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TUMORS OF THE FEMALE BREAST.

A CLINICAL LECTURE.

BY

J. WILLIAM WHITE, M.D.,

PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF PENNSYLVANIA

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TUMORS OF THE FEMALE BREAST.

A Clinical Lecture

BY J. WILLIAM WHITE, M.D.,
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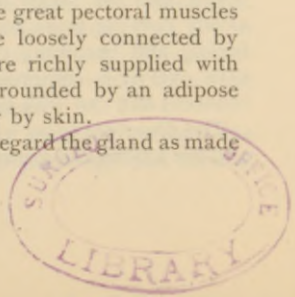
THE extreme frequency of tumors of the kind that I intend presently to show you renders the subject one of great interest, not only to the surgeon, but also to the practitioner, who usually is responsible for the early recognition of the growth, and upon whose advice, if he does not care to operate himself, the patient seeks the aid of the surgeon. Some preliminary remarks upon the anatomy of the gland may aid us in systematizing the general subject of the diagnosis of these growths. The mammæ are compound racemose glands, made up of fifteen or twenty lobes, each with its principal excretory duct, which empties into a sac at the base of the nipple, and contracts again into a tube which is continued to and ends upon the summit of the nipple. Each of these lobes is made up of a number of lobules, each lobule in its turn being composed of a number of gland acini or vesicles held together by connective tissue. The mammæ rest upon the great pectoral muscles to the sheaths of which they are loosely connected by delicate fibrous tissue. They are richly supplied with blood and with nerves, are surrounded by an adipose layer, and are covered anteriorly by skin.

For clinical purposes, we may regard the gland as made



up essentially of connective tissue, and of an epithelial or secreting structure. Simplifying the anatomy in this way, we may also, to a large extent, simplify the pathology, following the excellent classification of Mr. Mitchell Banks. By doing this, we can divide the new growths which infect the mammæ, as follows :

First. Tumors derived from connective tissue, and representing it in a fully developed state. These neoplasms are innocent and include the varieties known as lipoma, fibroma, myxoma, and chondroma.

Second. Tumors derived from hypertrophy of highly organized structures—neuroma and angeioma.

Third. Tumors derived from the epithelial or secreting structure and maintaining the general type of the latter. These tumors are either innocent or are on the border-line between benign and malignant disease. They include the adenomata, the adeno-fibromata, the adeno-cystomata, and the adeno-sarcomata.

Fourth. Tumors, derived from the connective tissue, but instead of presenting it in a fully developed or mature state, having it in an embryonic or immature condition. These neoplasms are malignant and include the large class of sarcomata.

Fifth. Tumors derived from the epithelial or secreting structures, but with those elements or structures atypical. These are, of course, malignant, and include the class of carcinomata.

Lipomata of the breast are exceedingly infrequent. The growth is situated usually between the skin of the breast and the breast itself, consisting of a superficial, slowly growing mass, having the characteristic doughy feeling and becoming dimpled upon the surface if the skin over it is compressed. It is, of course, perfectly innocent and can with safety be enucleated.

The *fibromata* occur with somewhat greater frequency, and are among the growths most often mistaken for car-

cinomata. The important points of differential diagnosis are as follows: Fibromata rarely exceed in size the dimensions of a walnut, and are sometimes no larger than a hickory-nut; they appear early in life—may occur, indeed, shortly after puberty; they have no tendency to infiltrate the skin or the surrounding parts; they grow very slowly; pain is not common; there is no secondary involvement of the lymph glands; they never affect the general health (except as they may influence nutrition through the fear of the patient that she has cancerous disease); if removed, they rarely or never recur. In other words, they are innocent growths, which are to be distinguished by their occurrence at an early age and by the absence of the characteristic symptoms of carcinoma, which is the neoplasm they most closely resemble.

The *myxomata* begin in the connective tissue uniting the various ducts and lobules of the gland, which tissue tends to revert to its original condition, and to become transformed into a jelly-like, translucent substance. They grow to a moderate size, affect the skin sometimes as does carcinoma, and usually cannot be diagnosticated with absolute certainty without an exploratory puncture. A tendency to recurrence is said to have been observed in these growths, and it is, therefore, advised by high authorities, that when the diagnosis of myxoma has been assured the entire gland should be removed.

