

only occurred in the first ear operated upon. In doing the second ear no accident happened, although chromic acid had been applied to the granulations in that ear also.

Abstracts.

PHARYNX.

Dupuy, Homer.—*Acute Affections of the Pharyngeal Tonsil in Early Life.* "New Orleans Medical and Surgical Journal," March, 1906.

The conclusions to which this author comes are that head-colds in early life are generally characterised by an acute inflammation of the pharyngeal tonsil, the nasal phenomena being purely secondary; that profound systemic disturbances may follow acute adenoiditis; that the post-nasal tonsil acts as an avenue of infection for the cervical lymphatic glands; that treatment should be early and active; and that the child's nose and naso-pharynx should receive nearly the same attention bestowed upon its teeth.

Macleod Yearsley.

NOSE AND ACCESSORY SINUSES.

Forstelles, Arthur (Helsingfors).—*On the Resection of the Inferior Turbinal Bone.* "Monats. für Ohrenheilkunde," June, 1905.

The author considers that resection is by far the best method of dealing with hypertrophies of the inferior turbinal. The galvano-cautery, although it has its votaries, is open to many objections, and is by no means so satisfactory.

Various methods of removal by means of snares, cutting forceps, scissors, etc., are described. To overcome the difficulties and unsatisfactory results of these operations, the author has invented a special forceps which he claims will remove the entire turbinal with the soft parts covering it with a single grasp and turn of the hand. The forceps (made by Beus, 54, Alexanderstrasse, Helsingfors) are 18 cm. long, with straight blades $5\frac{1}{2}$ cm. from the lock to the tips. The points of the blades are slightly hollowed out so as to grasp a hypertrophy of the posterior end of the turbinal more securely. After cocainising the nostril, the blades are passed along the inferior and middle meatuses as near the base of the turbinal bone as possible. When the bone is thoroughly grasped with a single twist from left to right and one pull the entire turbinal is removed. Through the crushing of the vessels by the forceps, the bleeding is only nominal in amount. No adrenalin is used; a small piece of sterilised gauze is placed in the nostril for a few hours. After the first day the nostril is gently syringed daily, the patient being kept under observation for a week. The author has operated on 210 cases in the last four years and has had no evil after-effects.

Knowles Renshaw.

Pegler, L. Hemington.—*The Pathology, Affinities, and Treatment of so-called Bleeding Polypus (Discrete Angioma) of the Septum.* "Lancet," November 18 and 25, 1905.

Author's abstract.

Almost every form of nasal tumour, malignant or benign, is liable to

take origin from the septum. One that occurs fairly often is the so-called "bleeding polypus," which is important (1) because it is often an unsuspected source of recurring and profuse epistaxis, dangerous to health; (2) it is liable to be mistaken macro- and microscopically for a malignant neoplasm; (3) it bears an undoubted relationship to more bulky nasal growths, which in turn possess certain characters shared by malignant tumours; (4) it shows an obstinate tendency to recrudescence from its base of attachment unless very radically extirpated.

Nomenclature.—The designation "bleeding polypus of the septum" is adopted by the author for general use in this paper, because it has been accepted more or less universally since it was first introduced by Schade-waldt in 1893. A more technical one, conveying the important attributes of benignity, extreme vascularity, succinctness of growth, as well as varying site within the nose, would be that of "discrete nasal angioma." This is, correctly speaking, an abbreviation of "discrete granulomatous angioma," which term more fully indicates the pathological character of the majority of cases.

Etiology.—The etiology of bleeding polypus is unsettled. Krieg, Siebenmann, and Ribary are amongst the few writers who have addressed themselves seriously to the question. They trace the growth always to an inflammatory foundation, and consider it one of the terminations of an initial rhinitis sicca. Krieg states that in all his cases the tumour arose from a base formed by capillaries proliferating in consequence of inflammation. In the pathological section certain objections to this theory are dealt with. It presupposes a constant seat of growth in Kiesselbach's area of the triangular cartilage, whereas pathologically identical tumours are not uncommon on the alar wall of the vestibule in an otherwise healthy nose. The female sex has been thought to predispose towards its development.

