Three unique head tumors / by William Seaman Bainbridge.

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III.—Intracranial Tumor—Epidural Aberrant Thyroid.

By

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The three cases which follow are reported not only because they present certain unique pathological features, but because they emphasize a number of important points in diagnosis.

Case I. *Indurated Mass in Scalp, Simulating Malignancy, Caused by Foreign Body.*—G. S., female, aged fifty. Admitted to my service at the New York Polyclinic Medical School and Hospital, February 14, 1908. She gave the history of having first noticed, two years before, a small tumor on the top of the head. A few days after detection a scab formed over the center of the mass, and when this was removed there was a free discharge of purulent material, after which the slight soreness which had been present disappeared. The indurated area persisted, however, and from time to time a number of physicians in turn were consulted. The majority of those who examined it pronounced it "malignant," and advised the removal of the entire area under general anesthesia. To this the patient refused to agree.

Examination when I first saw her revealed a tumor of the scalp about the size of a silver dollar, a little to the left of the center of the occiput, as shown in Fig. 1, reproduced from a wax cast (Roderburg) made upon admission to the hospital. Toward the center of this was a crater-like elevation in which was an opening. At the bottom of this opening could be seen a dark object. From the history of the case and from examination the condition appeared to me to be more of an inflammatory character than malignant with a foreign body of some kind. I therefore advised removal of the tumor under local cocain anesthesia.

