the interval which may take place between the primary amputation of a breast for cancer and its recurrence in the scar or second breast, when such occurs, is most uncertain. That whilst in half the cases tabulated recurrence took place in five years or less, in the second half the interval before recurrence appeared varied from six to thirty-two years; and that in at least two-thirds of these cases it occurred after ten years; and also that when second or third operations were undertaken the prospects of life were not bad (Table II, Group II and Group III).

With respect to the seat of the recurrence, it seems that such appeared in or about the scar of the original operation in 14 cases; in the scar and axilla in only one case; in the sternum in 3 cases; in the second breast in 10 cases, and in 5 of this 10 the scar of the first operation was likewise involved.

I would here ask the surgeons who advocate the clearing out of the axilla of all lymphoid tissue as a rule of practice in every case to consider the fact given above; in only 1 case was the axilla cleared out in an operation for a recurrent affection, and, as already described, it is not my custom to clear it out in all; and yet these results do not suggest an inadequate operation.

I bring this paper before the profession with no little pleasure, for it shows that operations for cancer of the breast, when undertaken at an early period of the disease, are not so unsatisfactory in their ultimate results as we have been led to believe. To have been able to tabulate in Group I 17 cases of operation without evidence of recurrence in 9 cases from five to ten years, and in 8 cases from ten to twenty years after the primary operation, and to add that 13 out of these 17 cases are now alive and well, with probably some years of enjoyable life before them, is somewhat startling.

To add to these conclusions the assurance that should recurrence of disease appear after the primary operation, the prospects of prolonged life without second or third operations, as shown in Table I, Group II, are neither unreasonable nor unsatisfactory; for only 2 of the 8 cases so tabulated had survived the first operation less than ten years, and 6 had survived from ten to thirty-six years, and 5 of these had apparently some years of life before them.

To show, moreover, as in Table II, Group II, when recurrence of disease takes place and has been treated by second or third operations much benefit may be conferred, is likewise encouraging, for the study of this table which I ask you to make will suggest that second, and even third, operations undertaken as soon as recurrences appear are often followed by fairly long periods of enjoyable life, for in five or six of the cases tabulated the patients were well and in good health five or six years after these operations.

Where the second breast has become involved a like principle of practice is also suggested. In 4 out of the 10 cases tabulated no operation was justifiable, but in 6 cases the second breast was removed, and in 4 of these cases there were no indications of recurrent disease five years, six years, two years, and three years respectively; so that it may fairly be said that operations on the second breast are not only justifiable, but conducive to prolonged life. For my own part, I am so much more satisfied with the results of my own practice since I have put together the materials embodied in the paper I have just read, and brought out the results of its analysis, that I do not feel disposed to deviate from it in any great degree unless the advocates of what I must describe as an over-zealous practice can prove to me that I am wrong and that they are right by the publication of material facts better than those I have now recorded.

By way of summary I should like to express my conviction that the results of operations for cancer, whether of the breast or elsewhere, would be much better than they now are if they could always be undertaken during the early development of the disease, as illustrated by the majority of the cases in my tables—Groups I and II; that every breast tumour, neither clearly inflammatory nor encapsuled, which seems to involve gland tissue, and may therefore be cancerous, should be at once explored and removed, if found to be cancerous, with the whole gland; and that recurrent growths when localized should be similarly treated.

In advanced and neglected cases, where the lymphatic glands and covering integument are involved, Moore's, Banks's, Halsted's, or Gould's so-called complete operation may be called

for, but its results are not by any means so likely to be as favourable as those I have reported. Lastly, in cases of recurrence not favourable for operation, unless the removal of the ovaries can be shown in the future to be successful, the x rays should be employed, for the benefit which has been derived by this treatment when judiciously applied by men of understanding has, in my own experience, been so successful as to raise hopes which I hardly like fully to express, and at the same time seems to be free from danger or serious consequences when utilized by those who know the dangers of penetrating rays carelessly employed, and the difficulties with which the practice bristles. I must, however, add that the influence of the rays, to make them effective, must be maintained for several months after it has seemed to be beneficial; a three-months course, with about three applications a week, appears to be the shortest from which any permanent good is to be expected, and this treatment is full of hope.

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A NOTE ON THE OPERATION FOR REMOVAL OF MALIGNANT DISEASE OF THE BREAST.

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MUCH has been written on this subject, but still considerable differences in practice appear to exist among surgeons who are in the habit of performing what has been termed the "complete operation" for removal of malignant disease of the breast.

While some authorities are strongly opposed to the removal of more than the fascia, with perhaps a thin layer of the fibres of the pectoralis major—on account, it is urged, of the subsequent impairment of the movements of the arm—others recommend that the sternal portion of the muscle should in all cases be removed, while they carefully preserve the pectoralis minor, or occasionally divide the latter muscle in order to more fully expose the axilla. Others, again, make a practice of removing both pectorals with the breast as a routine procedure. It is to the removal of the pectoralis minor that I wish to draw attention.