Chondromata, *angeiomata*, and *neuromata* have the well-known characters of these growths, when they occur in the mammary gland, as when they occur elsewhere. They may easily, therefore, be recognized, but are so exceedingly uncommon, as to be classed rather as surgical curiosities, than as growths likely to fall under the attention of the general practitioner.

The third class is a complex one and presents the greatest difficulties both as to pathology and clinical

differentiation. Running over it rapidly we may say that pure *adenomata* are of the most extreme rarity. One might practise surgery for many years without meeting with a growth of this character. They are composed of fully developed glandular tissue. They have two peculiarities which make them more serious than might be supposed from the place which they occupy in the pathological series, viz., they are apt to recur after removal and they tend to become transformed into carcinoma, by breaking-down of the basement membrane of the vesicles permitting an infiltration of epithelial elements into the surrounding connective tissue. Clinically they are small, hard, painless, nodulated tumors, freely movable, of slow growth, and apt to affect middle-aged married women who have suckled a number of children. The *adeno-fibromata* are much more common, and, indeed, are said to occur with more frequency than any other non-malignant tumor of the breast. They appear at an earlier period of life than does carcinoma, are hard, nodular, movable tumors, and are altogether without the characteristic signs of malignancy. They cannot be distinguished clinically from the pure fibromata. The *adeno-cystomata* are growths of greater or less density, often attaining a large size, and consisting at first of numerous walled cavities into which there is apt to occur an intracystic growth, which often quite fills them. They grow slowly, reach a large size, affect middle-aged women, and sometimes involve the skin, not by infiltration but by pressure.

The *adeno-sarcomata* are distinctly malignant, and differ but little from the pure sarcomata, the diagnosis usually depending upon the microscopic examination after removal.

Turning now to the characteristics of the tumors which belong to our fourth class, or those of *sarcomata*, it may be said that when we meet with a painless, elastic

or semi-fluctuating tumor, having a tendency to infiltrate, to grow steadily and rapidly without becoming adherent to the skin or the chest-wall, which occurs in a person from twenty-five to thirty-five years of age, which is not accompanied by any enlargement of the axillary or other lymphatics, and in which the veins are enlarged over the surface of the growth, the diagnosis of sarcoma may be considered to be reasonably well assured.

The most interesting and important class of cases remains to be described, viz., *the carcinomata*, constituting about eighty per cent. of all breast growths. Occurring with enormous frequency and attended with almost unvarying fatality, these tumors are certain to come under the observation of every practitioner. Their well-known and easily recognized peculiarities may be summed up as follows: 1. The patient is past middle age, usually past the climacteric. The disease is associated with the involution, the disuse and atrophy of the gland, not with its evolution. 2. The tumor contracts adhesions as it grows, drawing upon the connective tissue about it (causing puckering of the skin), and upon the milk ducts (causing retraction of the nipple). 3. It infiltrates the surrounding structures, the skin above and the muscles beneath. 4. It spreads to distant parts early in its development by means of the lymphatics, the nearest glands becoming indurated and progressively enlarged.

These are the four characteristic signs of the variety of cancer known as scirrhus, the encephaloid differing in consistency and size, being usually much softer and larger. Other valuable symptoms are shooting pains, general cachexia, ulceration, chronic eczema or nodular growths in the skin, or sero-sanguinolent discharge from the nipple.

I have now run over the main diagnostic points which will enable you to recognize and classify satisfactorily

the various neoplasms of the breast which may present themselves to you. The inflammatory conditions of the breast which may simulate new growths are chiefly *chronic induration of a lobule* and *cold encysted abscess*, both of which are apt to be associated with lactation. The former may sometimes be recognized by its ill-defined margins, its tenderness on pressure, and by the fact that several lobules or even both breasts are not infrequently affected. The latter, in addition to these symptoms, is often accompanied by some œdema of the skin.

Glandular or *retention cysts*, *serous cysts*, and *hydatid cysts* may be known by their fluctuation, but are sometimes so tense as to be of stony hardness. An aspirating needle will reveal the character of the growth, the fluid in the retention cysts being usually dark and bloody, in serous cysts clear and albuminous. The presence of hooklets would, of course, establish the diagnosis of hydatids.