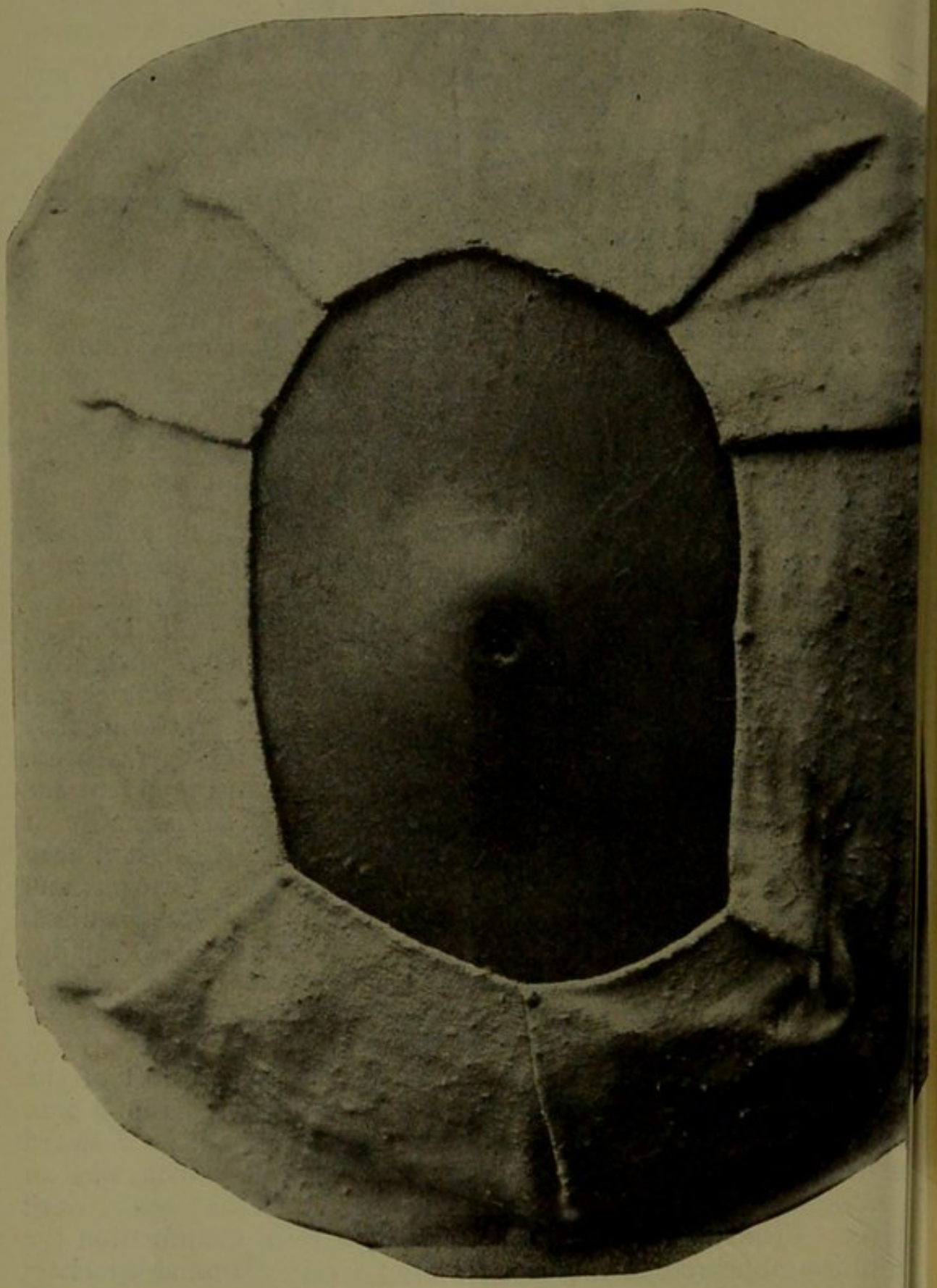

FIG. 1.—CASE I. Indurated mass in scalp. Simulating malignancy. Caused by foreign body.

To this the patient consented, and the operation was performed in the clinic. The entire mass was removed, the wound closed, and a dry dressing applied. Healing by primary union was prompt, and the patient has had no further trouble in this regard.

Examination of the mass revealed part of the tooth of a comb, which had evidently been broken off while the patient was combing her hair, and which had become embedded in the tissues of the scalp, giving rise to chronic irritation, with subsequent inflammation and induration.

Careful microscopic examination showed no evidence of malignancy.

The points to be emphasized by this case are:

1. The clinician must ever be watchful for the unusual and unexpected.

2. Chronic irritation alone, even in those of the so-called cancerous age, does not always initiate a malignant process. Other factors must be present.

3. The importance of finer discrimination in diagnosis. Despite the stationary character of the growth, the absence of pain, and the presence of a palpable foreign body, a number of physicians had pronounced the condition malignant.

4. The promptness with which the tissue healed in the neighborhood of where chronic irritation had existed for over two years.

Case II. *Epithelioma of the Scalp, Involving External Table of Skull and Diploe.*—A. M., female, age given as sixty-five, in reality nearer seventy-five. Admitted to my service at the New York Skin and Cancer Hospital, January 16, 1908. Fifteen years before admission the patient had first noticed a small "lump" on the top of the head. This had grown slowly, but had given little trouble until a year ago, when it began to grow very rapidly, to ulcerate, to bleed freely, and to cause considerable pain. She then went to the dispensary of one of the hospitals of the city, where for a year she was given antisyphilitic treatment. The conditions grew steadily worse despite this treatment, whereupon she was referred to me.

Examination revealed an ulcerating area of the scalp about four inches square, as shown in the reproduction of the wax cast (Roderburg) (Fig. 2). Upon operation this was found to involve not only the scalp, but the external table of the skull and the diploe. The entire area covered by the growth, together with a free margin of healthy tissue, was removed. The external table of the skull, with the corresponding diploe, over an area about two inches square, was chiseled away. The wound was packed.

