

FIG. 40.—Papillary Adeno-Cystoma of Ovary.  $\times 10$  diameters.

coma, and has grown into the ducts of the gland as papillary projections. These are covered by the lining epithelium, which they push ahead of them in their growth, and which increases in consequence; but this is only secondary, and these tumors should be considered as connective-tissue formations.

A diffuse enlargement of the breast due to uniform increase in the glandular elements has occasionally been described under the name of diffuse adenoma. This condition is bilateral, usually occurs about the time of puberty, and, strictly speaking, is a hyperplasia and not a new growth.

The true adenoma is unilateral, definitely circumscribed, and encapsulated. It usually occurs in young women, starting as small nodes in the upper or outer quadrant of the gland. It becomes round or oval in shape and sometimes grows to considerable size, though usually small. On section it is uniformly smooth, grayish white, and quite firm, though occasionally it is soft and slightly nodular.

Histologically, it may be composed of acini or of ducts lined by cylindrical epithelium. The stroma is fibrous and varies greatly in character and amount, but is looser and more cellular than that of the normal gland. According to the character of the interglandular tissue, it may be an adenofibroma, adeno-myxoma, adeno-sarcoma, etc.

Adeno-carcinoma is generally considered to be an unusual

form of breast tumor. Halsted (1898), however, reports five occurring in a series of one hundred and fifty breast cancers. According to Halsted's observations, these growths differ from ordinary cancer of the breast in that they are softer, more pedunculated, and discharge a peculiar serous fluid when ulcerated. Histologically, they are composed of very large tubes lined by epithelium many layers deep. In three of Halsted's cases the growth was pure adenoma (malignant adenoma); in the others carcinomatous areas were present. Metastases in the axillary lymph nodes were found in none.

Ovary.—The multilocular cystadenoma is the commonest tumor of the ovary, and the one usually attaining the greatest size. It may be small or it may weigh a hundred pounds or more. It is a benign tumor and never produces metastases. The surface may have no epithelium, or it may have a single layer of flat epithelial cells. The numerous cysts of varying size which make up the mass are lined on their inner surface by a single layer of cylindrical cells, often ciliated. The nuclei are oval and

lium, or it may have a single layer of flat epithelial cells. The numerous cysts of varying size which make up the mass are lined on their inner surface by a single layer of cylindrical cells, often ciliated. The nuclei are oval and

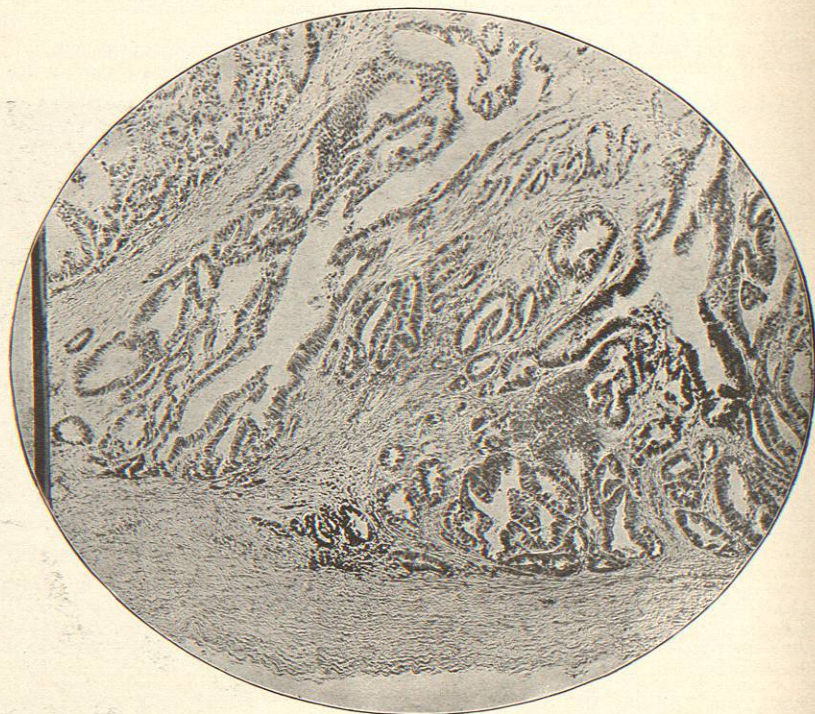


FIG. 41.—Papillary Adeno-Cystoma of Ovary. More strongly magnified than Fig. 40, in order to show cyst wall; papillary ingrowths of connective tissue; epithelium lining papillary projections. As seen in cross section this epithelial structure gives the appearance of a glandular growth.

placed near the basement membrane. Some of the cells may be swollen and filled with clear contents, giving them the appearance of goblet cells. The contained fluid is thick, viscid, sometimes jelly-like, and may be colorless, or, if there has been hemorrhage, yellowish or reddish brown. This fluid is formed by secretion from the epithelial cells, by the transudation of serum from the blood-vessels, and by the degeneration of the epithelial cells. The most important chemical substance in the fluid is pseudomucin, a true secretion of the newly formed epithelial cells. It does not occur in the normal ovary, in dropsical Graafian follicles, or in the parovarium.

