

attributed the occasional resistance of abscess to treatment. These cysts this author believes to be quite common, and that they are the explanation of many of the enlargements encountered. Their origin he locates in morbid changes of the mucous glands.*

A cystoma, meningocele, of grave nature—a self-explaining cyst of an entirely different nature from any referred to—is shown in Fig. 581. The tumor expresses a congenital deficiency in the occipital bone, and exists in a protrusion of the meninges of the brain. An operation being rendered necessary in this special case shown by reason of rapid increase in the size of the cyst, attempt was made by the author to strangulate at the pedicle by means of subcutaneous ligation. No shock or immediate ill result attended the accom-

FIG. 581.



Meningocele.—From a patient in the author's clinic.

plishment, but on the fourth day coma gradually came on, in which condition the child died three days later, without, apparently, having experienced a pain. Age of babe, ten months.

Very lately a patient presented himself to the writer having an immense cystiform enlargement of the lower jaw. The tumor was quite the size of a fetal head. Examination revealed an aneurism.

Fig. 569 exhibits the external appearance of an osteo-enchondroma operated upon at the Hospital of Oral Surgery. Fig. 570 shows the cyst uncovered. In this case the trouble

originated about the roots of certain diseased posterior teeth. The tumor is, of course, classifiable with the cystomata. It belonged to the self-explaining growths, although obscure until exposed by operation. Treatment consisted in removing the vault and scraping out the floor. Recovery was rapid.

Hydatid Cysts.—A tumor occupying the extreme end of the self-explaining growths is found in the hydatid cystoma. Here the origin, not being in a perversion peculiar to a part, is not without confusion in the way of diagnosis. The tumor is to be placed, however, in remarking the absence of all signs which relate it with common vice expression, and in observing that, unlike cancer, there is no disposition to invade neighboring parts. Local diagnostic signs lie in a peculiar resiliency and in the not infrequent presence of a fremitus. The treatment of a hydatid cystoma is by radical removal with the knife, otherwise by absorbable parasitocides or by injection of like agents.

* Recherches sur les Kystes muqueux du Sinus maxillaire.

CHAPTER LXIV.

THE TUMORS OF THE MOUTH.

NON-EXPLAINABLE TUMORS.

The Neoplasms.—Assuming the student as now appreciative of the principle on which all tumors belonging to the first division of our classification are diagnosable, we pass to those of the second.

As all lesions of the first class have their meaning in derangements purely local, after a like signification all growths of the second division are found of constitutional import. That is to say, repeating the basal principle of the arrangement. There are two kinds of tumors; only two kinds: 1, tumors arising out of local causes; 2, tumors arising out of constitutional causes.

There is one constitutional cause of tumors that is an arcanum. Besides this one there are other constitutional causes of tumors. These others, however, are understandable and appreciable; examples lie in the manifestations of syphilis, of scrofulosis, of scorbutus, of gout.

Accepting a tumor to be of constitutional import, diagnosis proceeds on the ground of getting accurate conception of the lesion through a process of exclusion. 1. In what systemic vice does the condition exist? 2. No appreciable vice existing, the growth pertains to the arcanum. The arcanum is carcinoma.

We pass to the study of carcinoma.

Every tumor is a cancer that is not something else. Learning and experience are capable of distinguishing the "something else."

Another aspect of diagnosis relates with treatment. All self-explainable tumors, whether of local or of systemic signification, possess in themselves the meaning and manner of cure; all such tumors are treatable on a purely scientific basis; cause is understood, cause is managed.

Unexplainable tumors are treatable alone mechanically; nothing being appreciated as to cause, medicine is not to be rendered applicable. To let such tumors alone, otherwise to cut them away, is all that surgery has yet learned.

Clinically: Tumors which are of a common manner of treatment belong under a common head:—Deduction: Fibroma and encephaloma having a single and common manner of treatment are—as treatment at least is concerned—identical.

Histologically: Tumors found to run into each other, no absolute line of

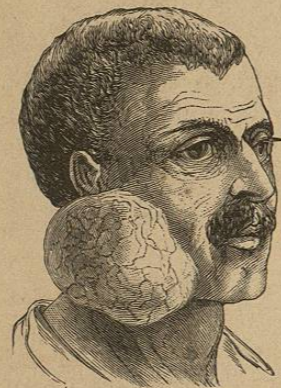
demarkation existing between the extremes, are to be classed under a common head. Simple fibroma cannot be demarked, as extremes are concerned, from recurring fibroma. Recurring fibroma cannot be demarked from sarcoma. Sarcoma cannot be demarked from encephaloma. Deduction: The most simple of fibromata differ from the most complex of encephalomata alone in features of expression. The family is a common one. The reader interested in the subject will wisely at this point observe and study closely the diagrams introduced illustrative of distinctions in the neoplasms as taught by the microscopist, but he is to hold in his mind the differences which exist between histological and clinical definitions.