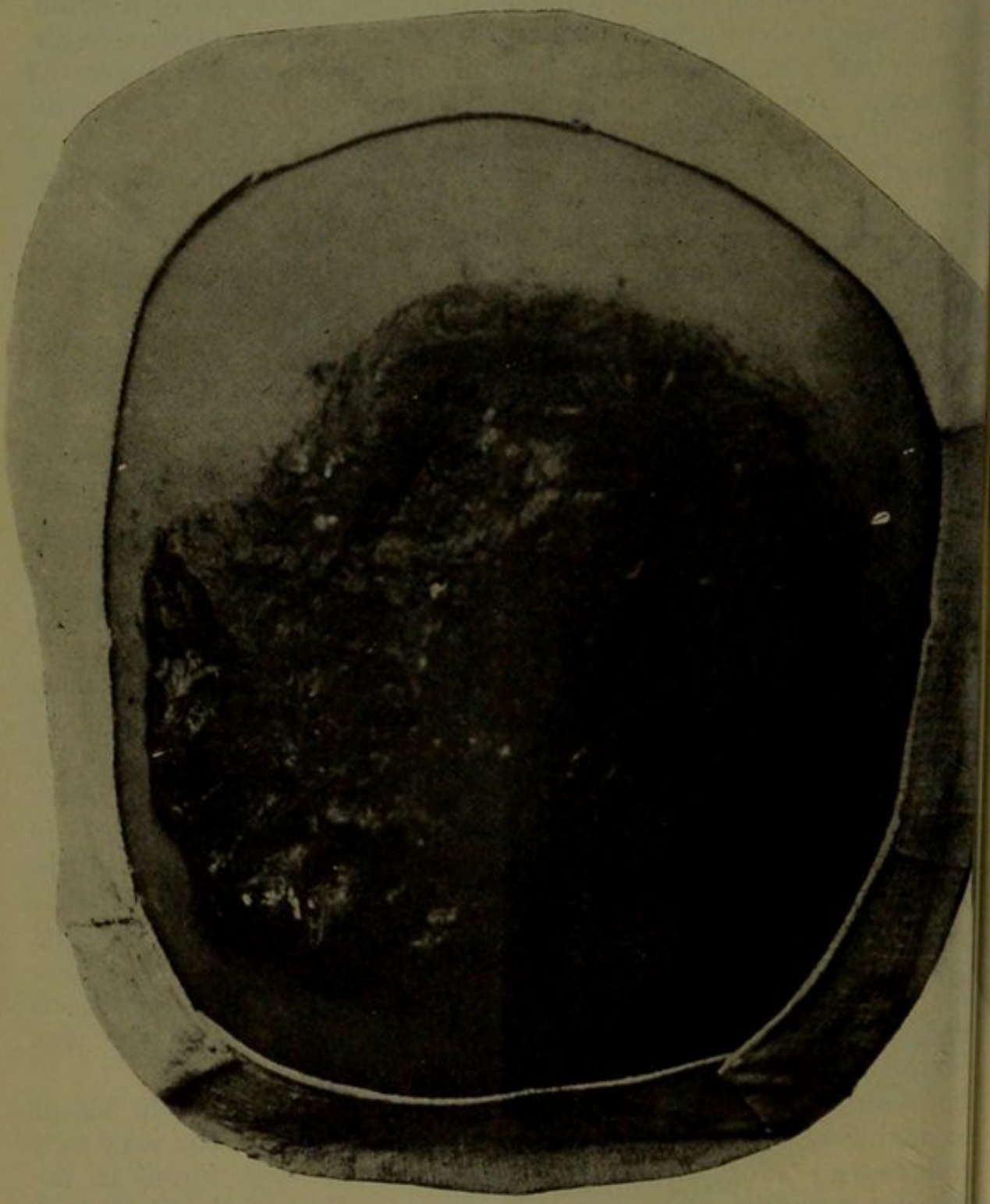

FIG. 2.—CASE II. Epithelioma of scalp. Involving external table of skull and dura, before operation.

It was intended to do a plastic operation after healthy granulations were formed, but this the patient obstinately refused to allow. She left the hospital at the end of three weeks, with the wound granulating around the edges.

On February 21, 1908, the patient was admitted to my service at the New York Polyclinic Medical School and Hospital, remaining under care for a number of weeks. Later she was treated in my dispensary service at the same institution. Gradually the entire area closed in and rounded out, so that the new skin formed and the tissues underneath it seemed to correspond very largely to the structure of the normal scalp, even the bone of the external table of the skull seeming to be reproduced. In the center of the area two or three hairs have grown. The head is now in perfectly good condition, as shown in the reproduction of the wax cast (Roderburg) made after healing was complete (Fig. 3).

The pathological report was "epithelioma basocellare, of the papillomatous type."

This case is interesting because of:

1. The extent of the malignant process and the involvement of the bone.

2. The complete recovery in a woman of advanced age.

3. The regeneration of the tissues, or their replacement by healthy tissues, without the intervention of plastic surgery.

4. The mistaking of an epithelioma, which had been practically stationary for fourteen years and which had then suddenly taken on rapid growth, for syphilis, and the administration of antisyphilitic treatment for a year, despite the continued rapid development of the process.

5. The pathological diagnosis of "epithelioma basocellare," supposed by many to be a nonmalignant form, in a case where the process was so extensive as to involve not only a large area of the scalp, but the external table of the skull and the diploe.