If it be considered necessary to remove the sternal portion of the pectoralis major (and this, I believe, is the practice most general at the present time) a great advantage is gained by removing with it the whole of the pectoralis minor; by so doing the operation becomes more thorough in that the clearing of the axilla from the clavicle downwards is greatly facilitated. Other advantages of the procedure may also be mentioned: (1) At all times it is difficult to close the wound owing to the extensive removal of the skin; this is rendered considerably easier in the absence of the pectorals. (2) When the pectoralis minor is left, the lower border of it is apt to form a prominent cord of indurated tissue which overhangs the axilla, and this at times is a cause of considerable discomfort to the patient.

During the last two years I have in almost all cases removed the sternal portion of the pectoralis major, and in the more recent cases it has been my practice to remove both pectoral muscles, but it is too early at present to note what improvement there is in immunity from recurrence.

The chief disadvantage that can be urged against it is that it renders an already extensive operation more extensive, but this is more than compensated for by the shortening of the time occupied in clearing the axilla, for instead of working in a limited space, the whole of it is laid open, and the fat and fascia cleared from the axillary vessels with greater precision and rapidity.

From the point of view of the subsequent movements of the arm, the pectoralis minor has practically no influence, owing to its insertion into the coracoid process, so that in this connexion there does not appear to be any reason for preserving it; and, for the same reason, the division of it and subsequent suture has little to recommend it.

It is important to inquire what the after-condition of these patients is when both pectorals have been removed. I have

been surprised at the slight amount of inconvenience they suffer; in fact, in many cases it does not appear to be greater than when the muscles have been left intact. The explanation of this, I believe, is that in the majority of the cases in which the pectoral muscles are preserved, the nerve supply of these muscles is cut off. If it is so important to preserve these muscles, on account of the impairment in the movements which results from their removal, it must be equally important to preserve the anterior thoracic nerves which supply them, yet this point is not emphasized in any of the recent articles or standard works on the subject.

It would be interesting to know in what proportion of the cases operated upon without removal of the pectorals these nerves escape injury when no precautions are taken to ensure their safety, and when the procedure of clearing the axilla is thoroughly performed. From my own experience—and I have paid particular attention to this point—I have found it anything but easy to avoid dividing these small nerves more or less completely when working in the hollow of the axilla. Now, if this frequently occurs, as I believe, it is an additional argument, if such is needed, in favour of the more thorough procedure of removing both the muscles as a routine measure.

CASE OF VESICO-VAGINAL FISTULA, CURED BY A METHOD BELIEVED TO BE NEW,

WITH REMARKS ON THE SURGICAL TREATMENT OF VESICO-VAGINAL FISTULAE.

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THE successful result of the method adopted in the case to be narrated has prompted me to put on record the full details of the operation. Reference to the literature of the subject will show how much ingenuity has been displayed in devising different methods of closing vesico-vaginal fistulae. Many, however, are modelled on what may be termed the "old operation" of Marion Sims and Simon, which was devised and practised at a time when operative gynaecology was in its infancy. The operations of vaginal hysterectomy and colpotomy have demonstrated the ease with which the bladder may be separated, both from the uterus and the vaginal wall, without any interference with its functions. This important fact gives the key to the treatment of vesico-vaginal fistulae.

In closing an opening in any hollow viscus two important surgical principles must be borne in mind: (1) To avoid all tension on the stitches; (2) to avoid passing the suture material through the inner lining of the viscus.

It is the absence of tension on the sutures, and the employment of Lambert's method of applying them, which has made the operation of closing the bladder in suprapubic cystotomy so successful in aseptic hands.

In operating in cases of vesico-vaginal fistulae the principle to be adopted should be a free separation of the bladder from the uterus and vaginal wall in order to remove all tension, and separate suture of the opening in the bladder with Lambert's sutures. The bladder sutures should be inserted transversely, whilst the vaginal walls should be stitched in a longitudinal direction. Transverse suturing has probably another advantage, for the majority of the muscular fibres at the base of the bladder run in a transverse direction; hence sutures so inserted will tend to produce more accurate apposition. This prevents the two lines of stitches being opposite, and is therefore less likely to favour leakage, should one or more of the stitches become loose.

The operation of paring the edges of the fistula (which frequently fails), should be given up even in fistulae of small size, and in those of large size the paring means the sacrifice of valuable tissue, and the increase of the size of the opening.

Where the fistula has existed for some time, the vesical and vaginal mucous membranes become continuous around the orifice and the bladder adherent in this situation. This adhesion of the bladder prevents the orifice of the fistula from closing, and therefore calls for free separation to promote union. In recent cases the absence of such adhesion in all probability

Fig. 1.

Fig. 1.—A, Urethra; B, C, line of incision; D, E, U-shaped flap; F, cervix drawn down by vulsellum; G, fistulous opening.

Fig. 2.

Fig. 2.—H, H, Flaps of vaginal wall, separated from the bladder; L, bladder; J, J, U-shaped flap stitched to orifice of fistula. The dotted line shows the position of the incision before the flap was turned up to close the fistula. Its mucous surface now becomes part of the lining of the bladder.

Fig. 3.—K, K, Line of stitches fixing the vaginal flaps to one another and to the cervix.