

Abstracts.

PITUITARY GLAND.

Frazer, J. Ernest.—The Earlier Stages in the Development of the Pituitary Body. "Lancet," September 28, 1912, p. 875.

A short account, with more than usual detail, of the early state of the pituitary body. This body is, as everyone knows, formed by an upgrowth from the primitive mouth (Rathke's pouch), meeting a protrusion (the infundibulum) from the forebrain.

Before the end of the first (fœtal) month there is a comparatively large and open recess passing up from the upper part of the early mouth cavity and placed in contact with the back aspect of the optic recess of the fore-brain. This stage in the pituitary development is interesting, because it shows the definite relations to each other of the regions from which the parts of the complete structure will grow. This is described in detail in Frazer's paper, which requires to be read *in extenso* to be appreciated. The result of this growth is that, in the middle of the third month, the originally simple stomodæal pouch has been divided into a pharyngeal part in the roof of the naso-pharynx and the free edge of the septum, and an upper intra-cranial part that is forming the "glandular" portion of the pituitary body. The intermediate or basal part of the pouch disappears in the base of the skull. The occasional presence of a bony canal suggests that it may sometimes persist, though it is not improbable that this may be only a persistence of vascular tissue in some cases. The cavity of the infundibular growth apparently disappears during the third month, the process being composed mainly of neural cells continuous with those in the floor of the third ventricle, but with a layer of fibres on their ventral side. In the fourth month fibres have appeared among the cells. To sum up: during the second and third months Rathke's pouch, at its dilated upper end, grows up on both sides of an infundibular or neural process, and encloses its proximal part, leaving its distal end freely projecting behind. At the same time lateral groups of epithelial processes spring from the front aspects of the pouch margins, and a central group from its front aspect between these. The lateral groups extend from below upwards, and thus reach the cornua that enclose the neural part, and in the interval thus occurring between them as they pass backward the central group comes to the surface. The groups, enlarging, form the great mass of the gland in the fourth month and push the cavity to the back, where it lies under the neural portion. The buccal portion loses its connection with the naso-pharynx about the beginning of the third month or later, but a persistent tract remains below the skull running down the back of the nasal septum to the angle between the latter and the soft palate. Frazer has never seen any tendency of the neural part to invade the buccal portion, or to throw out any processes whatever.

Macleod Yearsley.

Lodge, S.—Cases Illustrating some Intra-cranial Conditions of General Interest. "Brit. Med. Journ.," March 16, 1912.

In this paper seven cases of disease of the pituitary gland are recorded.

Acromegaly was the chief clinical manifestation of five of these, and a liposity with sexual infantilism of the reversive form of the remaining two.

One patient suffered from "uncinate fits." The report of an autopsy made on a subject of acromegaly with gigantism presents some interesting details of the morbid anatomy of the larynx, nose and ear in that particular syndrome.

The transphenoidal route was adopted for draining a pituitary cyst in two patients. In one an osteoplastic flap of the nose was turned to one side; and, in the other, the nose was turned up by a large sublabial approach. The septum nasi was removed with its mucosa attached in both operations. The writer would strongly recommend in preference to either of these methods that elaborated by Cushing.

The sublabial incision is not more than 2 cm. in length. The septum is removed submucously through a submucous resection speculum, the cavum sellæ is entered, and the floor of the pituitary fossa removed: hæmorrhage is arrested, the septal mucosæ fall together, and the sublabial incision is closed. One of Cushing's patients after a simple decompression resumed her occupation after an interval of seven days. Cushing further points out that a sellar decompression facilitates radiotherapy, applied through the nares: and, in states of hypopituitarism, will reduce the amount of pars posterior gland-substance required for efficient opotherapy.

Author's Abstract.

McCarthy and Karsner.—**Adeno-carcinoma of the Thyroid with Metastasis to the Cervical Glands and Pituitary: A Contribution to the Pathology of Abnormal Fat Formation.** "Amer. Journ. Med. Sci.," vol. cxlv, No. 6.

Among the clinical varieties of excessive and aberrant fat formation, the form known as Adiposis dolorosa was found by the authors to be associated with lesions of the pituitary, thyroid, and sexual organs, and of seven cases examined *post-mortem* by other observers, lesions of the thyroid consisting of atrophy with compensatory hypertrophy were noted in all, while tumours of the pituitary were present in three cases and pathological lesions of the gland in two others.

Similar features are presented by some of the other varieties of lipomatosis, and while one of the cases here described appeared to represent an intermediate type between adiposis dolorosa and adiposis cerebri, and showed an adeno-carcinoma of the pituitary body, the other (described in much detail) presented features of the three groups—adiposis cerebri, symmetrical adeno-lipomatosis, and adiposis dolorosa—and was associated with adeno-carcinoma of both thyroid and pituitary glands. In this second case the lesion of the pituitary was regarded not as a metastasis from the thyroid, but as the result of a compensatory over-action, followed by a degenerative process predetermined in its nature by an already existing similar condition in the thyroid.