In a record of 307 cases of tumors of the jaws made by Professor C. Weber, the histological varieties noted are as follows: Carcinoma, 133; sarcoma, 84; osteoma, 32; cystoma, 20; fibroma, 17; enchondroma, 8; gelatinoid polyps, 7; melanotic sarcoma and carcinoma, 5; angioma, 1.

Upon such a record it would seem that in all solidity a classification might be founded. This indirectly we may receive; directly, however, it is not a matter that concerns us. Our classification recognizes, as is understood, but a single condition,—a condition of many expressions, these expressions being accorded the title of *the destructive disease*. Indirectly, however, we must accept a histological classification, as thus with most convenience we find data

for a study, the understanding of which is of great service, and certainly of large interest.

First. Fibrous Tumors—Fibroma.—The study of the fibromata begins with—1. A tumor, the most common seat of which, as the whole body is concerned, is, beyond comparison, about the jaws. These tumors, which to the eye are composed of firm, interlaced fibrous tissue, are, to the touch, hard, yet to an extent elastic. Such growths spring from the periosteal tissue, and find a favorite location in the antrum. When unmoulded, as where springing from a free surface, they are superficially lobed, and, as a rule, are ovoid in form; when occupying the sinus, they conform very much to the shape of the cavity, and are apt to retain the bony



Fibrous tumor over parotid gland.

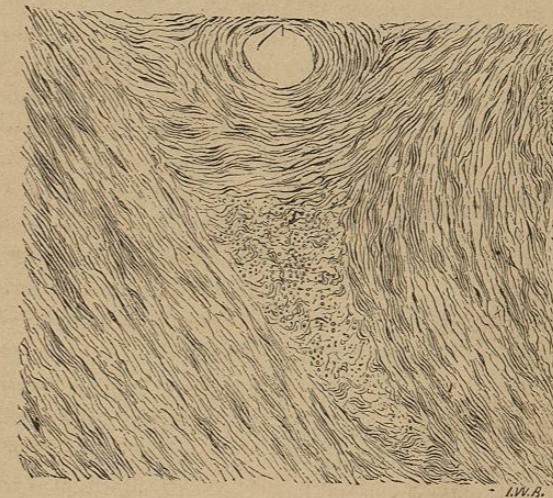
covering until they attain a size many times greater than the site from which they originate. In color, these tumors are a faintly yellowish white, pure white, or a very pale red; in arrangement, the fibres are concentrically related, affording an expression of focalizing, as if growing towards, rather than from, a centre.

The diagnosis of this form of the fibromata lies in the isolation of the growth; in its elastic hardness; in the perfectly healthy and non-implicated appearance of the associate parts; in the absence of pain; and in the tardy

growth. Such a tumor is to be removed with reasonable assurance of its non-return.

2. A second form of the fibromata is found in such close alliance with the first that no one might doubt the intimate relationship of the two, differing really alone in the presence of a looser stroma, being what Rindfleisch, in his classification, would term "a connective-tissue tumor." This tumor, or rather this expression of a common tumor, has not the same concentric development, seeming, in this respect, to be less resisted by the neighboring parts; it does not infiltrate, yet is of eccentric rather than of concentric growth; or, if not this, then the fibrous relation is irregular. This is the first expression of the fibro-plastic tumor of Lebert. It differs from that shown in Fig. 582 simply

FIG. 583.



Microscopic appearance of fibroma.

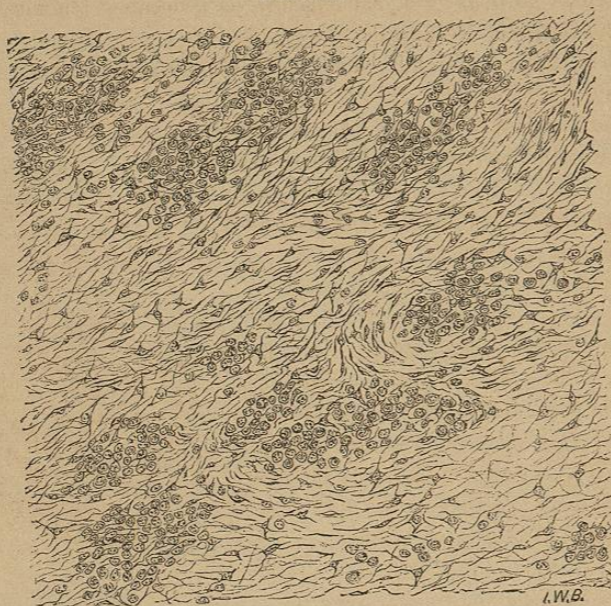
in possessing a freer amount of cellular tissue; advancing after such expression toward the myomata.

