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HOW SHALL WE OPERATE FOR MAMMARY CANCER, AND WHEN?

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HOW SHALL WE OPERATE FOR MAMMARY CANCER, AND WHEN?*

At a meeting of the Medico-Chirurgical Society last summer I exhibited three mammary tumors I had recently removed, and at a meeting later on another, removed a few days before. More or less interest attached to all these tumors intrinsically; but my purpose this evening is not to discuss the tumors, but the method of their removal. The breasts had been amputated by the old method, leaving the axilla intact, except in one case in which I removed several greatly enlarged axillary glands.

In the discussion that followed most of the members expressed emphatically their preference for the "completed operation." I objected that the "completed operation" is not only far more dangerous than the old one, but in an important sense is incomplete after all. As it is usually done, the axillary glands and some tissue about them are removed. The intervening lymphatic ducts, that may be full of

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cancer cells, especially at their valves, are at best only partially removed; the alveolar buds that shoot out from every gland from the moment it enters the process of becoming fixed are cut or torn through, causing cancer cells to be scattered over the surface of the wound, soon to become fixed as new foci. Furthermore, the supra- and sub-clavicular glands that in many, perhaps most of the cases become infected sooner or later are in the "completed operation," as it is ordinarily done, left intact; even Gross, a most earnest advocate of this operation, removes these glands only when they are palpably enlarged. I mentioned a case that represents a large proportion of all mammary cancer cases, in which I removed the breast without opening the axilla, some years ago. Two years later I removed enlarged supra- and sub-clavicular glands, the axillary glands having in the mean time enlarged very little—too little to have attracted the patient's notice.

Since the discussion referred to, I have taken pains to examine this subject more thoroughly, and have come to the conclusion that Butlin uses a not too strong expression when he calls the "completed operation" a "surgical blunder."

In order to examine systematically the con-

ditions that bear upon the question of "clearing out" the axilla, all mammary cancer subjects may be divided into four classes: (1) Those in which the disease has not only infected the axillary glands, but by metastasis or otherwise has involved internal tissues and organs; (2) those in which these glands have become infected, but in which the disease has gone no further; (3) those in which metastases have occurred without infection of the glands; (4) those cases in which the disease is as yet limited to the mamma.

It is clear enough that every case belongs to one or the other of these classes, but of course it may be impossible to determine to what class any given case belongs. Practically, however, the doubt in any case must be held as against the operation of opening the axilla. This will become more apparent further on.

The cases of the first class are plainly not operable.

In those of the second, if clearing out the axilla and removing every gland in the whole neighborhood of the diseased breast and the tissue around them as well were to complete the operation as the term implies, it would certainly be justifiable, provided the mortality after this procedure be not too great. As

to the pertinency of this proviso, let us see what the "completed operation" really involves:

"According to Mr. Banks, of Liverpool, one of its oldest and most earnest advocates, the attitude of this innovation in regard to removal of a cancerous mamma is that the integuments are to be sacrificed without heed to the question of covering the wound, that the fascia is always to be dissected from the pectoral muscle with as much fiber of the latter as may be deemed advisable; and whether involved or not the axilla is to be cleared, not merely of glands, but of all its tissues—nerves and vessels excepted—with a completeness equaled only in a dissection for anatomical demonstration." (R. M. Hodges, Boston Medical and Surgical Journal, November 29, 1888.)

Dr. Gross, in his admirable paper (American Journal Medical Sciences, April, 1888), written, as it appears, much for the purpose of setting forth the advantages of the "completed operation," gives statistics of local recurrences as follows:

Of 409 cases, partial or total extirpation of mamma without glands was done in 96 cases.

Recurrence in or near cicatrix, 46 cases = 47.91 p.ct.
" cicatrix and glands, 31 cases = 19.79 "
" glands alone..... 19 cases = 32.29 "

Of amputation of breast with removal of glands, 313 cases.

Recurrence in or near cicatrix, 235 cases = 75.08 p. ct.
" glands alone..... 38 cases = 12.14 "
" both places..... 40 cases = 12.77 "

In connection with this table Dr. Gross says there are two interesting practical facts. In the first place, where the breast and glands are removed, the disease reproduces itself in an average of 6.4 months, while, when the breast alone is extirpated, recurrence follows in 7.7. Secondly, in the former operation, the axillary glands are the seat of recurrence in twenty-five per cent of all cases, while they are affected in fifty-two per cent of the incomplete operations. Hence he concludes, "that by clearing out that cavity in all operations we may naturally expect to diminish if not prevent further local dissemination."