Thomas Guthrie.

Hirsch, Oskar (Vienna).—**The Operative Treatment of Tumours of the Hypophysis Cerebri by Endonasal Methods.** "Archiv für Laryngol.," vol. xxvi, Part III.

In this important paper Dr. Hirsch gives a detailed account of the pioneer work on which he has been engaged during the past three years. His experience of operations on the pituitary body by the endonasal route is unique, and the present paper is based on a series of twenty-five cases treated in this way. Four of the cases have been already reported

(*Archiv für Laryngol.*, vol. xxiv, 1910), but the description of them is here repeated in full, together with details as to their subsequent history.

Cases of tumour of the hypophysis may be divided into three groups, according to the symptoms which they exhibit: (1) Cases of well-marked acromegaly, with enlargement of the hands, feet, nose, tongue and jaw, thickening and pigmentation of the skin, increase of hair on the body, enlargement of the larynx (hoarseness) and of the thyroid gland. The sexual functions are altered, and disturbances of vision are common. (2) Degeneratio adiposo-genitalis. Increase of the body-fat together with loss of sexual function, and very often certain trophic changes, such as falling out of the hair, brittleness of the nails, disturbances of sweat and urine secretion, and lethargy. Visual disturbances are the rule. (3) Disturbance of vision without *striking* changes in the general condition. Even in these cases, however, careful inquiry will almost always disclose the presence of one or more of the symptoms mentioned in the second group. The visual disturbance takes the form in this, as in the other groups, of diminution of acuity and contraction of the visual field. The latter shows itself very frequently as a bitemporal hemianopsia, and is as such almost pathognomonic of pituitary growths. In the early stages colours are alone affected.

The diagnosis of pituitary tumours is based on a consideration of the general symptoms presented by the case, a careful examination of the eyes, and the discovery by radiography of a widened sella turcica.

In approaching the hypophysis by the endonasal route the choice lies between two methods—the ethmoidal and the septal. In both local anæsthesia is employed. The first is carried out in three or four separate stages at intervals of a few days as follows: (1) Excision of the middle turbinal of one side; (2) removal of the posterior and some of the anterior ethmoidal cells of the same side, so as to lay bare the whole anterior wall of the sphenoidal sinus; (3) removal of the latter so as to expose the widened sella, which is opened either at once or in a fourth stage. In the septal method, approach to the sphenoidal sinus, and so to the pituitary body, is obtained by a submucous resection of the septum. Both sphenoidal sinuses are opened in the mid-line, and the whole operation is carried out in one sitting, unless narrowness of the olfactory fissure renders necessary a previous removal of both middle turbinals. This method entails less risk than the ethmoidal of infection from the nasal cavities. It was employed by the author in all the cases except one. In performing the operation the most scrupulous aseptic precautions are observed, the instruments being re-sterilised at frequent intervals during the course of the operation. Anæsthesia is secured by the application of cocaine and tonogen solutions, and by infiltration, with Schleich's No. 2 solution, of the whole septal mucosa from the sphenoidal sinus forward to the membranous septum. The operation is carried out with the patient in the sitting position. After removal of the greater part of the cartilaginous and bony septum, and the rostrum sphenoidale, the anterior wall of the sphenoidal sinuses is cut away. This exposes the widened sella turcica, in which a transverse incision is now made with a chisel, and through this a special hook-shaped elevator is passed and inserted between bone and dura. By traction with the elevator the bony shell of the tumour is broken away, and it is further removed with cutting-forceps so as to expose as large an area of dura as possible. A flap of dura is turned down, and the tumour pierced in order to discover whether or not it is cystic. If it is, as much of the cyst-wall as possible is excised. If solid, the tumour is removed with the curette, the latter

being used mainly in a downward direction, and only with the greatest gentleness laterally and upward. The operation is completed by the insertion between the muco-periosteal flaps of a strip of iodoform gauze. The patient leaves hospital in from eight to ten days.

The results of the operation are considered in reference to the operative mortality and to the influence exercised on the disease. The author performed twenty-six of these operations (one of the twenty-five cases being operated on twice), with a fatal result in three cases—a mortality-rate of 11·5 per cent. By the addition of two cases operated on by Spiess and Holmgren the mortality is reduced to 10·7 per cent. This compares very favourably with the mortality-rate shown by other methods of operation, which varies from 13·7 per cent. (Cushing) to 37·8 per cent. (Schloffer's method). Of the author's three fatal cases, one died on the twentieth day after operation of meningitis, the patient, who was maniacal, having removed the nasal plug and thus probably caused infection of the wound. The second case died on the eighth day from acute pneumonia, while the third death occurred shortly after the operation from hæmorrhage into the third ventricle, and was thus clearly the direct result of the operation.