3. THE MYOMATA OF VIRCHOW.—Advancing one step farther in the appreciation of the fibromata, we meet with those spindle-shaped cells, which induced Virchow to give to the expression the name of myoma, and which, when possessed of more marked characteristics, constitute the fibro-sarcoma of Rokitsansky. This is truly the fibro-recurring tumor, an expression of which Mr. Miller speaks—see his "Principles of Surgery"—"as of a tumor ill defined, one which it may be doubted if it be not more properly classed when placed among the malignant condition, seeing it is found prone to return, after excision, with singular obstinacy."

The eccentric fibrous tumor—fibro-plastic, fibro-recurring, myoma, fibro-sarcoma—presents alterations of structure, from which, at a point of some confusion, it passes into classification as sarcoma.

Second. Sarcoma.—The sarcomata are so called from presenting on section a fleshy look. A sarcoma is what Billroth designates "a tumor con-

FIG. 584.



Microscopic appearance of fibro-recurring tumor.

sisting of tissue belonging to the developmental series of connective-tissue substances (connective tissue, cartilage, bone, muscles, and nerves), which, as a rule, does not go on to the formation of a perfect structure, but to peculiar degenerations of the developmental forms;" in other words, it is an expression of imperfect fibroma. Rindfleisch distinguishes the sarcomata into "the round-celled sarcoma, the spindle-celled sarcoma, and the fibroma."* These

* The granulation-like round-celled sarcoma (sarcoma globo-cellulare simplex) in its textural and structural relations is allied to the model of the tissue of granulations. To the naked eye, a yellowish or reddish, thoroughly homogeneous, elastically soft mass, at times extraordinarily like the roe of fishes, presents itself from the cut surface; by scraping with a knife-blade, we can obtain a scanty amount of juice, which is almost entirely clear, or contains but few cells. The cells are small, round, and possess comparatively large nuclei, of sharp contour, and provided with nucleoli. The protoplasm, as a rule, is present only in small amount, therewith entirely naked; we must have recourse to hardening the tumor and coloring it with carmine, in order to make it generally distinct, and to convince ourselves that a cell-body actually belongs to each of the apparently free nuclei.

The structure of round-celled sarcoma deviates only in a quantitative relation from the structure of granulations. The vessels in part are wider, thicker walled; where these, however, break up into capillaries, they are just as delicate, frequently only built of a simple cell-layer, such as we saw in the vessels of granulations. The interspaces between the vessels are everywhere uniformly filled by the round cells and the scanty, soft, and

tumors grow to an immense size. Fig. 585 shows a not infrequent clinical expression of the disease.

Tumors denominated in this chapter neoplasms, are coming to be commonly accepted as conditions expressive of arrest in development, a conclusion which is no doubt just enough, but yet it does not touch the cause in which the arrest has its meaning.

Another expression of this tumor is that classified and described by Mr. Paget as the myeloid,—so called from its resemblance to marrow,—an expression so lacking in persistent individuality that, even according to the classifier himself, the features vary from simple semi-fibrous, semi-marrow-like structure to those so heteroclitic that they "seem to merge into the medullary." A myeloid, as suggested by the English surgeon, like a fibrous tumor, may be either inclosed in a bone whose walls are expanded round it, or more rarely, it is closely set upon the surface of a bone confused with its periosteum. The sketches of fibromata pictured in the "Surgery" of that author are readily to be received as illustrative of myeloid.

These two kinds of growths are equally common to superior and inferior jaws.

A myeloid inclosed in bone affords a tumor ovoid in shape, well defined, not infrequently invested with a distinct capsule. Situated externally it is apt to be lobulated and of irregular roundish form. Mr. Paget describes the growths as feeling like uniformly compact masses, but in different instances variously consistent. The most characteristic examples are firm, and (if by the name we may imply such a character as that of the muscular substance of a mammalian heart) they may be called fleshy. Others are softer, in several gradations, to the consistence of size gelatin, or to that of a section of granulations. Even the firmer are brittle, easily crushed or broken; they are not tough, nor very elastic, like the ordinary fibro-cellular or fibrous tumors, neither are they grumous nor pulpy, neither do they show a fibrous nor granular structure on their cut or broken surfaces; these tumors are smooth, uniform, compact, shining, succulent, with a yellowish, not a creamy fluid. A peculiar appearance is given commonly to them by the cut surface presenting blotches of dark or livid crimson, or of a brownish or a brighter blood color, or of a pale pink, or of all these tints mingled on the grayish-white or greenish

formless basis-substance of the germinal tissue. In rare cases one observes a higher organization of the whole, which reminds of the papillosities of granulations, namely, a radiated striation and a decided disposition of the mass of the tumor for cleaving in radiating directions.