Calcification or necrosis of the cyst wall may occur as secondary changes. Both are unusual.

The papilliferous adeno-cystoma is characterized by an ingrowth into the cyst of a papilliferous connective tissue covered with epithelium. On cross section the appearance is that of gland tubules. The papillary growths may be prominent, or they may appear simply as flat excrescences on the surface of the cysts. The epithelium is similar in character to that in the multilocular adeno-cystomata. This tumor is not malignant in the ordinary sense; but after rupture of the cysts a local growth on the neighboring peritoneum may occur.

These growths are supposed to originate from the epithelium of mature or residual embryonic follicles or from the germinal epithelium of the ovary. Pflüger has pointed out the glandular structure of the ovary, and Spiegelberg and Langhans have shown in the ovary, even after birth, residues of its embryonic glandular structure. Doran, as a result of his investigations, believed that the tumor might originate in childhood or even in the intrauterine period. Williams states that the papillary adeno-cystomata originate from the epithelium on the surface of the ovary or from that of the Graafian follicles, or from both.

Adeno-carcinoma of the ovary may originate in the ovary, may develop in a papilliferous adeno-cystoma, or may be secondary to a similar growth in the uterus.

Thyroid.—Aside from the hyperplastic changes associated with the condition known as goitre, circumscribed adenomatous tumors of the thyroid occur. These appear as soft nodular growths composed of glandular tubules lined by tall cylindrical epithelium. Within these tubules papillary growths sometimes appear (adenoma papilliferum). Within the tubules is seen the colloid material characteristic of the normal thyroid. Although this tumor is one of the purest types of adenoma, it may produce metastases. It may also by direct extension invade the structure of the larynx.

Testicle.—The form of tumor as it occurs in the testicle is generally known as cystadenoma. It may occur in the child or in the adult. It is attributed by some writers to error in development. Two forms are recognized. In one the tubules are lined by cylindrical cells which sometimes have cilia, their contents being a clear or blood-tinged slimy fluid; in the other the epithelium is stratified and the contents a greasy substance with many fatty epithelial cells. The growth usually starts in the testicle and may attain a large size. Instances of carcinomatous changes have been reported.

Prostate.—The tumor usually occurs in this organ as an adeno-carcinoma and is rare. It appears as soft, nodular masses which project into the urethra or neck of the bladder and invade surrounding tissues. Ulceration is frequent, and when it occurs is accompanied by copious hemorrhage.

Pituitary Body.—Adenomata of this structure are rare, but are occasionally reported in connection with cases of acromegaly. They may be as large as a pigeon's or hen's egg; may protrude from the sella turcica, press on the brain, and extend even into the ventricles. Histologically, they are made up of large, tortuous, sometimes branching tubes lined by epithelial cells.

Pancreas.—Adenomata of this gland are not common. They are generally of the racemose type. Cesaris-Demel (1895) reports a distinctly encapsulated adenoma the size of a dove's egg in an atrophied pancreas. The cells were

irregular and primitive, occurring in one and sometimes in several layers, generally arranged in alveoli.

Lachrymal Gland.—Adenomata of this gland are not very common. They generally occur in persons of advanced age. By pressure they may interfere seriously with the movements of the eye. They do not tend to become malignant and are only troublesome on account of their size. Adeno-carcinoma has been reported, but is very rare.

Pineal Gland.—The occurrence of adenomata of this body is occasionally referred to in the literature.

Richard Mills Pearce.

ADENOMA OF THE SKIN.—Adenomatous proliferation of the cutaneous glands is an extremely rare occurrence, and it is only within a comparatively recent period that the condition has been recognized. Hypertrophy of the skin glands, on the other hand, is a concomitant of many chronic local disturbances of nutrition, and doubtless in some of the cases recorded as adenoma there has been confusion between this condition and hypertrophy. The considerations involved in the differentiation of hypertrophy and adenoma have been discussed in the preceding article.

Adenomata of the skin naturally fall into two classes: adenoma of the sebaceous glands (*adenoma sebaceum*), and adenoma of the sudoriparous glands (*adenoma sudoriparum*).

