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THE TECHNIQUE OF OPERATIONS FOR CANCER OF THE BREAST.

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I do not feel that apology need be made for introducing to the society for discussion, the subject embodied in the foregoing title; the widespread and increasing prevalence of cancer of the breast,¹ its painful and terrifying features, and, above all, the very great attendant mortality, render it one of the most important of surgical conditions and one in which the most strenuous effort should be made to cure, and when cure be impossible, to ameliorate. The views which I have the honor of laying before you are based on some fifty operations in my own hospital and private practice. These operations have been done under modern methods and nearly all the cases have been followed from year to year. You will, therefore, pardon me if my observations are largely personal, and if I quote but little from other writers.

With the causes of cancer in general, we are as yet unfamiliar. Heredity bears but a slight relation, predisposition and trauma are still indefinite. The parasitic theory has of late years had zealous advocates and equally positive negations. At best it remains unproved. Discussion of this, however, is without the scope of this paper. So, as well, of the diagnosis but little need be said. A persistent lump, be it large or small, in the breast of any woman, young or old, is a matter demanding the most careful consideration. It may be cystic or solid. This will be determined by the exploring syringe. If it be solid, its malignancy can often be accurately determined only by incision. In those at or beyond middle life, a solid tumor is generally cancer. In girls, while the chances are quite in favor of adenoma or fibroma, a sarcoma may be found. In patients between the ages of 20 and 35, any of these forms may be encountered. I have more than once seen cancer of the breast in a woman under 30 years.²

So, in general, whatever be the age, the earlier our diagnosis be made accurate, the better it will be for the patient.

Operations for cancer of the breast are designed to be curative or are merely palliative, and it is needless to say that the end in view is determined by the extent of the neoplasm. Whatever this may be, the

preparation of the patient is practically the same. The bowels are well moved on the day preceding the operation, the chest, axilla and arm well scrubbed with soap and water and thoroughly shaved and a green soap poultice applied to the region of the incision and the surrounding parts. This is left on over night. On the morning of the operation the green soap is removed, the parts scrubbed with a 1 to 1,000 sublimate solution and a compress wet in this applied and left in place until the patient is under ether. If there be an ulcerated area it may be covered with iodoform gauze and collodion, or it may be touched with the thermo-cautery after the patient is anesthetized. The assistant who is to give the anesthetic should prepare his hands as though he were to participate actively in the operation itself, and should wear a sterilized gown. Care should be taken to see that the ether cone is cleanly.³ The best table is one of medium height, with the chest and head piece moderately elevated.

Let us assume, if you please, that the left breast is the seat of operation and that the tumor is of moderate size, not adherent to the chest wall and not in the periphery of the gland. The arm is abducted to beyond 90 degrees and held by an assistant or nurse. The skin incision must be ample, well distant from the supposed margin of the growth. It is of advantage in placing this incision to make light cuts in the skin for landmarks. One at the inner angle of the incision (which will be at about the middle of the inner, lower quadrant), one in the axilla at the lower border of the tendon of the pectoralis major, and one each at the middle of the breast above and below.

These landmarks are of distinct advantage, for when the tissues are placed on the stretch in cutting, it is difficult to estimate the amount of retraction which has been made.

This upper cut goes well through the skin and subcutaneous fat; at the outer upper margin of the growth it swings down below the pectoral tendon and is prolonged to beyond the middle of the axilla. An assistant pulls up the inner flap and it is well dissected from the chest toward the median line. The knife then cuts toward the ribs, well into or through the costal portion of the pectoralis major, and a part or the whole of this muscle is raised, with a few deep strokes, from the chest wall. The surgeon's left hand, grasping the breast and lifting it, makes this easy.

At times a few vessels may require forcé pressure, often a sterilized towel crowded into the wound and firmly pressed down by an assistant will check oozing. The lower incision is then made, the lower, outer flap dissected up and the breast and underlying muscular tissue cut from the chest, the pectoral tendon

¹ Bryant, New York Medical Record, Jan. 19, 1895.