FIG. 585.



A clinical expression of sarcoma.

basis-color. (In a foot-note, Mr. Paget quotes from Lebert, who says the greenish-yellow color they may show depends on a peculiar fat, xanthose.) The tumors may all be pale, or have only few points of ruddy blotching, or the cut surface may be nearly all suffused, or even the whole substance may have a dull modena or crimson tinge, like the ruddy color of a heart, or that of the parenchyma of a spleen. Many of what have been named spleen-like tumors of the jaws are of this kind. The color they present is not due merely to blood in them; some of it is appropriate to their texture, as is that of the spleen or that of granulations, and it may be quickly and completely bleached with alcohol.

The following are the histological appearances pronounced peculiar to the myeloid growth, being imitated in no other morbid structure:

FIG. 586.



Microscopic appearance of myeloid,—i.e., of sarcoma.

1. Cells of oval, lanceolate, or angular shape, or elongated and attenuated like fibre-cells, or caudate cells, having dimly-dotted contents, with a single nucleus and nucleolus.

2. Free nuclei, such as may have escaped from the cells, and, among these, some that appear enlarged and elliptical, or variously angular, or are elongated

toward the same shapes as the lanceolate and caudate cells, and seem as if they were assuming the character of cells.

3. The most peculiar form: large, round, oval, or flask-shaped, or irregular cells or cell-like masses, or thin disks of clear or dimly-granular substance, measuring from one three-hundredths to one-thousandth of an inch in diameter, and containing two to ten or more oval, clear, and nucleated nuclei.

Corpuscles such as these, irregularly and in diverse proportions embedded in a dimly-granular substance, make up the mass of a myeloid tumor. They may be mingled with molecular matter, or the mass they compose may be traversed with filaments or with bundles of fibro-cellular tissue and blood-vessels, but their essential features (and especially those of the many-nucleated corpuscles) are rarely observed.

Many varieties of aspect (as remarked by Mr. Paget in his histological studies) may thus be observed in myeloid tumors, and beyond these they may even be so changed that the microscope is essential to their diagnosis. After they partially ossify, well-formed cancellous bone being developed in them, cysts, also filled with bloody or serous fluids, are to be found occupying much of their volume, or even almost excluding the solid texture.

This author notes a case in which he amputated the leg of a woman, twenty-four years old, for what was supposed to be a cancerous tumor growing within the head of the tibia. She had pain in the part for eighteen months, and increasing swelling for ten months, and it was plain that the bone was expanded and wasted around some soft growth within.

On section, after removal, the head of the tibia, including its articular face, appeared expanded into a rounded cyst or sac about three and a half inches in diameter, the walls of which were formed by its flexible bone and periosteum, and by the articular cartilages above; within there was little more than a few bands or columns of bone, among a disorderly collection of cysts filled with blood, or blood-colored serous fluids. The walls of most of the cysts were thin and pellucid; those of others were thicker, soft, and brownish-yellow, like the substance of some medullary cancers, a likeness to which was yet more marked in a small solid portion of tumor, which, though very firm, and looking fibrous, was pure white and brain-like.

No one, Mr. Paget says, who examined this disease with the naked eye alone, felt any doubt that it was an example of medullary cancer, with cysts abundantly formed in it. But, on minute investigation, none but the elements of the myeloid tumors could be discovered; these, copiously embedded in a dimly-granular substance, appeared to form the substance of the cyst-walls, and of whatever solid material existed between them. The white brain-like mass was apparently composed of similar elements in a state of advanced fatty degeneration, but neither in it nor in any other part could be found a semblance of cancer-cell.

No mention is made of the return of the disease; it would seem that, in the present state of our knowledge of cancer-growths, it would have been no

difficult matter to class such a tumor with the malignant. Not consuming time in a discussion of the subject, it is evident that even so able an observer was not at all clear with his case. *There is no special cancer-cell.*

An epitome of the myeloid may thus be presented:

They are a class of fleshy tumors called by M. Lebert fibro-plastic, because, he says, they are made up of fibre-cells. They are called myeloid by Mr. Paget, because he thinks they resemble marrow much more than they do fibrous tissue.

