

hours the gauze drain should be withdrawn more slowly.

Closing abdominal Wound.—I favor any method which will coapt all the tissues of the abdominal wound in the exact relation and to the same extent that they were originally. This can be accomplished by including all the tissues, skin, fat, superficial and deep fascia, muscle, subperitoneal fascia, and peritoneum in a row of silkworm gut sutures placed one-third of an inch apart. If I have some of my own specially prepared antiseptic catgut at hand, I frequently sew the peritoneal layer separately with a running thread of the gut and then include the remaining layers in the row of silkworm gut. This is especially desirable if one has a long wound in a hemorrhagic patient. It completely closes the abdominal cavity from any oozing from the abdominal incision. It also obviates the necessity of the silkworm gut sutures entering the peritoneal cavity, thus removing the remote danger of adhesions of the abdominal viscera to the points of peritoneum penetrated by the stitch, and danger of septic material gaining entrance to the peritoneal cavity along the route of the stitch, in case of external skin or mural supuration. I am careful to include all the tissues of my wound in order that the abdominal walls after incision will be as thick at the wound line as at any other position. If it is not, there will be a concavity at this point on the peritoneal surface which will act as a point of resistance, and which will favor abdominal pressure on the wound and from which ventral hernia is more liable to result.

Before tying the silkworm gut sutures, I render the wound aseptic by washing thoroughly with 1 to 1,000 bichlorid solution (employing care that none of the poison enters the peritoneal cavity) and finally rinsing the wound with sterilized water. After tying the main sutures of the wound I always put in superficial stitches of fine silkworm gut wherever they are necessary in order to insure coaptation of the skin edges.

Dressings.—Sterilized iodoform powder mixed with boric acid is dusted over the wound. Loose sterilized strip gauze is placed over the wound, and several inches around it, and over this is placed a dozen thicknesses of sterilized sheet gauze. This is held in place by sterilized muslin straps which are pinned to broad bands of adhesive straps attached to the skin on the outer borders of the abdomen. This prevents the dressing from becoming displaced by any movements the patient may make, and it also supports the wound and takes the strain off the sutures. Over this is placed an abundance of sterilized cotton and over the cotton in turn is placed a snug abdominal bandage with a perineal T to keep it in place.

AFTER-TREATMENT.

For detail after-treatment I must refer the reader to my article which appeared in the JOURNAL two weeks ago.

Dressing the Wound.—The wound is not disturbed until the fourth day unless there are symptoms indicating that it is not doing well, viz., pain, fever, etc. At the end of the fourth day the nurse uncovers the wound carefully, washes it thoroughly with alcohol, and 1 to 2,000 bichlorid solution equal parts, with a wad of sterilized cotton on the end of dressing forceps. It is then dried carefully and redusted with sterilized iodoform and boracic acid. It is then re-

covered with fresh sterile gauze. On the seventh day the same process is repeated and the stitches removed. After that it is washed off in the same manner every day until it is perfectly well.

ANALYSIS OF CASES.

I have removed the appendages for bleeding fibroids of the uterus in 65 cases. These cases have all recovered from the operation. The history, subsequent to the operation of a large per cent. of these cases, I have been unable to trace.

Cases 26, 28, 47, 48, 55, 61, 64, or 14 per cent. continued to menstruate indefinitely after the operation. Their symptoms were so severe in 26, 47, 48, 55, or 6 per cent. of the whole number that hysterectomy was afterward employed. In none of these cases was hysterectomy found necessary because of increase of the growth of the tumor. In the remaining cases, so far as I have been able to trace them, the tumors have reduced in size, hemorrhage has ceased and the patients have been materially benefited while in a small per cent. actual symptomatic cures were obtained.

BASSINI'S OPERATION FOR INGUINAL HERNIA PUT TO THE CRUCIAL TEST.

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The radical cure for inguinal hernia has been a problem which called forth the ingenuity of the surgeon from time immemorial up to the present day. The very fact that so many operations and varieties of technique have been devised, showed most positively that there was some fundamental principle at fault and every new operation or a modification was in the hope of correcting it.

Like all difficult topics in surgery which are to be solved, the error is made of delving in a world of intricacy and complexity for a difficult solution, when as a matter of fact a simple expedient is awaiting its discoverer under a misty cloud. Sims' speculum is a most excellent example, demonstrating what a wonderful scope of utility such a simple instrument fulfilled. Most elaborate instruments have been invented and every possible means imaginable promulgated for the disposal of the sac and the obliteration of the canal in hernia; but in each instance there was a great tendency for recurrence and consequently a great percentage of failures. These results were not due to a lack of the requisite instruments; but to a wrong principle as a working basis. Not until Bassini devised his operation for inguinal hernia, was the true defect overcome, namely, restoration of the obliquity of the inguinal canal. This operation has an anatomical surgical basis and marks an era in surgery. It seems incomprehensible that such a simple variation in technique from older procedures, should not have been resorted to earlier.

Professor Bassini of Padua first described his new method for the radical cure of inguinal hernia at a meeting of the Congress of Italian Surgeons held in March 1888. He reported 102 cases in which the operation was successful. At a later time he was able to present the following unprecedented statistics on cases upon which he operated himself or his colleagues.