² I would like, here, to record the opinion that cancer is much more frequent in the third decade than is generally supposed. I have seen cancer of the rectum, uterus, lip, breast and stomach in patients under 30.

³ The physician's hands and the cone are so near the field of operation. In one of my suppurative cases I felt that I could trace infection to this assistant.

severed and the mass left hanging by the fatty tissue beneath and below the pectoralis major. These fatty tissues are then carefully divided from the chest wall from above downward and outward toward the axilla. The axillary vein is exposed by cutting through overlying fascia. This is best accomplished by slipping a blade of a medium, blunt, curved scissors beneath the fascia and cutting from within outward. The vein should be exposed for some two inches or more, the fascia and fat carefully dissected from it. The tributary veins should be clamped before cut, otherwise they retract and ooze in a troublesome way. If involved lymphatic glands be adherent to the vein it (the vein) may be resected. I have not seen more than temporary edema follow this.

The entire axillary space is to be thoroughly cleared of the structures crossing it, the subscapular veins should be spared, the subscapular artery will not generally require ligation. The apex of the axilla and the space of Mohrenheim are to be carefully investigated and the contained fat and fascia removed. Finally, the entire mass of fat and glands is cut away from the serratus and latissimus muscles.

All bleeding is to be carefully checked and the wound closed. If the tumor be small the edges of the chest flaps can generally be approximated. If, however, it is large there will be a gap of large or small dimensions left. Here, in certain instances, the sliding flap method of Shradly will avail. In other cases lead plates with relaxation sutures will bring the flaps together as nearly as possible, and blood-clot (Schede) closure be obtained under strips of rubber tissue. Secondary skin grafting (Thiersch) may be done in eight or ten days.⁴

For sutures I prefer the silkworm gut, interrupted and not too closely placed. An axillary drain may be inserted or omitted. My recent cases have healed promptly without drain and under a single dressing. The ideal dressing is plain sterilized gauze. A mass of this crowds the fornix of the axilla well up, and the entire dressing is firmly and evenly held in place by broad strips of rubber plaster. A mass of sterilized absorbent cotton envelops the chest, with an ordinary binder over all. The arm is outside this and loosely fixed at the side.

The foregoing description applies to an ordinary case, in which the tumor is not large, say the size of a pigeon's egg, centrally placed and not adherent. It is needless to say that varying conditions demand essential modification in technique. If the cancerous mass be no larger than a plum and not extending to the under surface of the gland it suffices, I think, to remove the pectoralis fascia and leave the muscle. If the tumor be peripheral a corresponding amount of tissue must be removed in its vicinity. When the tumor extends to the base of the mamma, the greater pectoral must be excised, and it is worthy of note that two experienced observers, Halsted⁵ and W. Meyer,⁶ have recently advised that it be removed in all instances. Each of these surgeons has carefully devised a definite operation for the removal of both of the pectoral muscles, the former surgeon removing them in part, the latter *in toto*. Halsted reports fifty cases in which he has done this, which he calls the "complete" operation; and with the magnificent resources of the Johns Hopkins Hospital at his command we might well expect definite and ex-

tensive histologic reports of the involvement or freedom from invasion of the muscles, lymphatics, fascia, fat and other tissues. Such details are, however, lacking in the reports of his cases, and we must at present consider the proposition of theoretic value, though most certainly having the advantage of thoroughness and the wide removal of surrounding tissues. It is of interest to note that Halsted does not find this addition to increase the risk of the operation, and his patients regained excellent use of the arm in retaining the clavicular portion of the greater pectoral. I have repeatedly removed a large part of the muscle and have never seen resulting disability. As to the most important point in this proposition of Halsted and Meyer, the ultimate cure of the patient, we must await further report. For of Halsted's cases 75 per cent. have been done within the past three years (the generally accepted limit of "cure") and the remainder have but an average (22 per cent.) of freedom from relapse. Meyers' procedure is more radical, but he has had opportunity to apply it in but one or two recent cases. We shall await with much interest further reports on the all important question of radical cure.