Clinical features, naked-eye appearance.—A bright or dark red, ovoid or roundish body, from a pea to a small hazel-nut in size, lobulated or nearly smooth, more or less mobile or pedunculated, is seen occluding the vestibule, sometimes quite near the orifice. It is often flattened by pressure, and sloughy or ulcerated on the surface; it usually bleeds on the slightest touch.

The seat of election is Kiesselbach's spot on the triangular cartilage of the septum, corresponding to the distribution of Kiesselbach's artery, but it may be attached higher up by a longer pedicle. It seems to show some preference for the left side.

Symptoms.—The first that attracts the patient's attention is nose-bleeding, which occurs spontaneously or on the slightest provocation, and keeps him in a state of constant apprehension. Obstruction gradually supervenes, which often becomes complete.

The tumour develops slowly, but after removal, unless the base is chiselled away or cauterised, it soon reappears, exceeding its original dimensions in from two to three weeks. This is a regeneration of the young sprouting capillaries of the basal tissues, not a true recurrence by virtue of cellular infiltration, characteristic of malignancy.

The clinical diagnosis is not always easy, but is best arrived at by a process of negation; the precise variety cannot be decided until the specimen is examined microscopically. With an appearance such as already described, and a history of hæmorrhage, the diagnosis when close to the orifice of the nostril should not be difficult. Distinction has to be made from lupus, fibroma, papilloma, papilliform mucous hypertrophies, in-

flamed mucous polypi, and sarcoma. The latter rarely, or never, forms a small succinct and pedunculated growth; it is soft, fleshy, and often friable, and if a portion is removed the distal remnant bleeds violently and rapidly exceeds its former mass.

Treatment.—This is effected by the cold snare, slowly drawn up; the base must be energetically cauterised with a flat burner or extirpated with the chisel, and the nasal cavity firmly plugged with iodoform gauze. If recrudescence take place, it must be treated in the same manner. Two or three repetitions of this treatment may be necessary for complete extermination.

Subdivision of types.—Walliczek distinguishes three principal types of bleeding polypus of the septum. These are:

(1) The granuloma type, consisting partly or entirely of granulation-tissue.

(2) The fibromatous or connective-tissue type, in which may be distinguished a loose-textured œdematous fibro-angioma, a firmer, close-textured fibro-angioma, and a close-textured, soft-cell fibro-angioma.

(3) The cavernomatous or purely vascular type, in which the growth is made up of spongy angiomatous tissue. All these types may occur in combination, and the size of the vessels in the fibro-angiomas varies enormously.

Pathological relationship with other benign neoplasms.—The granuloma type is one of the best defined of the three, because some few examples of bleeding polypus are almost pure granulomas. It is the parent type, and as our knowledge of these tumours develops, and of granulation-tissue increases, we shall probably come to regard the other types as merely subsidiary to it.

The tissue met with in the granuloma type coincides in character with that met with in granulomata and granulation-tissue elsewhere in the body.

The endothelium is often spindle-shaped, and the cells that are given off from them—the endothelioid or intercapillary cells—then partake of the same character. A difficulty presents itself as to the correct interpretation of the layer of granulation-tissue that forms the circumferential zone of so many specimens, especially the loose-textured fibro-angiomas. This zone is usually most pronounced in those peripheral areas that are denuded of epithelium, and, in fact, show more or less signs of ulceration. Owing to the fact that no clear line of demarcation can be distinguished between this subplasmatic granulomatous zone and the fibro-angiomatous body of the growth, there is a natural inducement to consider this character as indicating the granulomatous type; nevertheless there are reasons for considering this zone as largely adventitious. The chief argument for this assumption is the fact that certain specimens exhibit clear evidence of the invasion of micro-organisms, which, passing through the intact epithelial border, excite inflammatory action in the tissues and cause to be thrown off an abundance of plasma, or exudate, with consequent destruction of the squamous epithelium. In favourable specimens, not only can this destruction and absorption of the epithelium by the polymorphonuclear leucocytes that pervade the exudate be seen in process, but the micrococci themselves are manifest in the body of the phagocytes.