Supra- and *sub-mammary abscess* and *galactocele*, or *milk cyst*, have an almost constant association with pregnancy or lactation, sometimes with a recent traumatism superadded, or with the sudden cessation of discharge from the nipple. The diagnosis is usually not difficult, and is based upon the history and the presence of inflammatory or retention symptoms.

You will find that your difficulties in diagnosis among all the various growths and enlargements affecting the female breast will be greatest with the tumors of small size, seen soon after their appearance. There is, of course, a period in the life history of each tumor, however serious it may be, when it is small and movable and painless, when surrounding structures and neighboring glands are not involved, and when your opinion will perforce be more largely influenced by the age of the patient, her personal and family history, the presence or

absence of lactation, etc., than by the physical characteristics of the growth itself. If, on the contrary, one or two years have elapsed since its appearance, and it still retains the above-mentioned features, it is safe to say that there is but little likelihood of malignancy.

When, as in the case of the patient whom I now show you, a young woman, aged twenty-five, presents herself with a small, painless, solid growth stationary for a year, freely movable, and with no symptoms of malignancy, what is your duty toward her? You may decide that there is a high degree of probability that you are dealing with a fibroma, or an adeno-fibroma, which would perhaps be harmless if left undisturbed, but there are other and important factors to be considered. You will constantly find in such cases that the patient is profoundly worried and distressed, that her pleasure is destroyed, her sleep broken, her nutrition affected by the presence of this growth. She is certain to have known, or, at least, to have known of, some one who has died of a breast cancer which in the beginning more or less closely resembled the swelling in her own breast. These constitute in themselves, in my opinion, good reasons for operation in the large majority of such cases. Then, too, we must, as I have said, frankly admit, that in the early stage of all growths there will be very considerable doubt in the mind of even the most experienced surgeon as to the ultimate outcome of any particular case. While the age of the patient, the absence of any family history of cancer and of any sign of that disease, may make its later appearance extremely improbable, it cannot be denied that there are many instances in which a too favorable opinion given at first has to be modified as the disease progresses, and in these cases both patient and surgeon are apt to feel that possibly a chance has been lost of which advantage might have been taken. Nor should the undoubted possibility of the transformation

of an innocent into a recurrent and truly malignant growth be lost sight of.

For these reasons it is my custom to advise operation in such cases whenever the general health of the patient is reasonably good. It is not necessary at this time to sacrifice the entire gland. We are dealing with a growth which probably belongs to one of our first two classes, or to one of the innocent varieties included in our third class, and has no tendency to return. We will probably find it encapsuled and will recognize that there has been no infiltration of surrounding structures. We can, therefore, spare the patient the unnecessary mutilation of an excision of the entire mamma. A careful microscopical examination shall at once be made, and if then there prove to be any distinct tendency to malignancy, a second operation, having for its object the removal of the whole gland and the cleaning out of the axilla, will be recommended. This should be understood by the patient, who will ordinarily, as in this case, willingly acquiesce, appreciating your desire to perform the least serious operation that will make her safe. The method of withdrawing a portion of the growth by an augur-like arrangement, recently suggested, has not been found satisfactory, as the very growths in which it would be of the most use, viz., those on the border-line between innocency and malignancy, are just those which present the greatest difficulties of microscopical diagnosis, and in which more complete sections are, therefore, necessary.

Under our present antiseptic methods, union by first intention ought to be the almost invariable rule in all these cases, and the operation for excision of a movable growth of moderate size should be without shock, pain, or risk of any sort.[1]

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[1] The operation was performed in the usual way, the growth being removed by dissection from the neighboring structures. It

In approaching the second case which I have to present to you we find a woman, past middle life, with a tumor having all the characteristics of carcinoma, of moderate size, the skin slightly infiltrated and the axillary glands somewhat involved. In such cases, in all the undoubtedly malignant tumors—and especially in dealing with the carcinomata—the duty of the surgeon is, to my mind, perfectly clear. I have not now the time to give you my reasons in detail for all the opinions I am expressing to you, but must ask you to believe that they are founded on an experience which has been exceptionally large, thanks to my relations with Professor Agnew. I have had with him, in addition to my own experience, the opportunity of assisting at the operations upon and participating in the after-treatment of what may fairly be called an enormous number of these cases, and have watched their progress from first to last. The diagnosis of malignancy having been established, there are always certain questions in regard to prognosis which the surgeon will at once have to answer, either to the patient or her friends—and there are certain facts which, with or without questioning, it is his duty to lay before some intelligent member of the family.