The axilla must, in all cases, be invaded and thoroughly cleared out. This is a position universally accepted, which admits of no debate. It makes no difference whether glands be felt therein before operation. I have repeatedly found small, cancerous lymphatics in an axilla which seemed normal on palpation. The axillary dissection must be thorough and carried to the highest possible point. So, as well, it is of the greatest importance that the tissues between the breast and axilla, the fascia, fat and contained lymphatics be removed in a single mass.⁷ It is useless to say that the cases in which the axilla is not involved are those in which the prognosis is the best. Invasion of the high axillary glands makes it almost certain that there are involved lymphatics beyond reach. And I have been led, also, to expect speedy recurrence in those cases in which the axillary fat has a sandy, granular feel. Halsted advises in every case the excision of the supra-clavicular glands. This adds but a few moments to the length of the operation and one can but regard it as of material value.

Throughout the entire procedure, active assistance is of the greatest importance. All bleeding vessels should be promptly seized, the retraction should be intelligently made, especially when the axilla is the field of work. It is of distinct advantage to make the proper flaps at the first cuts, for if they require revision time will be lost in checking the accompanying hemorrhage. A "dry" wound is the best assurance of prompt healing.

In those unfortunate cases in which the disease is too far advanced to permit thought of mere palliation, operation is justifiable whenever it is felt that life may be prolonged and the comfort of the patient enhanced thereby. In such instances the operation may be modified to suit the requirements of the individual case. Our rule in regard to these palliative procedures should be a simple one; to act as the best interests of the patient demand.

As has been said, these cases may be put up with or without drainage. In my latest cases, in which I have operated in the dry, aseptic way, I have been able to dispense with drains. Unless there be some indication for change the first dressing may be left

⁴ In general I have found this preferable to primary grafting.

⁵ *Annals Surgery*, November, 1894.

⁶ *N. Y. Med. Record*, Dec. 15, 1894.

⁷ All incisions outside the cancerous tissue.

until the sixth or eighth day, at which time the silk-worm stitches are removed. From this time on, the patient is encouraged in the use of the forearm and arm. The functions return in due time and I have never seen permanent disability in patients in whom the axillary fornix had been crowded well up.

The immediate prognosis in the modern operation for cancer of the breast is good. I have myself had some fifty operations without a post-operative death. Halsted reports seventy-six cases without mortality, Weir over one hundred. In general, the death rate is 2 or 3 per cent. As regards the most important feature, the ultimate result, statistics are steadily improving. The most important contribution to this, in fact the most valuable article on cancer of the breast, which has yet appeared, is the recent paper by Bull.⁸ This surgeon reports 118 personal cases, of which he traced to the end 115, or all but three. The exceptional value of these data will be appreciated when we realize that all of these cases were carefully and conscientiously followed from month to month. A large proportion of them were seen by me and examined every three or six months.

In case of death, the statements of the attending physician were obtained as to the cause. Patients who lived at a distance were regularly examined by the family physician, and his report noted from time to time in the history.

Bull's cases are properly divided into two classes: 1, those operated upon during the past three years; and 2, those previous to that time. Of these the second class alone are utilized as to ultimate results, seventy-five in number. And of these seventy-five cases, twenty or 26.6 per cent. are living, free from recurrence, at periods varying from three years nine months to ten years after operation. That is, 26.6 per cent. of all cases may be classed as "cured." This is, as Bull says: "A higher proportion of cures than has been previously reported."

Bull's statistics might, however, mislead us in concluding that the prognosis is less favorable than it really is, for his cases include those in which the operation was palliative, as well as those in which the disease was yet in an early stage. So, in this way, Bull finds on dividing his cases, that those in which the axillary glands were free from invasion show over 50 per cent. of three year cures.

I, myself, in my last year's work at the New York Cancer Hospital, divided my operable cases into three classes, as follows:⁹

1. Those in which the disease is so limited that it is thought reasonably probable that it is entirely excised and that the patient has a fair prospect of cure.

2. Those cases in which the surgeon is doubtful, after removal, whether he has gone beyond the limits of invaded tissue; and,

3. Cases frankly incurable, in which a palliative operation affords a fair prospect of adding to the life and comfort of the patient.