The effect of this destruction and partial ulceration of the surface, which then has a sloughy appearance to the naked eye, is a proneness to violent and repeated hæmorrhages, which constitutes the chief danger of these little tumours.

Certain naso-pharyngeal growths, which have clinically been often described as sarcoma, are constituted of tissue which is hardly distinguishable from that met with in the granulosomatous type of bleeding polypus. They are large and bulky, give rise to frightful hæmorrhage during removal, and, being with great difficulty eradicated, rapidly recrudescence, but clinically they are non-malignant. A similar species of granulosomatous angeioma occurs as a tumour formation in the maxillary antrum. Many aural polypi are described by Brühl as angeio-fibromas, their great proneness to hæmorrhage being due to their dilated vessels.

The connective-tissue type of bleeding polypus is related in its looser fibrous and œdematous form to certain other nasal angeiomatous growths, as, for instance, the fibro-angeiomas of the inferior and middle turbinals described by Jurasz, Seifert and Kahn, Schwäger, and others. This type of bleeding polypus bears no kinship to the papillary fibromas of Hopmann or any other variety of mucous hypertrophy; both may occur coincidentally.

The firmer, close-texture variety of the connective-tissue type has many relationships. It has its counterpart in the large and diffuse angeio-fibromas that often extend from the nasal cavities into the antrum and the naso-pharynx.

The soft-cell form of the connective-tissue type, on the other hand, is one that, agreeing closely with the soft fibromas of the laryngeal structures and elsewhere, is often confused with sarcoma, especially the spindle-and oat-cell form. The diffuse nasal angeioma in Roe's original table of cases was possibly related to this or the granuloma type of bleeding polypus. It was said to have become sarcomatous after two removals, but is more likely to have been a hæmangeo-sarcoma from the first. There are good examples of the soft-celled fibromatous angeioma in the table appended to the full paper, in one of which a diagnosis of sarcoma was almost universally made on exhibition of the specimen and a truly radical operation recommended for its extirpation.

The cavernous or telangiectatic type of bleeding polypus comes nearest to the true nævi or angeiomata of the skin, larynx, and elsewhere, but a careful examination into the recorded cases of what has been described so far as pulsating angeioma of the nasal septum in this country is inimical to the belief that the latter have exhibited no true distinctive characters from one or other of the three types of bleeding polypus here described. Telangiectasis of the mucous membrane of the septum occurs in conjunction with a similar condition of the skin of the face and elsewhere, just as nævoid patches may take origin from the wall of the pharynx and the glottis, but such septal growths are not bleeding polypi. Dr. Brown Kelly and Professor Osler have together published the notes of five of these cases of multiple telangiectasis of the septum and skin. Verneuil's case of septal angeioma quoted by Morell Mackenzie was probably a true angeioma of this kind, but there is no pathological report. All the three types above described are represented in the angeiomatous tumours of the larynx. A resemblance is sometimes indicated between the structure of the cavernous growths of the respiratory tract and cavernous angeioma of the liver, but a more correct analogy is found in some angeiomas of the skin.

Whether any of the bleeding polypus cases described can be certainly classed as lymphangeioma seems doubtful; Krieg describes a lymph-angeioma of the septum, and others have distinguished a venous form.

The question of affinity with malignant growths.—From the clinical

point of view with two exceptions the author is not aware of bleeding polypus being compared macroscopically to sarcoma or other malignant growth; the responsibility of this association has always rested with the pathological report, yet in no case has the latter been supported by clinical facts. In one case that presented a suspicious appearance on objective examination the growth turned out to be a pure granuloma and was not truly angeiomatous. It had elevated the external wall of the nose and deflected the septum, but after a piece had been removed for examination it shrunk and disappeared.