Case III. *Intracranial Tumor Epidural Aberrant Thyroid.*—M. S., female, aged sixty-two, married, native of Nova Scotia. First consulted me in October, 1906. Examination revealed a tumor, about the size of an orange, on the left side of the head, as shown in Fig. 4. This had gradually developed, according to the history, within three years, but had given no symptoms other than occasional severe headache. The eyes were slightly more prominent than normal, there was some pallor, suggestive of the early stage of cachexia, and the patient was very nervous. Otherwise she was in fair general condition. On the right side a goiter about the size of a hen's egg could be noted.

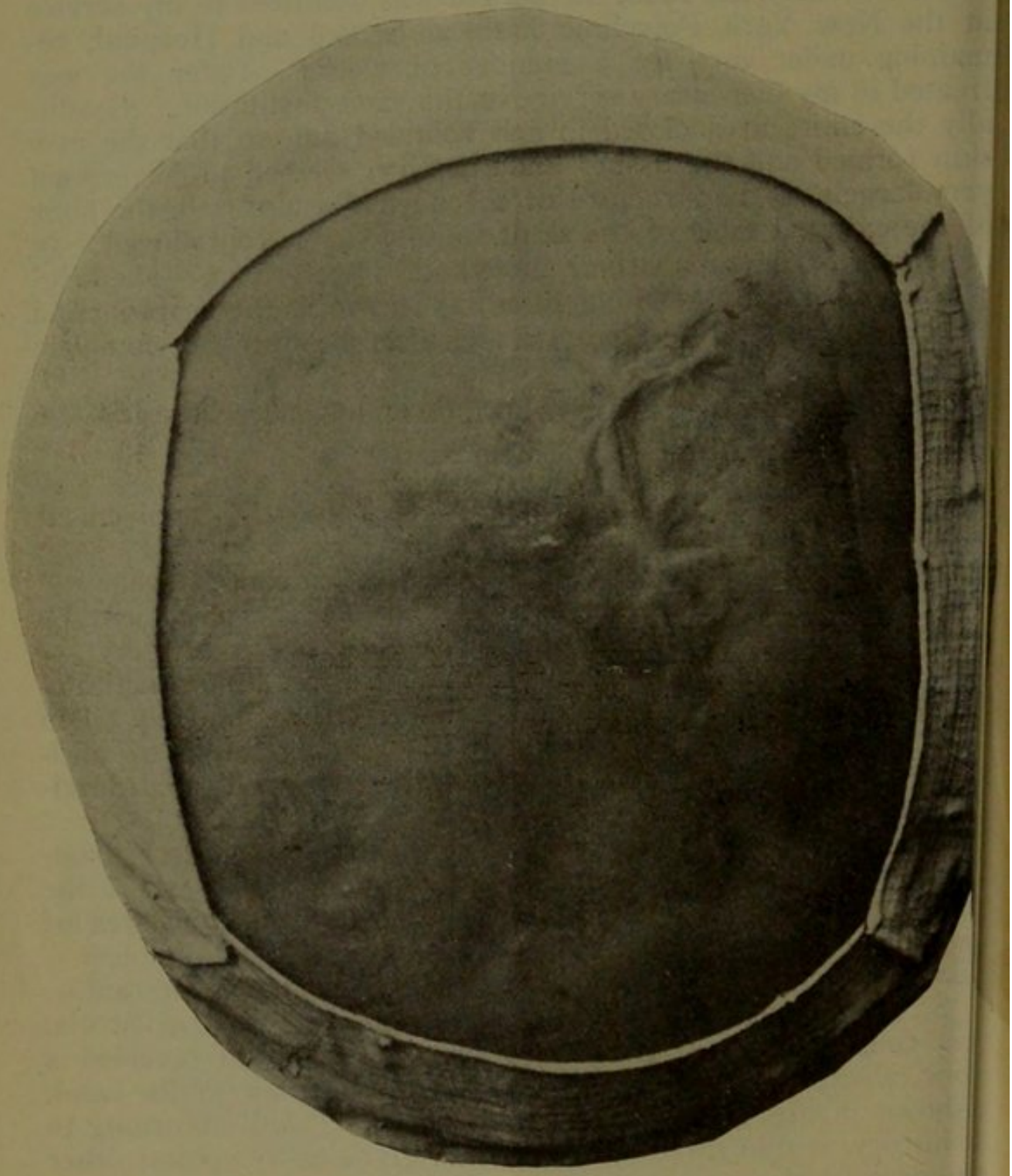

FIG. 3.—CASE II. Epithelioma of scalp, after operation.

