

majority of cases met with, have followed abdominal section, and prior to the last ten or fifteen years, abdominal section was not a frequent operation.

Statistics as to the frequency of hernia following abdominal section are not easily obtained owing to the difficulty of following cases after operation. Eddebohls puts the frequency in his own cases at about one in thirteen where diastasis of muscles followed, about one in twenty where protrusion followed. This corresponds pretty closely with statistics of my friend Mr. Christopher Martin, assistant to Prof. Lawson Tait, who puts it at about 5% where small hernia, and about 1% where large, bad hernia follows.

I think, taking the same class of cases, hernia will follow less frequently as the experience of the operator increases.

CAUSES.

Line of Incision.—Goodell (*American Syst. of Gynecol.*, page 803) says: "I am by no means sure that the subsequent cicatrix would not be firmer, and less liable to thin out into a ventral hernia, were the recti muscles incised instead of being avoided."

Tait usually makes his incision down along side of linea alba opening sheath of rectus, but does not attach very great importance to this as a preventive.

I should think incision through lateral abdominal wall outside recti muscles, more likely to be followed by hernia than median incision.

Length of Incision.—Mr. Christopher Martin mentions long incision as a cause. Majority of European operators think length of incision has little to do with causation. I think where incision is carried very low down, hernia is more likely to follow.

Method of Suture.—Martin, of Berlin, and Tait, think method of suture of little importance. In Hospital Bichat, Paris, peritoneum fascia and skin are usually sutured by three separate rows of suture. Olshausen and Veit, of Berlin, use three rows of suture, and consider this method of suture of importance.

Many of the New York operators suture in this way. Wylie lays particular stress on getting fascia of recti united evenly by a separate row of buried sutures, and says that for the past three or

four years, he has had no cases of ventral hernia following his abdominal sections.

There is no doubt about the importance of getting fascia evenly united, whether this is accomplished by one deep row of abdominal sutures or by a separate row of buried sutures. I think, too, where peritoneum is allowed to roll up between muscles close union is prevented, and you get a weaker wall.

Early removal of sutures is a cause of considerable importance. Sutures should be left in till the eighth day, or longer, if possible, and for this reason silk-worm gut being non-irritating is superior to silk as an abdominal suture.

In a poorly nourished patient on whom I did an exploratory incision, finding a retro peritoneal sarcoma, I removed the abdominal sutures on the seventh day, the wound having apparently healed by first intention; twenty-four hours after the omentum had forced its way out, separating wound in nearly its whole length, and when examined was found as a thick mass under the dressings. I tied it off, and again closed wound, the patient luckily going on as if nothing had happened.

Anything interfering with primary union, as stitch hole and mural abscesses, which are more apt to occur in very fat abdominal walls, will leave a weak cicatrix, more liable to thin out into hernia. Where the drainage tube is left in for more than three or four days, a weak point in wall would follow.

All cases where pedicle is treated by fixation in abdominal wound, as in hysterectomy, extra peritoneal, fixation of stump, are particularly liable to be followed by hernia.

In a case where I assisted Dr. Eccles, a very large cyst of kidney was opened and drained, sac was fixed in wound, a discharging sinus continued for several months. A moderate sized hernia formed after sinus had completely closed.

Intestinal flatus following operation I consider the main cause in one of my cases. A patient suffering from salpingitis and pelvic peritonitis from whom I removed intensely adherent appendages, March 7th 1891, began to show symptoms of intestinal obstruction in less than forty-eight hours after operation, regurgitation from stomach, great distention of abdomen, rapid, weak pulse, running about 150 per minute; very restless. I first tried enema and salines with no effect. I then gave