

XVIII.

DEVELOPMENTAL ABSENCE OF THE OUTER RIGHT SPHENOIDAL WALL, OCCUPIED BY A VEIN COMMUNICATING DIRECTLY WITH THE CAVERNOUS SINUS. OPERATIVE FATALITY AND AUTOPSY.*

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In the surgery of the accessory sinuses, brilliant accomplishment has been attended by unavoidable mishap. To overcome this or perfect the operation, various procedures have come to be known by their originators until today half a dozen definite and different plans are offered to accomplish the same end, some of them conservative and some the most thorough and radical that modern surgery can offer. The more that one studies anatomic specimens in connection with the sinuses, the more he is impressed with the large number of abnormalities and the necessity of exact measurements and familiarity with the various cavities of the head. Vital centers that are separated from pus cavities only by cribriform osseous plates lined by degenerate tissue are not ideal fields for operation. After several years of work in draining the sphenoid without anything suggesting an accident, the following condition was found and its attempted correction attended by a fatality:

In June, 1904, Miss L., 21 years of age, born in Massachusetts, and a school teacher by occupation, was referred to me by Dr. B. for treatment, with the following history:

Past History.—Severe attack of diphtheria at 5 years of age. Light attack of measles. Catarrh since childhood. The act of swallowing food was accompanied by gagging and vomiting which released a thick tenacious mass from the posterior nares. When actual vomiting did not occur, pharyngeal irritation excited hawking so that she has to leave the table. To

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avoid this she has been in the habit of using an anterior douche previous to each meal. There is pain over the bridge of the nose.

Examination.—Anterior nares normal, except an enlargement of the left anterior turbinal cell of the middle ethmoid. Posteriorly there is a tenacious mass covering the entire pharyngeal vault. The posterior wall of the pharynx is glazed and dry. A small amount of dry secretion covers the anterior end of each middle turbinate. A bullet pointed probe shows a carious area in both sphenoids. The antra and frontal sinuses illuminate normally. General condition good.

July 5th.—The right anterior sphenoidal wall was removed with the Grünwald forceps, and the anterior end of the right middle turbinate with scissors and snare.

April 15th.—The left anterior sphenoidal wall was removed, together with the anterior end of the left middle turbinate. A carious area on the floor and inner wall was curetted.

March 24th, 1905.—No symptoms except dryness of the pharynx.

November 17th, 1906.—Came back complaining of a return of former symptoms, but less marked. A large cell was found containing pus, in the remains of the left middle turbinate which was opened and drained with biting forceps.

March 25th, 1907.—A thin tenacious grayish coating was found still present over the pharyngeal vault. Patient said that this still troubled her about twice a week. A thorough examination was again made and in the right sphenoid a carious area was felt on the outer wall with a soft mass posteriorly. On account of the previous operation this was taken to be polypoid, and but little force was used in probing, for fear of exciting hemorrhage. The middle turbinate and the anterior wall of the sphenoid had already been removed. A curette was introduced behind this presenting mass and gently withdrawn, but was followed by a profuse venous hemorrhage and a convulsion. The patient immediately became unconscious. A rapid tampon, after the patient had fallen in collapse on the floor, controlled the hemorrhage externally, but symptoms of brain pressure supervened, and she was removed to the Charlesgate Hospital, where she died at 11 o'clock, seven hours after the accident.

Autopsy by Dr. Leary, of Tufts Medical School, in the presence of Drs. Arnold, Courtney, Swan and others. A hemor-

rhagic clot filled the calvarium. A large varicose vein was found to occupy a dehiscence in the outer wall of the right sphenoid, which communicated directly with the cavernous sinus, and was the cause of death. The remaining ethmoid cells were everywhere necrotic, and about one-half ounce of mucopurulent secretion was found.

