform and colodion.

April 12th.—The patient has reacted well from the operation; the temperature is normal, and she expresses herself as being free from pain for the first time in three years.

14th.—There being some odor from the nose, the gauze was removed, but there was very little secretion following an irrigation with a saturated boric-acid solution.

17th.—The cavity has been irrigated daily with a boric-acid solution, and, while the secretions have slightly increased, there has been no pain and no rise of temperature. To-day the stitches in the eyebrow were removed, the wound having healed.

20th.—There was a slight breaking down of the wound and a slight discharge of pus from its inner

extremity caused by the retention of an overlooked suture. This small fistula was cleansed with a bichloride solution and packed with iodoform gauze. The sinus was irrigated daily with a saturated solution of boric acid through a cannula passed through the nose.

30th.—The secretions from the fistula in the eyebrow and also from the sinus had diminished to such an extent that the patient was discharged from the hospital, to return daily for treatment.

May 4th.—The condition of the patient to-day was not so favorable. She suffered during the night with severe headache, slight chilly sensations, and a decided increase in the secretions from the nose. On examination the whole frontal region was observed to be greatly swollen and sensitive to pressure. The temperature at 2 P. M. was 101°. A probe passed into the sinus through the nose showed the opening perfectly free, showing that it was not the cause of any retention of pus; but on passing the probe through the fistulous opening at the inner angle of the orbit it was found to enter readily the opening in the frontal bone, and on its withdrawal considerable pus followed, showing a subperiosteal abscess had formed around the margins of the opening in the bone. After freely evacuating the pus, the wound was cleansed with a bichloride-of-mercury solution and packed with iodoform gauze. 7 P.M., temperature, 100°; the headache was entirely relieved, and the swelling very much reduced.

5th.—The condition of the patient to-day is markedly improved, there being less secretion from the nose and from the external opening; the swelling is still further reduced; no pain; the temperature is normal and has remained so up to the present date.

9th.—To-day there is no swelling in the frontal region and, while the quantity of secretion is very much reduced, there is still some pus coming through the external opening, as well as from the nose. The daily irrigations and the introduction of a gauze wick in the external opening are still continued.

I have gone somewhat into detail in relating the histories of these two cases, because they illustrate two different phases of this affection, and I have endeavored to show that no matter how carefully the technique of these operations is followed out, infection occasionally follows; for it must be remembered that we are exposing an aseptic wound to an infection with a most virulent secretion when the sinus is opened, and notwithstanding the careful antisepsis employed it is not possible in every instance to completely destroy the highly infectious character of this pus.

Case I illustrates very well that variety of abscess of the frontal sinus which is so frequently complicated with orbital abscess, and consequently is met with more frequently by the ophthalmologist than by the rhinologist. Case II is the variety that we, as rhinologists, see most frequently. The clinical history of these cases is probably the same up to a certain stage, and that is the complete occlusion of the fronto-nasal duct, when the pent-up pus makes a vent for itself at the thinnest part of the sinus, which is the inner part of the floor, and we then have an orbital abscess resulting, which so frequently results in loss of vision.

In my last communication on this subject, read at the meeting of the association in Washington, I stated my preference for the external method of operating upon these cases, believing that the intranasal methods were dangerous and failed to give complete relief in those chronic cases which were complicated with caries to any extent, and I advocated the operation as originally devised by Ogston and later practised by Luc—that is, the median operation with drainage through the nose by means of a drainage tube. While this is the method

that has found the greatest favor with operators during the past eighteen months, I believe the method which I have described will be found to possess many advantages over the Ogston-Luc operation. In the first place, it does away with the median incision, which in many instances leaves a scar which is to a greater or lesser degree visible; while the incision through the eyebrow affords just as wide a field for the operation, and the resulting scar is completely hidden by the hair of the eyebrow. In the second place, the drainage tube, which in itself is frequently a source of great irritation, can be dispensed with. This, I think, is a great step in advance in the treatment of these cases, for the gauze for the first few days acts as a drain, and after its removal the opening between the nose and the frontal cavity being of sufficient size permits of a free and constant drainage from the sinus into the nose.

The opening through the ethmoid bone should be large and sufficiently free to permit a complete removal of all caries of the ethmoid cells, which in my experience nearly always complicates chronic abscess of the frontal sinus. After the removal of the drainage tube the opening through which it passes has a tendency to contract, and if an occasion should arise after its removal for a continuance of the local applications to the sinus, the passage is frequently difficult to find, and the passage of instruments through it very painful. Such occasions arise frequently long after the patient has been discharged cured, as many of you who have had much experience with the treatment of abscesses in the accessory sinuses can testify to the readiness with which inflammations in these cavities are reexcited by a simple rhinitis.