ADENOMA SEBACEUM.—(Synonyms: *Végétation vasculaire* [Rayer]; *Nœvi vasculaires et papillaires* [Vidal]; Adenoma of the sebaceous glands; Steatadenoma; German, *Talgdrüsenadenom*; French, *Adénome sébacé*.)

The earliest recorded cases of the disease are found in the writings of Rayer and of Addison and Gull, who, however, failed to interpret correctly the anatomical condition, which Balzer was the first to recognize, though Balzer's case, curiously enough, has been shown by later investigators to be one of acanthoma adenoides cysticum. Cases have since been described by Hallopeau and Vidal in France, Mackenzie, Pringle, Jamieson, and Crocker in England, and Caspary and Boeck in Germany. The only case recorded in America has been described by the present writer.

The disease manifests itself in the form of small multiple benign tumors, which may be distributed generally on the face, but occur most frequently at the sides of the nose. Their distribution is usually fairly symmetrical, but in Jamieson's and one of Crocker's cases they were limited to one side of the face, and in my own case the lesion was in the form of a linear patch on the forehead. The lesions in some cases were present at birth or appeared in infancy; but a more active growth, as to number and size of the tumors, has been noted at the time of puberty. In Caspary's case and in my own they did not appear until the seventeenth and the nineteenth year respectively. The individual growths seldom undergo any change after they have attained their development, though involution of a few of the nodules with resulting faint cicatrices has been noted.

The little tumors vary in size from 1 to 5 mm., are usually round and convex in shape, and the epidermis over them may be smooth or have a rough and somewhat warty appearance. Their color may be that of the normal skin, or they may have a brownish or even bright red hue. The color depends greatly on the presence or absence of telangiectases, which often appear as fine lines ramifying over their surface, and in some cases may form so striking a part of the tumor as to give the whole the appearance of a vascular nævus. In Vidal's case and in mine there was cystic degeneration of a part of the tumors, giving the appearance of small yellow nodules from which on incision a drop of inspissated sebaceous matter could be squeezed. Some importance has been attached to the fact that in many of the cases there were other striking abnormalities of the skin: warts, pigmented and hairy nævi, and small pendulous fibromata indicating a congenital tendency to malformations of the skin. It is probably only a coincidence that



**Adipocere.**  
**Adiposis Dolorosa.**

many of the cases have occurred in persons of deficient intelligence, some of them epileptics.

**Anatomy.**—Under the microscope the entire tumor is seen to be composed of larger and smaller masses, which bear the closest resemblance to the acini of normal sebaceous glands. It is indeed only in the great number, extent, and complex arrangement of the lobules that an abnormal condition becomes apparent. In some cases solid epithelial buds are given off from existing sebaceous gland acini, and the cells of these buds later undergo the peculiar fatty changes indicative of the glands from which they take their origin. Unna, who draws a very sharp distinction between hypertrophy and adenoma of the sebaceous glands, regards all the published cases with one exception as examples of hypertrophy.

The treatment of the condition is indicated only for cosmetic purposes. When the lesions are few in number they may be removed by excision, by scarification, or by electrolysis. When they are very numerous, any form of operative interference is inadvisable.

**ADENOMA SUDORIPARUM.**—(Synonyms: Adenoma of the sweat glands; Spiradenoma; Syringadenoma; German, *Schweißdrüsenadenom*; French, *Adénome sudoripare*.)

The disease which has been described under the various names of hydradenomes éruptifs, syringocystadenoma, epithelioma or acanthoma adenoides cysticum, etc., and which was formerly regarded as an adenoma of the sweat glands, is now known to have no connection with these structures. The reader is referred to the article on *Epithelioma of the Skin* for an account of this condition.

In view of the fact that the sweat gland is an approximately uniform cylindrical tube, the distinction between hypertrophy and adenoma of these glands can readily be made. Any deviation from the typical structure in the form of lateral budding or outgrowth suffices to constitute adenoma, providing, of course, that the new formation does not break through the membrana propria of the gland. From this point of view adenoma of the sweat glands is by no means a rare occurrence. It is frequently found in connection with other diseases of the skin, especially in association with tumors and malformations of the blood-vessels of the cutis and hypoderm, and with cancers of the skin. Under these circumstances, however, the adenoma constitutes merely an interesting microscopical condition without giving rise to any clinical symptoms. In these cases the adenomatous formation affects only the coiled portion of the gland, and it is a noteworthy fact that in all the observations hitherto recorded there has been a sharp distinction between adenoma of the coil and adenoma of the duct. This distinction has given rise to the terms spiradenoma and syringadenoma. Adenomata of the sweat glands occurring independently are of extremely rare occurrence.