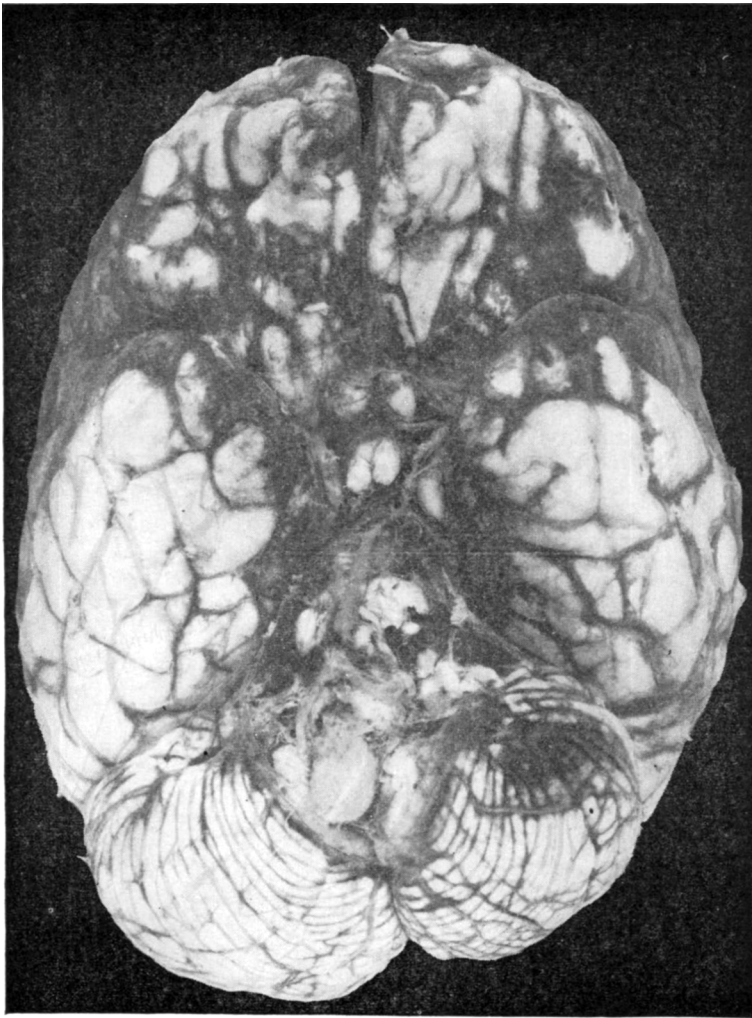
It was my custom in my early work on the sphenoids to break down the anterior wall (i. e., enlarge the normal opening with a Blake mastoid curette) until I found that this was apt to be followed by a rapid closure anteriorly before the cavity was dry. Latterly the Grünwald forceps that bite from behind forward, have proved more satisfactory and the drainage alone cures the case clinically. This is fortunate for if one studies a large number of sphenoid sinuses on the cadaver, he is at once impressed with the extreme thinness of the superior and outer walls which indeed may be cribriform, or so thin as to be readily seen through. The outer wall in addition may project into the general cavity so that it might be readily broken down in the radical Killian operation, unless one were working by careful measurements. It is easy to conceive that the dragging forward of a polypoid mass, even though there were no break in the osseous structure, might be accompanied by disastrous results.

While clinical experience has taught us that the sinuses are rarely involved separately, there are a large number of cases that cease to give symptoms if properly drained intranasally. It is usual to associate disease of the sphenoid sinus with a glazed pharynx, a thick tenacious mass in the vault and dried secretion on the anterior surface of the middle turbinate. In women this is usually accompanied by an occipital or vertex headache. The diagnosis is readily confirmed by a small bullet pointed probe passed directly back to the pharynx through a line that passes midway between the anterior end of the middle turbinate and the septum. If it does not at once enter the osteum, slight elevation or depression usually at once locates it. The anterior end of the middle turbinate need not be disturbed unless diseased. It is unnecessary for diagnosis and generally is not required for treatment. The small probe with the shoulder which its bullet point gives it, will enter any osteum without special curve or measurement, as it can be manipulated very delicately, the bare bone being at once felt. Emphasis should be laid on the fact that removal of the an-

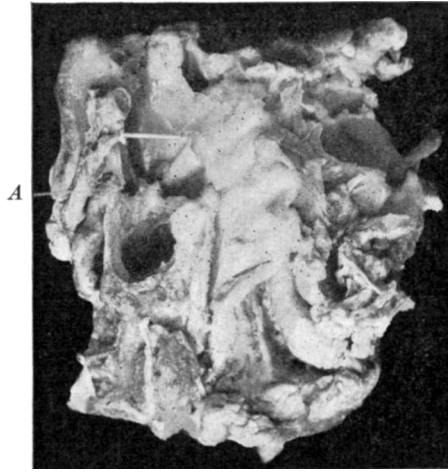
terior wall is all that is necessary to relieve symptoms. Cleansing is not only unnecessary, but is usually followed by a distressing headache. Other measures are dangerous and not needed. The removal of the anterior wall should be accomplished by the instrument producing the least trauma, and is therefore followed by the least reaction and tendency to fill in before the cavity is thoroughly drained.

In the case cited, it was my intention to insert the curette behind the mass, entering from the inner side and draw forward. In doing so I did not feel any sensation of bony contact, which one is apt to recognize however slight the contact of a steel instrument with an osseous surface.

Dr. Leary's careful examination of the recent specimen showed an absence of the outer wall, and a large vein which communicated directly with the cavernous sinus, and which was mistaken for polypoid tissue. Later, after the specimen had been prepared by the prosectors, an undoubted fracture was found in the outer wall, and whether this was made at the time of the operation, or later in its final preparation, cannot be determined.



Subpial hemorrhage from vein in the outer wall of the sphenoid communicating with the cavernous sinus.



a. Developmental abscess of the outer wall of the sphenoid sinus. Fatal hemorrhage from a large vein communicating with cavernous sinus.