In reference to the effect produced by the operation on the disease, the author's records show three cases in which the condition remained unaffected, five in which a temporary improvement (lasting two to six months) took place, and fourteen in which the improvement—very marked in some of them—still persists. The chief benefit consisted of restoration of vision and recovery from mental disturbances.

The outcome of these operations depends on the nature and extent of the tumours and on the power of recovery of the optic tracts and nerves. Cystic tumours and those that are wholly or mainly intra-sellar give the best results.

In the author's opinion resort should be had to operation in all cases of tumour of the pituitary body with progressive visual disturbance, whether the tumour appears, as shown by radiography, to be chiefly intra-sellar or chiefly intra-cranial. The indications are less clear in cases of acromegaly without visual disturbance, but in view of the intra-sellar situation of the tumour in such cases, there should be good prospect of permanent cure, especially if future work shows a further reduction in the operative mortality.

Thomas Guthrie.

Lee, John Robert.—**Cyst of the Pituitary Gland, with Pressure Symptoms: Operation; Recovery.** "Australian Medical Journal," October 26, 1912.

This case is of interest on account of the route followed in the operation for the removal of a cyst of the pituitary gland. It will be evident that such a route might be followed in dealing with certain diseases of the sphenoidal sinus. The patient was a girl, aged ten, suffering from polyuria and symptoms of intra-cranial pressure, *e. g.* headache, vomiting, giddiness, and impairment of vision. Operation: The upper lip was retracted, and an incision about an inch long was made down to the base of the vomer. The muco-periosteum of the vomer and ethmoidal plate was separated by means of very small, then increasing sizes of Hegar's metal dilators. The nasal septum, including the vomer and ethmoidal plate, was nipped out piecemeal. As space was obtained by removal of bits of the septum the dilators were pushed on until gradually the muco-periosteum from both sides of the septum was separated intact.

The whole of the vomer and ethmoid plate was removed until ultimately the basi-sphenoid was reached. A good view of the base of the skull in this region was obtained by keeping the passage open with a long Killian's speculum, the light being thrown in from a forehead mirror. Hæmorrhage was effectively controlled by swilling with pure peroxide of hydrogen. The V-shaped process of the articulation of the vomer with the sphenoid was a guide to the proper locality on sphenoid. An opening with a small trephine into the sphenoidal sinus was continued through its posterior wall into the sella turcica. A cyst cavity containing three drachms of clear fluid was opened into. Through preserving the muco-periosteum of the septum the nasal fossa was not opened into, and the probabilities of sepsis avoided.

A. J. Brady.

EAR.

Jones, Hugh E.—The Operative Treatment of Aural Vertigo due to Causes other than Suppuration. "Liverpool Medico-Chirurgical Journ.," July, 1912.

Ablation of the labyrinth for non-suppurative aural vertigo was first performed by Lake in 1904, and since then not more than about twenty cases have been done. An operation, which differs in having for its object the reduction of tension in the labyrinth by simple opening of the perilymphatic space of the external semi-circular canal with preservation of auditory and vestibular functions, was performed by Jenkins in 1911.

Suitable cases for ablation seem to be those pure labyrinthine cases, in which the vestibular organ still responds to experimental stimulation, and in which recurrent attacks interfere with their duties in otherwise healthy persons, where the hearing is good in one ear and defective in the other, and where falls are likely to be dangerous and the symptoms cause severe mental distress. Unsuitable cases are those in which rapid and complete destruction of the vestibular function has occurred, and also functional and toxic cases and those with lesions of the central nervous system. Aural vertigo, resulting from lesions of the external or middle ears, should be rather treated by attention to these regions. Even in cases of true Ménière's disease, old age, or severe general disease, or an inability to refer the symptoms definitely to one ear, operation is contra-indicated.

Lake obtained his object of complete destruction of the branches of the vestibular nerve by first doing a radical tympano-mastoid operation, and then opening the vestibule both above and below the aqueductus Fallopii.

The author, however, considers this unnecessary. By his method the antrum is first freely opened as in Schwartze's operation until the inner wall is exposed and a good view of the prominence of the external semi-circular canal obtained. This is opened by Lake's chisels, and its outer wall removed forwards into the vestibule. The vestibular cavity is curetted, especially its upper posterior and internal walls with the ampullary openings of the superior and external canals. The posterior limb of the external canal can also be followed backwards and the ampulla of the posterior canal destroyed. The cavity is swabbed out with an antiseptic fluid and the wound closed, being drained until the stitches are removed on the fourth day. The author has operated on four cases by this