Of a total of 251 cases, there was no return after a period varying from one to four and one-half years in 108 cases. In 131 cases there was no reappearance in periods varying from one month to two years. In four cases the result could not be ascertained and there was a recurrence in only seven cases. Such statistics from so reliable an authority should convince the most fastidious of the superiority of this operation over all others. Fortunately it is assuming its proper place in the minds of surgeons throughout the world and beyond doubt is the one which will hold prestige for all time. The operation is the one almost invariably selected in the surgical clinics of Rush Medical College and as yet I have heard of no relapses.

I wish to report the following case, as the operation was performed on a very unfavorable patient with a most excellent issue and which in my estimation is of more moment, as far as the reliability of Bassini's operation is concerned, than positive results in a hundred favorable patients.

F. J. N., German, age 67 years, consulted me Aug. 31, 1895, for double inguinal hernia of some thirty years standing. The hernia on the left side was small and gave rise to no inconvenience; but the one on the right side was as large as two fists when descended and caused considerable annoyance in spite of truss support. Upon examination I found a large internal ring, capable of admitting four fingers, in fact pressure atrophy of the truss had transformed an oblique into a direct hernia. Patient was in a bad physical condition, being of a very neurotic temperament; business reverses having brought on great despondency. Had multiple strictures in the deep urethra and both lobes of the prostate were enormously hypertrophied, necessitating daily catheterization. Urine ammoniacal and contained large quantities of albumin and casts. Arcus senilis well defined. In spite of contraindications, the patient was determined to risk an operation for the radical cure.

Operation: Patient was admitted into St. Joseph's Hospital and operation performed Sept. 1, 1895. Chloroform anesthesia owing to renal symptoms. Incision four inches in length, extending over the inguinal canal parallel with Poupart's ligament. The cord was isolated from the sac, and which was easily accomplished as there were few adhesions, although the patient wore a truss for many years. After enucleation the sac was incised and found to be empty. At the internal ring the sac was transfixed and ligated with catgut. To make sure double sure, another ligature was thrown around the sac, one-fourth inch higher up. The sac was then excised, the stump iodoformized and allowed to return. Four external silkworm sutures were then passed through the skin and Poupart's ligament on the one hand, then underneath the cord and through the conjoined tendon and outer border of the rectus muscle, aponeurosis of the external oblique and skin of the opposite side. These sutures were caught with forceps to be tied later on. The cord was next lifted from its bed with blunt hooks. The skin and aponeurosis of the external oblique at the edges of the wound were well retracted. The internal border of Poupart's ligament and the conjoined tendon were scarified with a point of a needle to a degree just short of causing capillary hemorrhage. The inguinal canal was then closed by uniting Poupart's ligament to the conjoined tendon and the external border of the rectus muscle with thirteen interrupted sutures of heavy chromicized catgut. Great stress was

laid on putting two reliable sutures at the internal opening without causing compression of the cord. The cord was next placed in its new canal and the aponeurosis of the external oblique stitched over it with fine catgut. The external silkworm sutures *in situ* were now drawn taut, tied and the operation completed with a superficial row of interrupted horse-hair sutures approximating the skin. In dressing the wound care was taken to elevate the scrotum well with adhesive strips. The wound was hermetically sealed with collodion dressing.

After Treatment: Some four hours after the operation, when the nurse had momentarily left the room, the patient arose from his bed, went to the closet and evacuated his bowels. It was impossible to keep him in bed thereafter, and he took his daily walks *ad libitum*. Knowing that the damage, if any, was already done, and as he was a private patient, restraint by force would have brought censure upon me by friends, I left him to his own discretion. There were no unfavorable symptoms; the highest temperature was 100.6 degrees, on the fourth day. The silkworm and horse-hair sutures were removed on the seventh day after operation. The patient was discharged from the hospital three weeks from the date of operation. Upon examination there was not the slightest impulse transmitted on coughing, and the canal was firmly closed throughout and remains so up to the present day.

Remarks: This case teaches us several important facts. In distressing cases of hernia, advanced age, even if accompanied with pathologic conditions, should not obviate the benefits derived from an operation for a radical cure. In this instance the operation selected, namely Bassini's, and which appears to be well nigh infallible, must be given its well-deserved merits. However, I wish to call attention to the modifications in technique which I employed. First, as regards the external silkworm sutures as tension sutures. Again, I took into consideration the age and other conditions present which had a very deteriorating effect on the tissues, and resorted to scarification of tendinous structures to induce a hyperemia and consequently increased tissue proliferation; although it is well known that connective tissues generally are the most proliferative of all tissues; especially is this the case with tendons. Often in hernia operations, where there are few adhesions to the sac, it is enucleated almost bloodlessly and extravasation is at a minimum. How illogical to bring such parts together for a permanent union without a raw surface! I think that the success in this case is largely due to this recourse. I do not think that the pillars would have held intact during the great strain exercised after operation before there was any chance for union; except for the great number of catgut sutures about one-fourth of an inch apart, as ordinarily but three to four sutures are deemed sufficient; also to the fact that there were four rows of interrupted sutures in all; by far more reliable than either mattress or continuous sutures. Bassini's operation has the advantage over all other operations in that the canal is changed into a curve instead of a straight line, consequently the greater resistance to a relapse. Bassini leaves his patients walk in a week or ten days after operation with no bad results; but even in a week's time the healing process has been well established; but when great force is exerted before any regeneration has taken place at all is a most excellent test.