Holding a different view from that of Dr. Gross as to the advisability of clearing out the axilla, I can not reach the same conclusion from these premises. In the first place, it is seen by his own figures that recurrences in glands take place about half as often after the completed operation as after the operation that does not touch the axilla. In the second place, by the same figures, there are over fifty per cent more recurrences in and near the cica-

trix after the former than after the latter operation.

These figures, I believe, show the impossibility of doing any operation that deserves to be called "completed" after the invasion of the axilla has taken place. They show too, that the number of local foci, so far from being diminished, is actually very much increased. These facts, taken with the other very important fact that the immediate mortality after the "completed operation" is double (Butlin) that after the incomplete, seem to utterly condemn the former as a life-saving measure in the class of cases under discussion just here. But will it lessen the suffering of the patient? At first sight it might be supposed that removal of axillary glands would prevent the severe suffering incident to pressure of these glands upon the axillary vein and plexus of nerves; but as matter of fact it simply substitutes a mass of cicatricial tissue for the indurated glands, which certainly causes as much pressure as they do, and in destroying the continuity of the lymph ducts favors rather than otherwise the edema of the arm.

Hodges, in a very able paper, says "Edema of the arm, the worst and most distressing incident of cancer of the breast, rarely fails to

accelerate the fatal event. It is more likely to occur when the incision has been extended into the armpit than when the disease has been left to itself." According to Banks (British Medical Journal, December 9, 1882), "it is but right that while pleading for an early and free operation one should admit that if it fail thoroughly to cure it does not improve the patient, but makes her decidedly worse."

The third class is made up of cases in which metastasic tumors have occcurred, and without antecedent glandular involvement. These are clearly not cases for operation. As to the relative frequency of their occurrence Dr. Gross, in the paper referred to, has given statistics. In one set of 52 cases there were 7 in which metastases had occurred without implication of the glands. In another set, taken from Von Zörök and Wittleshöfer, in which "of 191 cases without glandular involvement metastasis had occurred in 62.3 per cent." Buttin, in his work "On the Operative Treatment of Malignant Diseases," says "the proportion of cases in which the disease appeared in the axilla without recurring in or near the scar was singularly small, scarcely more than three per cent." Thus it is seen that there is a large proportion of cases which, before the develop-

ment of cachexia that always sooner or later follows the infection of internal organs, may seem, on account of absence of glandular implication, especially proper for operation, but which are absolutely unfit for any kind of surgical procedure; and the doubt in regard to these cases must most certainly be held against doing any operation that is attended by a high immediate mortality.

The fourth class embraces those cases in which the cancer is as yet strictly local. By almost universal consensus among pathologists cancer is at first local, and as long as it remains local thoroughly eradicable. Now I think that it has been satisfactorily demonstrated above, that after the axillary glands have once become involved it is at least highly improbable that the disease can be eradicated from this locality by any surgery however thorough; and this truth involves another that is highly probable, that the cases in which cures have followed the "completed operation" were those in which the axilla had never become implicated, and were therefore curable by the minor and far less dangerous operation properly done.

Before proceeding to make a comparison between the percentage of cures after the respective operations, it is but just to Dr. Gross to say

the results obtained in his own 43 cases are the best that have been recorded. In these operations there were only two fatal cases, 32.55 per cent of recurrence in and near the cicatrix, and 21.05 per cent of cures.

Of 311 cases given by Butlin, the breast alone was removed in 141, and 12 died of the operation. The breast and glands were removed in 170 cases with an immediate mortality of 39. For comparison of percentage of cures 242 of the whole number are available, 98 in the first set and 144 in the second. Of these, in the first there were 19 cures tested by "the three years limit," and 11 in the second, or 19.5 per cent of cures in cases in which only the breast was removed, and 6.15 per cent in which the breast and glands were removed. Buttin gives another set of cases treated by Dr. Bougard, of Belgium, with caustics. Of 162 cases, 62, or nearly 40 per cent, were free from recurrence three years after treatment. Mr. Buttin was inclined at first to doubt the accuracy of these figures, but on thorough examination of Dr. Bougard's book became convinced of their genuineness, and was led to believe this unparalleled success to be due to the author's careful selection of cases for treatment.

Bougard's experience indicates the localism of the disease in its early manifestation, and the possibilities of a treatment that does not touch the axilla.