Another case was described in the clinical report as resembling sarcoma, but any bleeding polypus having a sloughy patch on the surface is liable to be so regarded. In none of the cases in which the pathologist reported sarcomatous elements has there been the slightest evidence of clinical malignancy or true malignant recurrence by virtue of genuine infiltration of the basal tissues. But the author feels still further compelled to question the correctness of the pathological reports themselves when sarcomatous tissue has been described as occurring in a discrete angeiomatous septal tumour with an innocent clinical history, though the literature of the subject yields no lack of such examples. Baumgarten reported a case as partly myxoma, partly myxosarcoma, Polynaek a case of angeiosarcoma displaying large and small blood-spaces, the intermediate substance showing characteristic sarcoma formation. Dausac found in one specimen sarcoma telangiectodes and in another endothelial angeiosarcoma. Sendziak recorded a case to which on the strength of the pathological report alone he attached the ambiguous title of "angeioma cavernosum sarcomatodes." In the full paper this report is quoted verbatim because it has influenced subsequent writers after the lapse of a whole decade and given effect to Roth's remark, that "amongst published cases of bleeding polypus of the septum there are either malignant tumours or at least some suspected as such," also the statement by another writer, that "sarcoma constitutes one of the forms of bleeding polypus of the septum." Nevertheless a careful scrutiny of Sendziak's description points to the belief that his specimen tallied very well with an average case of bleeding polypus of the septum, the peculiar grouping and crowding of the endothelioid cells giving rise to the suspicion of sarcoma. Norval H. Pearce's case coincides extremely closely with Sendziak's, and yet Pearce, while recognising the difficulty of interpreting the peculiar phases of granulation-tissue as occurring in these little tumours, guards himself against the common error and states that his diagnosis was "neither sarcoma nor angeioma but telangiectoma."

One must not, however, criticise these opinions too harshly, for in cases nearer home a diagnosis of sarcoma, angeiosarcoma, and perivascular endothelioma or perithelioma have respectively been made. Even Roth, the most recent author upon the subject, considered that his case (reported in 1904) agreed most with what Paltauf designates angeiosarcoma, but it is questionable from the description whether Paltauf implies anything more by this term than an atypical and non-malignant angeioma; and it is well to bear in mind in this connection that the Germans employ certain terms, such as epithelioma and endothelioma, in a *quasi*-anatomical sense without attaching the pathological signification that we do. The author, however, is not in want of support in contesting the accuracy of these diagnoses of malignancy. Langerhans, in reporting upon Schadowaldt's cases, states that "the absence of all cells which might direct suspicion to sarcoma proves that it is a non-malignant

formation," and Walliczek writes that "in spite of the manifold combinations that occur between the three types, these tumours are always benign." Heymann says many of the pedunculated tumours of the septum, described as myxosarcoma, belong to the bleeding polypus group, and stand much nearer to granulation tumours than to true sarcoma.

The question of affinity to malignant growths viewed chiefly from the microscopical aspect.—The difficulty and the source of so much diversity of opinion is due to regarding too narrowly, and attaching too much pathological importance to, the cell-proliferation that is thrown off in an outward direction from the endothelium of the capillaries and small blood-channels in bleeding polypus. This multiplication of cells might be described as a harmless mimicry of the destructive process, to which succeeds rapid infiltration and metastasis in endothelioma. This latter is a genus of morbid growth, in a general way malignant, which is being gradually classified apart from the angeio-sarcomata with which they were formerly identified, and from certain carcinomata, from which they are sometimes distinguished with difficulty. They are now being subdivided again into peritheliomata and entheliomata, the term "enthelioima" having been recently introduced by Dr. Lazarus-Barlow, who is especially working out this branch of pathology. As the words imply, the distinction depends upon whether the cell-proliferation process is directed away from, or towards, the lumen of the lymph- or blood-vessel, thereby either creating a cell-mantle around the channel or blocking it up by cell-growth within. In very many cases the two processes are coincident, so that Dr. Lazarus-Barlow now labels a number of his endotheliomas as peri- and enthelioima, or, in accordance with a suggestion of the author, "perienthelioima." Although extra-vascular cell proliferation, giving rise to equivocal appearances, is a common feature in bleeding polypus, the converse, viz. intra-vascular proliferation, is much less easy to demonstrate.