Examination of the tumor showed it to be not adherent to the skin, and to come from the external table of the skull or from within. A bony ridge could be felt around its base. The consistency of the tumor was masked by the tense pericranium and by the scalp overlying. No pulsation of the brain could be felt. I made the diagnosis of intracranial tumor, and advised an exploratory operation.

Previous to coming to New York the patient had consulted three physicians. Two of these made the diagnosis of sebaceous cyst, and offered to remove the tumor in their offices under local cocain anesthesia. The third believed it to be a more serious condition, but being unwilling to operate himself he advised her to consult with someone who could cope with whatever it might prove to be. She then came to New York and consulted me.

The patient was admitted to my service at the New York Polyclinic Medical School and Hospital, October 10, 1906. She was presented before the class in that institution, consisting of about fifty physicians, all of whom were given an opportunity to examine the case and make a diagnosis. Not one would agree that the tumor was intracranial, the concensus of opinion favoring the diagnosis of sebaceous cyst. Hematoma, lipoma, fibroma, dermoid cyst, meningocele, carcinoma, and sarcoma were some of the diagnoses offered.

Believing it to be intracranial, I made an exploration. I found that the probe passed down through the wound, straight into the skull, confirming my diagnosis. A small piece of the tumor was removed for examination, the strictest precautions of asepsis being taken, and the wound closed. The situation was explained to the family and the gravity of the condition made clear. It was decided to give the patient the chance afforded by operation. Accordingly, two weeks later, I operated at the New York Polyclinic Medical School and Hospital. The tumor, which was the size of an orange externally, and almost as large internally, was removed, with the exception of the part attached to the dura, where it pressed upon the brain. The dura was greatly thinned over the indented portion of the cerebrum. The hemorrhage was terrific, and was controlled largely by pressure. The patient was removed from the table as quickly as possible. She failed to rally, despite the use of the various methods of stimulation, including infusion, and died within two hours after the operation.

Postmortem Examination.—Dr. F. M. Jeffries, pathologist to the New York Polyclinic Medical School and Hospital, gave the following report: "Tumor of dura mater covering a portion of the left cerebrum. It was three and one-half inches in diameter,