There is a moral aspect that must not not be left unconsidered in the discussion of this question. Every woman with a mammary tumor has an indisputable right to a frank and honest statement from the surgeon to whom she applies of the dangers of the operation he may propose and her prospects as to ultimate cure. Let us suppose a woman about forty years old applies to a believer in the "completed operation" with a tumor about the size of a walnut she has just noticed for the first time. He must tell her the tumor is very probably, though not certainly a carcinoma, and that it should be removed at once; that the operation kills about ten per cent of cases; that, if it is done by Gross' peculiar method, she must be under treatment for months if she escapes the immediate danger of the operation, and finally, if she is not radically cured she will be put in a worse condition than before.

I do not believe one woman in a hundred, after getting this information, to which she has a perfect right, would submit to the "completed operation." She would most probably

delay the matter till too late for any operation to avail. On the other hand, if the surgeon happens to believe that extirpation of the breast alone, properly done, is the best procedure, he can say, as I firmly believe, there need be no mortality at all after the operation, save that which may come from shock or from the anesthetic; that the patient will recover in a week; and finally, that recurrences, as evidenced by a great mass of statistics, are certainly not more frequent after this than after the other method. There can be no doubt that the effect of a general adoption of the minor operation will be to encourage women to submit to it at the earliest manifestation of the disease, and at the time therefore when her chances for permanent cure are best. As the case stands now, the subjects of mammary cancer, frightened off by the knife in the hands of the regular surgeon, are flocking to the quacks, who are getting results that, say what we may, are sustaining their business wonderfully well.

In order to give some freshness to this discussion I wrote to a number of prominent men in different parts of this country, asking data obtained in their own experience on two points, namely, the relative frequency of serious axillary complication in mammary cancer; and sec-

ond, the comparative liability of recurrence of skin epitheliomas after extirpation by the knife and destruction by caustics. The purpose of the second question will be seen further on. Replies were received from most of these gentlemen, and though none contained information available as statistical material on the first point, they nevertheless contained valuable matter. On the second point three important replies were received.

As my paper is meant to be short I can not devote the amount of space I would like to the letters of the gentlemen who have so kindly answered my inquiries, but will endeavor to do them justice.

Maurice Richardson, of Boston, author of a very valuable paper on the surgical treatment of malignant growths, in the Boston Medical Journal, August 30 and September 6, 1888, says serious axillary trouble (edema of the arm and severe pain from pressure on branches of the brachial plexus) occurred in not less than half the inoperable cases he had seen. He says, further, "I always dissect out the axilla in every case, and I have never failed yet to find, even in the earliest cases, some infiltration these glands."

Hunter McGuire says, "I am always very

careful to remove any *enlarged* glands in the axilla when I operate for cancer." (Italics mine.)

H. H. Mudd, of St. Louis, writes that induration (of the axillary gland) "becomes a serious factor in perhaps one third or one fourth of the cases." He says, further, he makes more thorough search for indurated glands than formerly, and rarely fails to find them. When he does find them he dissects out the axilla as completely as possible.

Bache Emmet writes, "I have never seen a recurrence in cases in which I had even felt enlarged glands," and further on, "I have never failed to see recurrence when any enlarged glands were left." He adds this interesting statement: "I have several times found many glands enlarged, and at a subsequent examination, after some months' interval, have been unable to find any thing like the same number," and this in undoubted cancer while in active progress.

H. O. Marcy writes, "I am sure the axilla, in the few non-operative cases where I have known the results, has almost without exception become involved," but that "quite a number, where the gland was removed early and thoroughly, have continued well during a considerable number of years, although there could

have been little question of the character of the disease."

Conner, of Cincinnati, writes, "I can safely say that in nineteen out of every twenty cases, the axillary glands have been affected and infected."

Ransohoff, of Cincinnati, says, "I believe every lymphatic enlargement in the axilla is serious in mammary carcinoma. I go even further in the conviction that infiltration undiscoverable by palpation is present at an early period of the clinical histories of these cases; on this conviction, I clean out the axilla in every case, irrespective of the presence or absence of enlarged glands."

W. M. Polk says, "All my cases have shown glandular enlargement in the axilla sooner or later; even those operated upon have in the end had recurrence, generally in the lung."

Maury, of Memphis, says, "Out of a dozen cases operated on for cancer of the breast, I have not seen death or serious derangement of health ensue upon axillary involvements." In only three of these cases was the axilla cleaned out. In the other nine no enlargement of the glands was found on careful examination.

Referring to the strong paper against the "completed operation" (*loc. cit.*), R. M. Hodges

writes, "I have never had any reason, since it was written, to modify my opinion, except by way of feeling still more strongly its correctness. I have seen in the columns of the Boston Medical and Surgical Journal, in reports of Society meetings, some evidence, as it seems to me, that those gentlemen in the city who have advocated the so-called completed operation are weakening on their estimate of its safety and justifiability."