In character, they vary from simple semi-fibrous, semi-marrow-like structures to those so heteroclitic that they seem to merge into the medullary.

Their favorite seat seems to be about the bones, either intra or extra, being perhaps more common to the maxillæ than to any other of the ossa-corporæ.

They are growths which usually occur singly; they are most frequent in youth, and very rare after middle age; they generally grow slowly and without pain, and usually commence without any known cause, such as injury or hereditary disposition.

According to Mr. Paget's observations, they rarely, except in portions, become osseous; they have no proneness to ulcerate or protrude; they seem to bear even considerable injury without becoming exuberant; they may shrink or cease to grow; they are not apt to recur after complete removal, nor have they in general any features of malignant disease. These observations as they relate to non-return of the disease after ablation of the tumor are the reverse of the writer's experience.

Since penning the above the author has accidentally fallen on a classification of the tumors of the upper jaw, made by Mr. Hancock. After alluding to various classes, he says, "In addition to these, Mr. Paget adds what he terms myeloid tumors of the part; but while the examples he quotes resemble on the one hand so much the fibrous, on the other the medullary tumors, their true character, whether innocent or malignant, is so very doubtful that I should hesitate in admitting them as a distinct class."

Epitome.—Fibrous tumors proper, and the fibro-plastic, have general features in common,—that is, they belong to the expression of sarcomatous growth; but then in a histological sense they have such differences that an epitome, at least, of their history should be reviewed by us.

In some instances, fibrous tumors are seen under the microscope to have a concentric development: this species is slowest of growth, is least malignant, never attaining any great size.

In another species the fibres interlace in a most complicated and irregular manner. This kind attains the largest size, and strides toward the heteroclitic.

A third class consists of an aggregate of nodules, and is compared by Dr. Humphrey to a conglomerate gland; the tumor being made up of small masses closely compressed, having an uneven, knotty outline.

Fibrous tumors affecting the bones (Braithwaite) are usually found upon

those of a spongy nature, upon the ends of the long bones, the phalanges, pelvis, and in the jaws. So far, says the author, as I have met with them, they are confined to the exterior of the lower jaw, growing from the periosteum and creeping along the surface of the bone in such a manner as to prove almost to a certainty that they originate in some morbid condition of the periosteal fibres. The bone underneath these tumors may suffer absorption in consequence of the pressure produced, but does not seem to be affected in any other way. The growths appear upon the maxillary bone more frequently than upon any other part of the skeleton. On the lower jaw they spread along the ramus, encircling it beneath and on the sides, so that the bone is almost concealed by the tumor. In some instances they form within the substance of the jaw, probably from the alveolo-dental membrane, and as they increase, the walls of the bone become spread out over them. They grow up around the teeth, and when they project into the mouth may be soft and fungous.*

In some instances the fibrous tumors of the jaws exhibit a semi-cartilaginous structure, and now and then fibres or plates of bone are formed in various parts of them. The progress of the disease is well illustrated by a series of maxillary tumors in the College of Surgeons, London, from the museum of the late Mr. Liston. These preparations serve to show how necessary it is to bear in mind the mode of growth of periosteal fibrous tumors of the jaws, because from their disposition to creep along the surface of the bone, whether it be an endosteum or periosteum, they are liable to return after removal, unless the immediately adjacent as well as affected parts be excised. The histories attached to the specimens teach that very large fibrous tumors, both of the upper and lower maxillæ, together with the bones on which, or in which, they grow, may be successfully removed.

A cysto-sarcoma, as implied by the prefix, is a tumor of only semi-solidity, its interior, or stroma, being made up of cysts and fleshy substance. These cysts are original formations, and not of secondary character,—that is, they are not the result of molecular disintegration. They are lined sacs, having a distinct secretory membrane. Miller describes the contents as widely differing, which difference every surgeon must have observed: They are more or less fluid, as noted by him, sometimes a clear gluey liquid, sometimes a gelatinous, pale mass of semi-solid consistence, elastic, and projecting beyond the level of the cut cyst on a section being made; sometimes a solid, consisting of a fibrous deposit, organized very imperfectly, if at all; sometimes of a pulpy consistence, as in many encysted tumors; sometimes, but more rarely, a dark fluid, like printers' ink, is contained; sometimes blood is mingled with the contents, either in the solid or in the coagulated form.

The very nearest approach made by cysto-sarcoma to the self-explainable

* Presenting this phase, the tumor may be classed with the epulic, but it will be seen that on this account there need be no confusion. An epulic tumor may be sarcomatous.