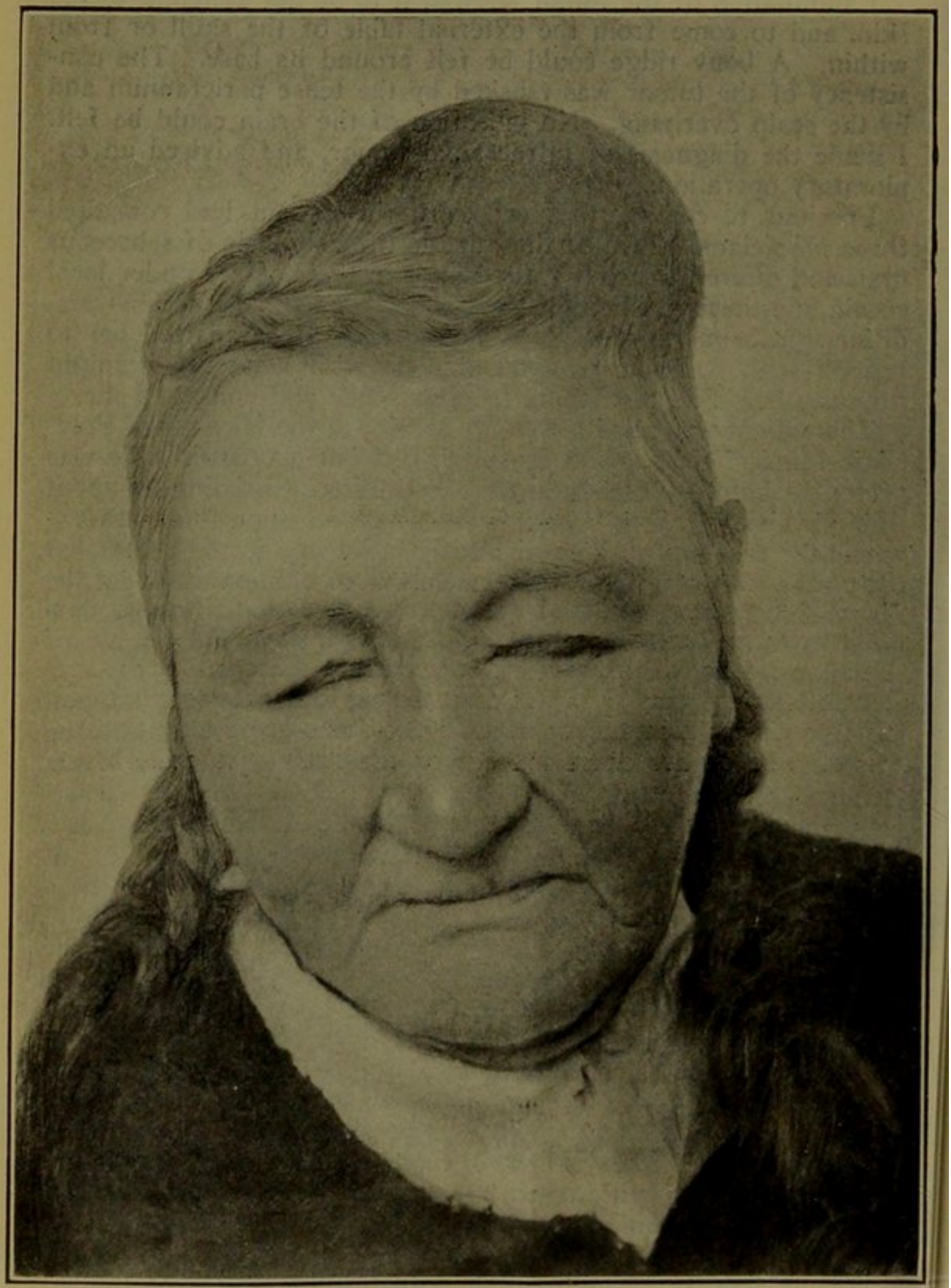

FIG. 4.—CASE III. Intracranial tumor. Epidural aberrant thyroid.

circular, and on the outer surface of the dura. Its upper edge bordered on the median line about three-quarters of an inch posterior to the middle. The growth was sharply defined upon the dura, but did not manifest itself on the inner surface. The brain tissue beneath was depressed for an area three and a half by four and a half inches. The depression was computed to be one inch at its center. There was no evidence of absorption or inflammation of brain tissue.

"Microscopically the growth is somewhat doubtful in character. Judging from the clinical aspect it should be endothelioma; but sections of it would serve very well for demonstrating thyroid tissue. Structurally it is an adenoma suggesting aberrant thyroid."

Dr. James Ewing, Professor of Pathology, Cornell University Medical College, reported as follows: "The sections of the tumor of the dura mater show the rather typical structure of normal thyroid gland. It is made up of numerous alveoli 20 to 50 micra in diameter, lined by low cuboidal cells, and filled with homogeneous acidophile material resembling thyroid secretion. The narrow stroma between these alveoli is infiltrated with the same material, and this stroma also contains capillaries in immediate contact with the epithelium. In many alveoli are pigmented desquamated cells similar to those often seen in goiter.

"These appearances are so exactly similar to those seen in many goiters that I have no hesitation in accepting them as of that nature."

Dr. William Elser, pathologist to the New York Hospital, reports as follows: "Examination of the section taken from the intracranial tumor reveals the structure of a thyroid gland—aberrant thyroid."

From this evidence we are warranted in making the diagnosis of aberrant, accessory or wandering thyroid, a condition concerning which the literature is scant and vague.

The thyroid gland, which, as all are aware, is subject to various anomalies of development, has been made the subject of extensive examination and study within the last few years. Too much thyroid tissue has effects peculiarly its own, and the same may be said of absence or deficiency of this gland. The etiology of these conditions is not within the scope of this article other than as it may bear upon the condition represented by Case III.

From a cursory survey of the literature concerning anomalies of the thyroid gland I have been able to find nothing concerning accessory or aberrant thyroid glands in localities other than in the immediate vicinity of the normal thyroid gland. We are told

by Green that "Apart from hypertrophy of this gland occurring in endemic goiter and Graves' disease, distinct encapsuled tumors having the structure of the normal thyroid may rarely be found." Similar vague statements are made by other pathologists.