Many large channels show a tendency to encroachment of their lumen by fibro-cellular ingrowths; and the capillaries, especially in the close-textured soft-cell angeio-fibromas, are rich in crowded and perhaps enlarged endothelial cells, but a true parallel with the choking up of the lumen, as seen in enthelioima, is wanting. It is necessary to look away from these limited and isolated areas, and take a more general view; one then sees an evident distinction between the cellulo-capillary clusters of a bleeding polypus and the cell-masses of sarcoma or endothelioma. The malignant proliferation in the latter causes a rapid extension of the confines of the tumour and true infiltration of its base. The cells themselves are palpably larger than the endothelioid cell, which, whether of endothelial parentage or otherwise, and whether oval or fusiform, retains the characters of the connective-tissue type, and can at worst be regarded as no more than an endothelial cell under changed conditions and entourage. It is also to be noted in the innocent cell clusters of bleeding polypus how differently the cells are disposed towards each other from those in the malignant growth. They are not placed in rows of five, six, or more abreast, flat-wise, arranged as in a mosaic, but heterogeneously—a strange order in disorder, so to speak, the density of the cluster being much enhanced by the interspersion of leucocytes. Furthermore, their large, darkly-stained nuclei are usually clearly differentiated from the cell-body, which in the endothelioid cell is not the case. These few points of contrast will be found of value whenever a difficulty arises in microscopical diagnosis.

General pathological considerations.—The pathology of bleeding poly-

pus of the septum has excited so much interest on account of its strange diversity of histological detail and its remarkable affinities to other morbid growths of great surgical importance. In this connection the question arises whether a pathological entity can be formulated under the title in common use, or does the term comprehend a congeries or group of little tumours not closely enough related morphologically? The answer has so far come to be almost universally settled in favour of the former proposition. Hasslauer, in his most important paper on "Benign Neoplasms of the Septum" (*Archiv für Laryngologie*, 1900), devotes a separate heading to bleeding polypus, enumerating in his table fifty-five cases, and the general total of recorded cases at the present time reaches at least between eighty and one hundred. The author's paper gives many examples of the lengthy designations adopted by different authors to indicate the predominance of angeiomatous structure; nevertheless some writers continue to deny to bleeding polypus of the septum a special place in rhinology on the plea of its essentially granulomatous structure. How far this opinion is justified can only be decided by studying the cases that come under observation in their earliest stage. The genesis of bleeding polypus, as of other tumour formations, is involved in speculation, but a knowledge of granulation-tissue in its various forms is the principal key to the elucidation of this particular growth, and accordingly the angeiomatous structure of its several types finds its analogue in one form or other of granulation-tissue in distant regions. Hence it may be true that in bleeding polypus we have no more than a remarkable development of granulation-tissue, varied histologically within limitations by unknown causes, but probably influenced, like certain neoplasms of the same locality, by the peculiar character of the septal mucosa or the adjoining muco-cutaneous lining from which it takes origin. Should this be correct, the complete absence of any history of local traumatism or irritation in so many cases and the healthy condition of the surrounding mucosa is somewhat difficult to reconcile with such a purely inflammatory origin. Another problem as yet unsolved, whatever be the exciting cause of the basal capillary proliferation, is concerned with the factor determining which form of angeiomatous change is to characterise the vessels of the commencing outgrowth, spongy, cavernous, or fibro-angeiomatous, or whether it shall attain to maturity as a pure granuloma and nothing more. The significant fact remains, however, as the table shows, that, whether as a result of secondary bacterial invasion or other cause, a submarginal zone of granulation-tissue was discernible in ten or twelve out of fourteen angeiomatous tumours.