It is needless to say that no sharp dividing lines can be drawn. One places an individual case in its approximate class after he has operated, and after he has read the detailed report of the pathologist.

It would be quite as irrational to include all cases of pulmonary tuberculosis in one class, both incipient and advanced, and to say that the percentage of

cures is thus and so, as to pursue a like course in cancer. An adherent breast cancer the size of a cocoanut is one thing, a nodule no larger than a robin's egg is quite another matter; and it is obviously unfair to allow the latter to bear the recurrence percentage of the former.

The histologic examination of the parts removed is of the greatest importance and should be made in a most thorough manner. No specimen can be certified as cancer until the microscope has so proved it, and it is not sufficient to make a perfunctory examination of a piece of the tumor itself. Segregated glands should be carefully examined, especially those lying highest in the axilla. It has been my custom to mark certain outlying portions of the breast, skin, muscle, fasciæ, glands, etc., for special report by the pathologist, and he should note the amount of healthy tissue intervening between the tumor itself and the cut surface of the parts removed. In this way alone, may we be reasonably assured that we have gone beyond the confines of the growth, and in this way, as well, may we compare with the original history of the case the development of recurrent nodules.

Our responsibility in these cases of mammary cancer does not end with the simple removal of the growth. The patients are to be placed under the best hygienic conditions and are to be followed carefully from year to year. My own rule has been to instruct them to return for thorough examination every three months, and in the interim, if they find evidence of suspicious nodules. The more intelligent class of people will, as a rule, see the necessity for this and gladly comply. The poorer classes will often fail to return and must be looked up in their homes. As an evidence of the thoroughness with which this can be done, I may again refer you to Bull's list of 118 cases in which 115 were kept under constant observation to the end. Internal recurrence admits of no relief. Local nodules may, however, be removed from time to time, and while in general the prognosis in recurrent cases is unfavorable, yet we may often add to the comfort of the patient and at times achieve a lasting cure.

As an example of the value of this frequent revision I may cite the case of a woman of 46 years who was in one of my wards at the Cancer Hospital in May last. Bull had removed the right breast of the patient for cancer some four years previously. A year later Weir excised an extensive scar recurrence. Something like a year after this, I removed the opposite breast and axillary contents for a cancerous nodule, the size of a robin's egg, and have since excised small nodules on four different occasions from the scar of the right side. Her general health has not yet suffered and she is able to support herself and children. It is now over four years since her original operation, and but for the fact that she has been watched constantly, she would doubtless have died long since.

I purposely omit more than the briefest mention of the use of erysipelas injections in malignant growths. In sarcoma the method seems deserving of the most extended trial. In carcinoma we have practically no evidence that it is of value.

I can but class these operations for cancer of the breast as among the most important with which we have to do in surgery; not that they are in themselves dangerous, but that the best chance for cure requires the exercise of mature judgment. And in

⁸ N. Y. Med. Record, Aug. 25, 1894.

⁹ N. Y. Medical Jour., September, 1894. I use the word "doubtful" in its broadest sense. It is needless to say that one never feels certain.

conclusion, I beg to express the view that mammary cancer is a curable disease, and that the keynote to its successful management is to be found in the earliest possible diagnosis, prompt and wide excision and careful observation of the patient during the remainder of her life.

Stedman Block.

RELATIONS OF DISEASE, CRIME AND VICE.

Read before the Omaha Medical Society, Dec. 11, 1894.

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I would define these terms by saying that disease is the violation of any physiologic law or any abnormal activity in living tissue. Crime is the violation of any human law, or any abnormal activity in the civil world. Vice is the violation of any moral law, or any abnormal activity in the moral world.

We have to-day in the United States more than one hundred thousand tramps who find it easier to get a living by begging from door to door than by labor, and hence take to this sort of life.

There are more than five hundred thousand criminals in this land to-day and only one-fifth of them are behind the bars. It is estimated that two women out of every one hundred in this country are fallen women. The percentage of divorces to marriages is alarmingly great so that in some States there is one divorce granted to every twelve marriage licenses issued. Ten thousand children roam the streets of Chicago homeless and without suitable food, clothing, shelter or guardianship. While this appears to be a very large number it is probably not greater than will obtain elsewhere.