In the first place, it should be clearly understood that the disease is, with or without operation, almost necessarily a fatal one. A careful study of recorded cases, in which a claim of cure has been made, will show that in many the diagnosis was not confirmed by microscopical examination, and that in more the report of "cure" was made at a period of twelve, eighteen, or twenty-four months after the operation. It is certainly unsafe in giving your prognosis to do more than express the hope

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was enclosed in a firm capsule, and proved to be an adeno-fibroma with a great excess of the fibrous element—almost a pure fibroma. No drainage was used. The wound healed in six days.

that the case in question may prove to be one of the extremely rare ones in which the patient enjoys good health for many years—sometimes long enough to die of something else. This explanation will usually be followed by inquiries as to the probable duration of life, if the patient is not operated upon. In reply to this, it may be said, that according to the best authorities, the average length of life in cases of scirrhus, dating from the time of its first discovery, is about two years and a half.

Sibley places this period at a little over thirty-two months, Baker at forty-three months, and others at different dates, the time which I have mentioned—namely, two years and a half—being, however, about the average. Agnew says the shortest period at which he has seen death result from untreated carcinoma is six months, and the longest nine years. If the cancer is encephaloid, it is likely to progress more rapidly and to bring about an earlier fatal termination, the average duration of life in these cases being under a year (Jacobson). The next question will probably be: What is the probable duration of life after such an operation as is contemplated? To this it may be replied, that if the case is recognized early and the operation is promptly assented to, it may be said to increase the chance of life by at least a year, possibly by a year and a half, bringing it up to from three and a half to four years. If the discovery of the disease and the operation are later, the result will not be so good, the average date of recurrence after such late operations being from ten months to a year and a half.

As to the risks of the operation itself, which must also be considered, if the surgeon is familiar with the antiseptic method, and if he has had any experience in operating upon this class of cases, it is safe to assure the patient, if she be in reasonably good general condition,

that there is almost no risk to life involved in removal of a mamma.

After having, as I have said, assisted Dr. Agnew in a very great many operations of this kind, and after having operated upon a number myself, the total running up into the hundreds, I can safely say that there has not been, in either his practice or mine for some years, a single death as a result of an operation for carcinoma of the breast. Indeed, with perhaps one or two exceptions, there have not been for years any conditions subsequent to operation which even gave rise to a moment's anxiety as to the life of the patient. This is not an exaggerated statement, but is one which has only been made possible by the rigid application of antiseptic methods which not only brought the mortality down to *nil*, but immediately reduced the average time of healing, even after the largest wounds, from three or four weeks to ten or twelve days.

There are, of course, cases in which it will not be proper to recommend operation. I would say, in a general way, that those are cases in which the extreme age of the patient, or the presence of some intercurrent disease, or the existence of some bad habit, such as alcoholism, or, preëminently, the involvement of such an extensive cutaneous and glandular area as absolutely to preclude the possibility of the entire removal of all the glands, as well as of the tumor itself, should constitute powerful arguments against operation.

On the other hand, even great involvement of the glands should not be considered as constituting invariably an insuperable bar to operation. There are reasons which may make operations justifiable, even in this class of cases, as for example; where ulceration and fungous growths have been extensive and the patient is seriously annoyed by offensive discharges, or weakened

by frequent bleeding, or, in other cases, where the pain is so great as to make life unendurable.

In such instances, it is quite proper for the surgeon to operate with a clear understanding that the operation is palliative in its character, as it is, unfortunately, in nearly all cases.

Of course, the surgeon would not think of operating in the presence of carcinoma elsewhere, as in some of the viscera.