Stengel says: "Accessory thyroid glands have been found in

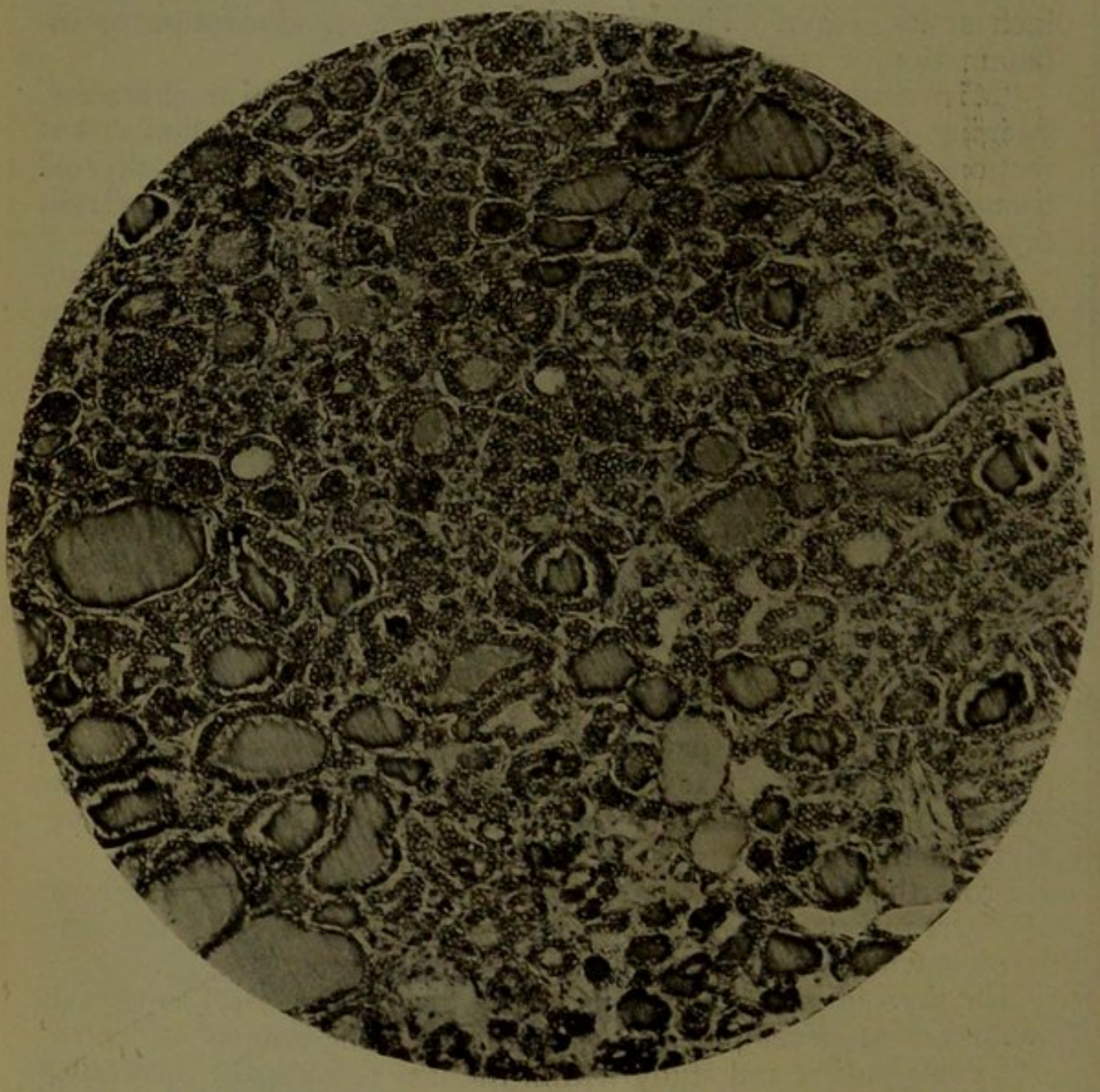

FIG. 5.—CASE III. Aberrant thyroid. Photomicrograph showing thyroid-gland structure.

various situations. Sometimes small masses of thyroid tissue occur alongside of a normal gland, either above it, in the neck; or below it, behind the sternum and in the anterior mediastinum. In other cases the normal thyroid is absent, but is represented by small masses in the situations named or in other parts. In a few instances tumors at the base of the tongue and within the

larynx and trachea have been found to be composed of thyroid tissue."