The resemblance of certain granulation tissue tumours, microscopically, to small round-cell sarcoma is common knowledge, but with reference to bleeding polypus there need be no confusion on this head. Round-cell sarcoma of the septum is as characteristic in appearance under the microscope as the most typical example of the same disease elsewhere in the body, and though it does not form secondary metastatic deposits nor affect the glands, it shows an inveterate tendency to true and rapid local recurrence, which is never the case with bleeding polypus of the septum.

Analysis of the table.—Of the 16 cases 9 were females and 7 males; the oldest was seventy, the youngest seventeen. In the 13 cases in which a history was recorded epistaxis was a more or less urgent symptom. In only 2 was there a history of traumatism, and in 1 of these the injury, if any, was due to pugilism. In 11 cases the growth appeared on the left side, in 4 on the right, in 1 not stated. Three arose from the floor

or alar wall of the vestibule, the remainder on the septum, about 10 of these being in Kiesselbach's area. In 1 only was there external deformity, viz. in a rather large granuloma. The largest number of recurrences was 3; cure resulted in every case.

Pathologically 2 were granulomata, more or less purely. Three were soft-cell fibro-angiomas of close texture, 2 were large-channelled fibro-angiomas, 1 was a spongy small-channelled angioma. Three were loose-textured fibroangiomas, 1 a large-channelled loose-textured fibro-angioma, 1 a small-channelled variety of cavernous fibro-angioma; 3 were granulomatous fibro-angiomas, 1 being loose- and 2 close-textured, and a granulomatous submarginal zone was to be found in 12 out of the 14 fibro-angiomas.

Menzel, K. M. (Vienna).—*The Symptoms of Empyema of the Maxillary Antrum.* "Monats. für Ohrenheilkunde," June, 1905.

The author draws attention to the periodicity of the symptoms of purulent inflammation of the antrum. The headache generally appears between 9 and 11 a.m., and remains until between 2 and 4 p.m. The evening and night are usually free from pain. The amount of pus discharged varies in the same way as the headache, being much greater during the morning hours. When, as often occurs in chronic empyema of the antrum of Highmore, the pus is fetid, the odour is strongest during the period of freest discharge. The author gives details of typical cases. He is of opinion that there is an increased inflammation of the mucous membrane during the morning hours, and in consequence there is pain due to pressure and an increased discharge. *Knowles Renshaw.*

Foster, E. E.—*Description of Killian's Frontal Sinus Operation.* "Boston Med. and Surg. Journ.," January 25, 1906.

The author tabulates external ways of reaching frontal sinus. The essentials of a good operation should be: (1) A free exposure of the sinus for examination and removal of diseased areas; (2) the removal of the anterior ethmoid cells, as they are nearly always associatedly diseased; (3) the provision of a large opening for drainage, preferably into the nasal cavity; (4) freedom from danger, production of minimum disfigurement, and short after-treatment. Killian's operation alone covers these essentials with sufficient completeness. Foster does not think, however, that Killian's operation is thoroughly understood. He gives its indications and carefully and fully describes it. *Macleod Yearsley.*

LARYNX.

King, Gordon.—*A Lymphoid Tumour of the Larynx removed by Partial Laryngectomy.* "New Orleans Med. and Surg. Journ.," January, 1906.

Male, aged sixty-five. A succession of colds for two years had left him with hoarseness and dyspnoea. A low tracheotomy under cocain was followed ten days later by partial laryngectomy. Tumour proved, on microscopical examination, to be of lymphoid structure.

Macleod Yearsley.

Green, D. Crosby.—*A Study of the Larynx in Tabes.* "Boston Med. and Surg. Journ.," January 25, 1906.

The author reports on sixty cases with reference to—(1) the pro-