Although it is impossible to get at statistics upon the frequency of criminal abortions, yet so prevalent is it even in the so-called "better" classes of society that in some quarters a great cry has justly been raised against it in which every physician should join, for he alone has any adequate conception of its frequency and disastrous results, morally and physically.

By sentimentalists and would-be reformers it has of late become quite common, and especially since the "Keeley cure" and "Christian science" fakes, to hear it affirmed that alcoholism or drunkenness is a disease and the victims are irresponsible for their acts. Thus morphinism, cocaineism and allied disorders are placed in the same category, and heredity is very properly given a prominent part in their production.

T. D. Crothers, of Hartford, a recognized authority, estimates that there are in the United States 1,600,000 excessive drinkers besides a large number of victims to morphin, chloral, cocaine and other narcotic drugs. He says: "Alcohol used either in moderation or excess, always deranges sensation and the brain centers, which receive and determine the value of the impressions. False impressions come from the senses and the brain is unable to correct them. Associated with this the delusion of mental health, and clear accurate judgment of his conditions and surroundings. This condition is present in every drinking man, only different in degree. . . . The criminal acts of the inebriate spring from this confusion

of sense and judgment. This shows the irresponsibility of inebriates."

Dr. L. D. Mason, of Brooklyn says: "The large majority of inebriates become so from necessity, not from choice, there being a *vis a tergo* of heredity, environment and disease that produces physical degeneracy and plunges them into drunkenness."

Wilson, of Edinburgh, says: "Drunkenness is the outcome of an ill-organized constitution."

Two noted French medical authorities in a report to the Government Hygienic Committee give the opinion that, "alcoholism is now a social danger, undermining the bodily and mental health of posterity, and that from its injurious influence on the children and ulterior descendants of the habitual consumer, a degeneration of the whole nation is being induced."

The large increase of drinkers among women both in this country and England is a cause for serious alarm. Lawson Tait says: "An educated and intelligent woman never becomes a drunkard but from some deep-rooted and often carefully concealed cause. The indulgence may be from physical suffering or mental distress." He holds that many of his cases of suffering from inflammatory affections of the uterine appendages have been cured of these habits by the treatment which cured their physical suffering.

Dr. F. O. Marsh, of Cincinnati, in a paper read before the Miami Valley Medical Society upon morphinism said: "The deviation from the normal standard of nerve nutrition and nerve function resulting therefrom, and which impels to and necessitates the continuance of morphin is a disease. . . .

The moral responsibility of the patient at any given time for the continuance of the habit diminishes in direct proportion as the nerve degeneration has become deep-seated and inveterate."

Dr. Norman Kerr, of London, says: "The permanent impairments of the nervous system in inebriety are described as phases of alcoholic dissolution, a retrogressive pathologic process. In the etiology of alcoholic nerve degeneration there are two elements, viz., the effects of the direct pathologic action of alcohol on the newer tissues, and of the impoverished blood supply. These are chiefly the breaking down of the nerve elements, with thickness and inelasticity of the blood vessels and overgrowth of the connective tissue. The gradual appearance and development of an appetite for excessive drink often indicates brain degeneration."

Dr. B. Clark, of New York, in speaking of alcoholism says: "It is responsible for over one-half of the sum total of human miseries." Again he says: "It is a disease that can be managed much more readily than imagined and yet a disease which few physicians know how to handle when called upon to do so."

Henry O'Neill, of Belfast, cites among police cases, the fining of a woman 10s. for drunkenness who had been convicted of the same offense ninety-two times. Another woman fined 10s. whose previous record was 140 convictions, and still another fined 20s. who had been before the court on a like charge 170 times. He then states that nearly all the highest penal records had been of women and draws the conclusion that fines and punishment are failures as reformatory measures. Therefore it is said: "It is inevitable that drunkenness is a disease, not a crime. In German, Austrian, Swiss, Italian and Dutch law, there is a