Referring again to the statistics of Gross, it will be seen that of 313 amputations of the breast combined with extirpation of the glands, recurrence was met with in 275, or 87.86 per cent. These figures include his own cases, and he states that if they are deducted it will be found that in 94.47 per cent the disease recurred in or near the cicatrix." Now we learn, elsewhere in the paper, that 257 of the 313 cases of "completed operation" included besides his own 43 cases those of Banks and Küster; and these two gentlemen, it must be remembered, are earnest advocates of this operation. The conclusion then is necessary, either that Gross was far more thorough in his work of clearing out the axilla than these other gentlemen, or that his greater success was attributable to some additional modification. It would

naturally occur to those who believe in Gross's "dinner-plate" operation that his success was due to his free sacrifice of integument; but this was not his own way of thinking, for after examining Bank's record he says, "I felt as if I had possibly sacrificed too much integument, and I have in four recent cases so far modified my operation, the skin in none being apparently affected, as to save a sufficient amount of that structure to admit of bringing the wound nicely together without tension."

It seems then that we must accept the alterative of Gross's greater thoroughness in clearing out the axilla. Though, as his record is small compared with the combined records of excellent surgeons who are as firm believers as he in the "completed operation," we are inclined rather to the view that he had had an extraordinarily good "run" of cases, in which perhaps the axilla was involved in very few. Certainly the statistics I have quoted go far to verify the statement already made, that where the axillary glands have become infected it is very difficult, if not impossible, to do an operation that deserves to be called "completed."

To my question as to the comparative frequency of recurrence of skin epithelioma after removal by the knife and by caustics, I received

a number of replies, several to the effect that the writers had always used the knife exclusively. Among these were Agnew, of Philadelphia, who said, however, that recurrences after the knife in his experience had sometimes taken place in cases of epithelioma on the lower eyelid, near the inner canthus.

Of those that had used caustics, Hunter McGuire said, "I think epithelioma removed by caustics or cautery less apt to return than when taken out with the knife." Ransohoff said, "My experience has led me to value highly the use of caustics in superficial epitheliomas of the face, lips, and external ear." George Henry Fox says that "extensive cases of epithelioma are more liable to return after the knife than after the thorough application of a caustic."

My aim in putting this question was to collect testimony acceptable to the profession as to the correctness of the belief held by some, that cancer cells infiltrating the tissues surrounding an epithelioma are destroyed by the inflammatory process set up by caustics used for the destruction of the growth. I find, however, that very few surgeons have used caustics and still fewer have written on the subject. Bougard, whose cases have been mentioned,

and Dr. J. N. Bright, of Lexington, whose very scholarly work on Cancer, Its Classification and Remedies, are all that I know of.

Dr. Bright wrote, *loc. cit.* p. 11, that after using the knife twenty years he became dissatisfied and disheartened, gave it up, and turned his attention to a more thorough research into the nature of cancer and a different mode of treatment. He devotes a chapter to his record of cases treated by caustics, which is certainly excellent. My own experience in the treatment of skin epithelioma by caustics has been very satisfactory. The anatomical facilities, however, for regional infection in the tissue around a mammary cancer are far greater than in the case of skin epithelioma, and the efficiency of caustics in the latter does not imply their efficiency in the former class of growths. I shall therefore, for the present, adhere to the prevalent practice of removing mammary cancer with the knife, cutting widely of the tumor. In dealing with recurrences, however, about the site of the disease, which usually occur in the skin along the line of the incision, I shall use caustics.

The purpose of this paper is to show that in view of the exceedingly small prospect of effecting a cure by any operation when the dis-

ease has extended beyond the tissues immediately about the gland, and of the certainty of doing harm when a permanent cure is not obtained, that no operation is justifiable; but that in cases in which it is reasonable to believe the disease is limited to the gland, the minor operation should be be done, for if it is so limited, the minor operation, properly done, will do all that can be done by the major with much less danger to the patient; and should the event show that the disease had not been thus limited, it will not have accomplished less.

The mind of the laity is deeply impressed with the belief that cancer of the breast is not cured by the knife, and victims of this disease, not knowing that the trouble comes rather from its abuse, naturally hesitate and delay when prompt action is of utmost importance; but I firmly believe that when surgeons shall have refrained from injudicious operating the time will soon come when these unfortunate women will fear delay and not the knife. Our records then will be far better.

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