

operation occasionally with normal salt solution. It is true that this method of operating makes a monstrous wound, but the amount of blood lost is slight, and none of my patients upon whom I have operated in this way have suffered from acute anæmia, or greatly from shock.

I have now removed the whole breast, the surrounding area of skin, the whole pectoralis minor muscle, and the connective tissue in the axilla. These are the tissues especially likely to be the seat of recurrence of the disease. You might think that these patients would be greatly disabled by such an extensive removal of muscle, but such is not the case; on the contrary, the motions of the arm are exceedingly good shortly after the operation; all the motions can be made with comfort, although, of course, the muscular power of the limb is diminished. The incisions are not made with reference to the closure of the wound, but with reference solely to getting rid of all the disease. If we cannot bring the parts together completely, the open portion can be grafted with skin after two or three weeks. This might be done at the time of operation, but would prolong it unduly. I attach great importance to the accurate opposition of such skin flaps as one intends to bring together, and although it is a slow process, it is one which well repays the surgeon for the additional time and labor expended. I find that I can secure a satisfactory coaption of the edges of this large wound. Having done this, a drainage tube is inserted, and the wound once more irrigated with salt solution before the application of the usual dressing of sterilized gauze and cotton. These cases all do better under very bulky dressing, and especially, the first dressing. I think one can hardly be too generous in his application of a compress or covering in these extensive flap operations. Notwithstanding the length and extent of the operation, the patient's pulse appears to be perfectly normal.—Charles McBurney, M.D., in *Inter. Jour. of Surg.*

CELIOTOMY WITH AND WITHOUT DRAINAGE.

Dr Czempin refers to the great fluctuations of opinion of authoratative operators, and notes that drainage is being less and less employed each year. He refers to the method advised by Säger (the glass drain) and Mikulicz (the iodoform-gauze drain), and also to the indications for drainage as pointed out by Veit, Olshausen, and Martin. He notes that Säger employs this form of drainage no more; that he has practically discarded drainage; that Veit believes the indications are very few; and that opinions are so varied that there are no fast rules to follow in any particular case.

Czempin, through a period of nine years of operative work, has at times followed the advice of each of the above investigators, and has carefully followed the subject. He has found that each year fewer cases require the drainage-tube. From his observations the cases in which drainage may be indicated are divided into two great groups. First, operations upon non-infectious tumors, with unfavorable complications caused by the condition of the relations of the operation wound. Second, operations upon infectious tumors or those thought to be infectious, and operations complicated through injury to the intestine, the escape of pus or decomposed fluid. First, complicated non-infectious operations. To this group belong (a) intra-ligamentary-developed new growths resulting in the necessary extensive separation of the pelvic connective tissue; (b) where the new growth has extensive adhesions with neighboring organs and the parietal peritoneum, therefore necessitating extensive injury to the peritoneum. Under these headings the writer reports a series of cases with results which vary too much to be of practical use. In the first group, the separation of the pelvic connective tissue and the extensive wound results in the formation of the best culture medium for infectious organisms, and that infection takes place either through faulty technique, infection from without, or through intestinal bacteria, the result of injury to the intestine. He says that it is doubtful whether drainage does good in these cases; that the resulting exudate is quite as readily absorbed and eliminated by nature. As regards the second group of cases, he refers to the statistics of Zweifel of one hundred and three adnexa operations, with one death, where the rubber drainage-tube was employed, but says it proves nothing. The method of Schauta, Wertheim, and Fritsch (the microscopical examination of pus during operation) he believes has the correct object, but is not positive; that the organisms may not be virulent, they may be few in number and not found, and a certain number of cases are thus unnecessarily drained. The use of drainage complicates the operation, often causing suppuration in the abdominal wound, fistula, and hernia. Finally, he concludes that the result in complicated celiotomy is only rarely improved by the use of drainage, and that in the greater number of cases where it is used it is not essential. If virulent organisms are present, it can scarcely save life; if the virulence is extinct, it is not necessary. Where in the removal of a non-infectious new growth the pelvic connective tissue is separated, drainage is not only unnecessary, but often does harm. Where there is a closed-off acute inflammatory process in a tumor in the peritoneal cavity, infection is to be feared. Particular caution should be taken that the least amount of the peritoneum is infected, and the