Bland-Sutton (Tumors, Innocent and Malignant, 1907) says concerning accessory thyroids: "They occur most frequently in the neighborhood of the hyoid bone and in the hollow formed by the two lobes of the thyroid gland. As the thyroglossal duct is directly associated with the formation of the thyroid body, and as median thyroids are found directly in its track from the hyoid to the thyroid isthmus, it is not unreasonable to regard these little bodies as remnants of this remarkable tube.

"Accessory thyroids occasionally arise in connection with the germs of the lateral lobes of the thyroid: these are most commonly found in the neighborhood of the greater cornua of the hyoid.

"Accessory thyroids are in the main innocent structures, but occasionally they give rise to troublesome tumors. It is well known that when the thyroid body becomes goitrous and accessory thyroids coexist, the latter will enlarge and become, in fact, goitrous. Apart from this, accessory thyroids will enlarge on their own account and produce tumors that closely simulate unilateral enlargement of the thyroid, and occasionally give rise to bronchoceles of moderate dimensions."

Butlin and Spencer (Diseases of the Tongue, 1900), in speaking of cysts and tumors in the position of the foramen cecum, mention two cases describel by Butlin in 1890, which "would formerly have been described as adenomata; but, in accordance with the views expressed by Bernays and Bland-Sutton, opinion was expressed that they consisted of thyroid gland tissue." Continuing, these authors say, "An abnormal condition of the thyroid gland itself often exists along with a thyroid tumor. In particular, the gland may be ill-developed or absent, and the tumor upon the dorsum of the tongue has been proved to have been physiologically an active thyroid gland in that its removal has produced in the patient operative myxedema or cachexia strumipriva."

It is interesting to note that decided mental changes sometimes follow the removal of accessory thyroids, as in the cases reported by Seldowitch, Chamisso de Boncourt, Reintjes, and Galisch.

The dorsum of the tongue, at the site of the foramen cecum, seems to be the most frequent locality in which accessory thyroids appear. Such cases have been reported by Butlin, of London, as we have seen; by Wolf, of Hamburg; Bernays, of St. Louis; J. Collins Warren, of Boston; McIlraith and Bond, of England;

Schadle, of St. Paul; Theisen, of Albany; Watson, of Philadelphia; Winslow, of Baltimore; Oliver C. Smith, of Connecticut, and other authors.

Such tumors are thought to be easy of explanation if one bears in mind the relations of the thyroglossal tract. Adenomata such as those mentioned by Bland-Sutton as "a very rare variety known as *wandering goiter,* on account of its mobility," are not so difficult to explain. Even the "enlarged glands," removed by Dr. John A. Wyeth from the neck of a patient and reported by Dr. Jeffries as containing "two nodules of apparently normal thyroid tissue," are not so far from the original seat of thyroid tissue as to render their existence difficult of explanation.

"Wandering thyroid" arising from the dura mater is more difficult of explanation from an embryological point of view, and the case herewith reported is, so far as I have been able to ascertain, the only similar one recorded. Whether it is explainable on the basis of Cohnheim's theory of "misplaced embryonic cells," or whether, in the process of development or during adult life, an embolus, so to speak, of thyroid cells found its way to the external surface of the dura, there proliferating, cannot be determined.

Whatever may be the etiology of the condition, the case herewith reported emphasizes again the importance of careful diagnosis, and the necessity for being on guard concerning the unusual and unexpected. It would certainly have been a grave error to have attempted the removal of an intracranial tumor in one's office, under local cocain anesthesia, as proposed by several of the physicians who diagnosed this as a case of sebaceous cyst.

Furthermore, the importance of having a careful microscopic examination made of every tumor removed is again clearly shown. In this case it happened to be a matter of historic interest only because of the patient's death, but in other instances, as we have seen, the removal of an accessory thyroid was followed by myxedema and distinct mental changes. The presence of thyroid-gland tissue in the tumor immediately suggested to the surgeons in the instances mentioned the possibility of operative myxedema, and the necessary treatment followed.