It should be remembered, however, among the arguments in favor of operation that visceral cancer is painless, as a rule, and that if internal recurrence takes place the patient will at least escape the distressing accompaniments of death by exhaustion, hemorrhage, or septicæmia, as in cases of neglected and ulcerating carcinoma.

Having advised operation, then, in carcinoma or in any other malignant tumor of the breast, what is the best method of operative procedure? I will not detain you with the details of the antiseptic methods employed; they are already familiar to you, and consist in the most scrupulous preparation of the skin of the patient, the hands of the operator, the instruments, dressings, ligatures, sutures, etc. All that I desire to-day to call your attention to is the method which I shall presently employ, and which, as I say, has been used with much success by Dr. Agnew, and in a smaller number of cases by myself. The chief question at issue among surgeons, so far as I know, in regard to the operation itself, is chiefly as to its extent—*i. e.*, as to the necessity in every case for the removal of the entire breast and the chain of axillary glands. A minor question, also under discussion, refers to the amount of skin removed. Is it, or is it not, necessary in removing the breast, to take with it all the skin which covers it—in other words, to perform the so-called "dinner-plate" operation? In reply to these questions,

I would say that, first, as to the removal of the entire breast, there seems to me every reason for advocating it. Mr. Butlin, in his recent excellent work upon the *Operative Surgery of Malignant Diseases*, has brought forward what seem to him good reasons for believing this to be, both theoretically and practically, unsound; but his arguments are not convincing to my mind. The tendency of malignant growths to extend rapidly far beyond the possibility of recognition by not only the eye, or the touch, but even by the microscope, is so well known that it seems the obvious duty of the surgeon to remove every particle of such tissues in the immediate vicinity of the growth as can be taken away without undue mutilation or deformity, and with a reasonable degree of safety to the patient. I, therefore, would strongly recommend you, in cases of this kind, not to rest satisfied with anything less than the removal of the entire breast, of every portion of suspected skin, and of all the lymphatic glands of the axilla, whether they are or are not perceptibly enlarged. The severity of the operation is not materially increased in this way, while there can be little doubt that life is prolonged, and possibly the best chance is given for avoidance of recurrence, although it must always be recognized and admitted that that chance is an exceedingly small one.

As to the removal of skin, while every portion which is in the least adherent, or puckered, or even doubtful in appearance, should not only be removed, but should be given a wide berth, it seems scarcely justifiable in the light of our present statistics to subject every woman who undergoes this operation to the prolonged and tedious experience involved in the healing of an open wound of large size. It undoubtedly also increases the pain, the discomfort, and the risk of convalescence, and I have yet to learn that its indiscriminate employment brings

with it any compensatory immunity from recurrence. The burden of proof rests with its advocates.

I will now proceed with the operation best suited to such cases as the present one. An elliptical incision is made, including the nipple and all the affected portion of skin, and a broad area on either side of it. The incisions extend from the sternum on the affected side to a point just below the axillary border of the pectoralis major.

The lower flap is dissected up rapidly, the dissection being carried well beyond the limits of the breast. The connective tissue beyond the breast limits, and the fascia overlying the pectoralis muscle, being recognized before the dissection stops, the flap is reverted, a few large bleeding vessels are picked up by hæmostatic forceps, and the space beneath the flaps is filled with antiseptic gauze or with towels wrung out from a hot bichloride solution. A similar flap is then formed on the upper semi-circumference of the gland.

After this, the gland having been loosened well around its border, and especially at the part toward the sternum, the operator seizes it with the hand, raising it by forcible traction made in the direction of the fibres of the pectoral muscle, to which it is often adherent. If this be the case, he will often remove with the tumor a portion of the attached fascia and muscle. This, however, is not to be regarded as a disadvantage, as such portions of tissue will probably be implicated and might escape the knife. The points of attachment are also those to which especial attention should be paid, all doubtful portions of the great pectoral being freely removed. The axillary cavity is entered by an incision through the fascia, near its anterior border, and the glands removed by blunt dissection, chiefly with the finger.

The wound is dressed with the same care observed in

all the other steps of the operation. The rubber drainage-tubes are removed on the second or third day.

[Union by first intention on the eighth day was obtained. The highest temperature was 99.3°.]

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