Unna in his "Histopathology" was able to cull only six cases of *spiradenoma* from the literature, to which he added a seventh. The tumors varied in size in the different cases from a small chestnut to a hen's egg; were found on the head, neck, or extremities in middle-aged or elderly people (one case in a child); and presented no characteristic clinical features. The diagnosis can be made only with the microscope. The proliferation occurs in the form of solid epithelial buds, which usually show a tendency to grow in curved lines as they increase in length, and to become canalled like the structures from which they took their origin.

Of the *syringadenomata* there is but a single undoubted case on record, that of Petersen. It was in the form of a papillary *nevus unius lateris* on the neck, trunk, and thigh of a girl of twenty. The adenomatous proliferation was confined strictly to the ducts of the glands, which appeared considerably widened shortly above the coil, the cubical epithelium became cylindrical, and outgrowths developed which were sometimes solid and sometimes canalled. These outgrowths divided repeatedly like the branches of a tree, and produced thus the semispherical or mushroom form of the tumors. The

new-formed tubes were lined with a distinct membrane and showed no signs of colloid degeneration.

Sigmund Pollitzer.

**ADIPOCERE.**—(*Adeps*, fat, and *cera*, wax. French, *adipocere*, *gras des cadavres*; German, *Fettwachs*, *Adipocire*.) As the name suggests, adipocere is a material resembling in its gross appearances fat and wax. It is a semitranslucent, white, or slightly yellowish substance of about the consistency of cheese at ordinary temperatures; has a greasy feel, and yields slightly when pressed between the fingers. If a piece be rolled between the fingers for a few minutes it becomes much softer. When rubbed with water it forms a lather. Its composition is that of a soap, being made up of the calcium soaps of palmitic and stearic acids and also of acid ammonium soaps. Examined under the microscope it shows, occasionally, very numerous scales having a crystalline form; more commonly nothing but fat globules are to be seen. If it be melted and again allowed to cool, it is found, often, to have crystallized in round masses made up of needle-shaped crystals, radially arranged; hence like stearin.

Most of the specimens of adipocere with which one is familiar come from the macerating troughs of anatomical departments and from museum jars which have long contained specimens immersed in dilute alcohol. It thus represents the results of a metamorphosis of dead animal tissues placed under peculiar circumstances.

The only special point of interest in connection with adipocere lies in the fact that it is occasionally found in dead bodies which have been buried a considerable time. In fact, nearly all the structures of the body, except the bones, have been found converted into this material. For centuries its presence had been noted in disinterred corpses, but no opportunity was afforded for studying it on a large scale until 1876, when, upon the removal of the bodies from one of the cemeteries in Paris, a considerable proportion of those buried in the common grave were found by Foucroy to have been converted, to a greater or less degree, into this peculiar, fatty, wax-like material, and to it he gave the name by which it has since been known.

The conditions favoring its formation in buried corpses are still unknown. Doubtless moisture is always necessary; but why, of six or eight bodies buried in close proximity, and hence presumably under like conditions of soil and moisture, one should undergo almost complete change into adipocere, while the others undergo ordinary putrefaction, as has been observed, is at present inexplicable.

At one time it was thought that adipocere might be of medico-legal importance in helping to determine the length of time a corpse had been buried. Foucroy believed that thirty years was required for its formation. Later, this was reduced to one year; and Caspar mentions finding adipocere in the body of a new-born child which had lain for three months in a house cesspool. It is therefore impossible to establish an idea, from the presence of adipocere in a corpse, as to the length of time it has been buried.

Artificially, adipocere can readily be produced, either by soaking muscle in dilute nitric acid for two or three days and then washing it thoroughly in warm water, or by allowing the muscle to soak for months in a trough supplied with running water.

Adipocere is probably closely allied to cholesterolin.

W. W. Gannett.

**ADIPOSIIS DOLOROSA.**—At a meeting of the American Neurological Association, held in New York in June, 1892, the writer presented the histories and photographs of three cases of an affection which up to that time had not been recognized. The first of these cases had been under the writer's care since 1887, and recently she had died. The second and third were discovered in the wards of the Philadelphia Hospital in 1891. These cases also died, and, including the first, came to autopsy.

**Adipocere.**  
**Adiposis Dolorosa.**

The histories of these cases are briefly as follows:  
CASE I.—M. G., aged fifty-one, female, widow, a native of Ireland, and a domestic. Her father had died at forty-five of erysipelas. Her mother, who had had

nothing worthy of mention could be elicited. Syphilis was denied, as was also alcoholic excess. However, the condition of the patient on several occasions, upon her return to the hospital after furlough, was such as to throw more than doubt upon her denial of alcoholic abuse.

When forty-eight or forty-nine years of age she noticed that her arms were becoming very large. The upper arms and shoulders appeared swollen. The swelling continued steadily to increase, and was for about a year unattended by any other symptom.

In November, 1886, she was admitted to the surgical wards of the Philadelphia Hospital for the rupture of a varicose vein of the leg. In the following February she was transferred to the medical wards for a severe attack of bronchitis. Later she had an attack of severe pain and swelling in the right knee, attended by chill and fever. She was treated for rheumatism and obtained prompt relief. Two weeks after this she complained of a sharp darting pain in the right arm. It began on the outer aspect above the elbow and gradually increased in severity and extent, spreading upward to the shoulder and neck, and downward to the forearm and hand. It

was shooting and burning in character. She felt at times as though hot water were being poured upon the arm, and again as though the hands and fingers were being torn apart. No rise in temperature was noted. The pain was often paroxysmal, but it was never absent. On June 4, 1887, she was transferred to the nervous wards of the hospital and came under the care of the writer.

Her appearance at this time was striking. She was a tall, large-framed woman who looked as though she had at one time presented a fine physical development, but she seemed unnaturally broad across the back and shoulders. On removing the clothing an enormous en-



FIG. 42.—Author's First Case, Showing Large Masses of Fat on Back and Upper Arm.

eighteen children, died at forty of some affection incident to the menopause. Of her brothers and sisters, seven died in childhood, one in adult life of pleurisy, one sister in childbirth, a brother and two sisters of phthisis, while the remaining five are living and apparently in good health. None of the patient's relatives have ever suffered, so far as she knew, from symptoms similar to her own, nor had any of them ever had any nervous or mental affection.

As a child she had had measles, whooping-cough, and scarlet fever. Menstruation began normally at fifteen. At eighteen she married. Some years later she had an attack of pneumonia, but made a good recovery. She

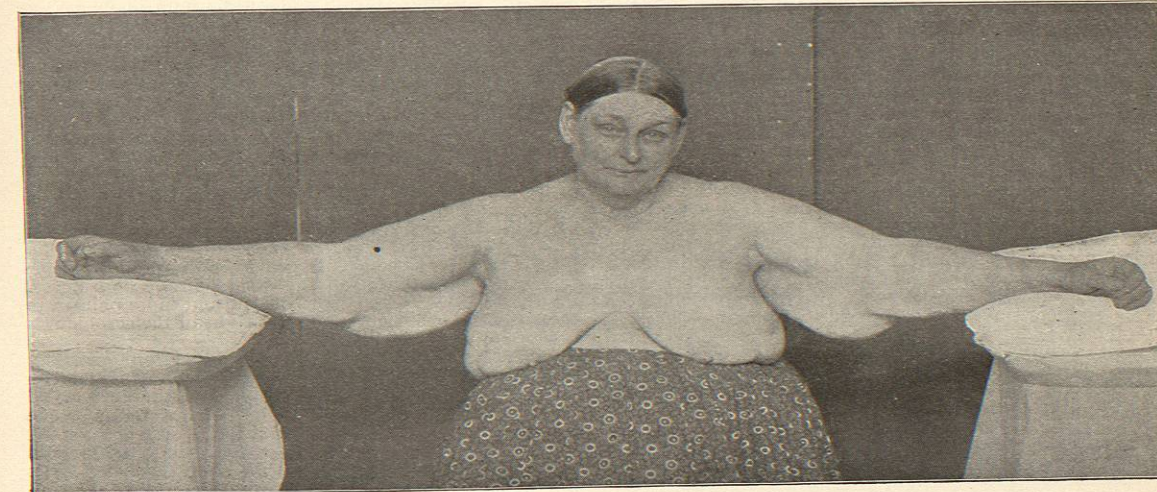


FIG. 43.—Another View of Author's First Case.

had in all seven children and one miscarriage. Five children died in early childhood: one from cholera infantum, two from measles, one from "congestion of the brain," and the fifth from spasms. The menopause set in abruptly at thirty-five. From this time up to within two or three years her health had continued good. She had undergone some increase in weight, but beyond this

largement of these parts was disclosed. The enlargement affected both shoulders, the arms, the back, and the sides of the chest. It was most marked in the upper arms and back, forming here huge and somewhat pendulous masses. It was elastic and yet comparatively firm to the touch, and it was impossible to produce pitting. In some situations it felt as though finely lobulated, and