

things being equal, in direct ratio to the time required. Part of this danger may be due to anæsthesia, which itself is a serious matter, and partly to the more prolonged pressure and manipulation of the intestines. This is so much the case that one may almost say with certainty that in abdominal operations which can be performed without the intestines being seen, with an opening only large enough to admit one or two fingers, and which only require 10 or 15 minutes for performance, the death rate will only be about 2 per cent!

In the *intra-peritoneal* method, the stump must be constricted by a rubber band or some other force, while the tedious suturing of the stump is going on. This constriction of blood vessels, it is well known, as in cases where the Esmarch bandage is used on the limbs, is generally followed by paralysis of the blood vessels and consequent oozing, probably due to injury of the *vaso motor* nerves, so that the experience of many operators is that it is the rule to have oozing from the stump, no matter how carefully the borders are approximated.

Secondly, the *intra-peritoneal* method requires the leaving in the peritoneum or at least in the cut uterus, a considerable quantity of animal ligature, which in the process of manufacture has gone through putrefaction. Of course this is supposed to have been sterilized, but I am informed by Dr. Marcy, of Boston, that he has had several deaths from peritonitis, following his operations for cure of hernia; and on investigation he found that the so-called sterilized catgut was reeking with the germs of putrefaction.

In a matter of such vital importance, it is well for us to take the opinion of men who have had large experience; for, as a rule, experience in surgery is purchased at the price of life. Bantock, in the *British Medical Journal* for May, 1890, in discussing the matter, says certain cases of pedunculated fibroid might be treated by ligating and dropping the the pedicle, but some pedicles would be insecure and dangerous, no matter how carefully they were tied. He had tried both plans, and it was his want of success with the ligature that had led him to have recourse almost invariably to the *extra peritoneal* treatment. He had used the most powerful forceps; had compressed the pedicle to an eighth of

its original volume; had applied the double ligature; and had even stitched the peritoneal edges together, yet before the operation had been completed, oozing had often begun. He insisted on the fact that patients did not usually die from the hæmorrhage, as such, but from septicæmia due to the decomposition of the ooze. That was why the use of the drainage tube was advised. He would be very glad if a method could be devised to overcome the difficulties and drawbacks, as the recovery took much less time; but he had heard of no method which would give such assurance against hæmorrhage as that obtained from the extra-abdominal method.

Lawson Tait, in the same journal, holds that even the most tempting looking pedicles can not be relied on, because the uterine tissue is so laden with serum, that even if tied ever so tightly, it would begin to bleed in twenty-four hours. He had tied some 6,000 pedicles, and while he has never had hæmorrhage from ovarian pedicles, except in one or two cases, it was quite another thing with the pedicles of fibroids. He regretted nothing so much as having been induced to try the *intra-peritoneal* treatment of the pedicle. Even hydraulic pressure would not render them secure, and he had employed pressure up to three tons. At present all that his nurses had to do was to give a turn to the clamp whenever oozing set in. They were not secure until the lapse of 80 or 90 hours. It was true that certain cases might be safely treated by ligature, but it was impossible to distinguish them prior to operation.

Joseph Price, of Philadelphia, advocates the dry extra-peritoneal treatment of the pedicle. After the clamp is applied, the stump is cut off and trimmed down so far as seems compatible with safety. The stump is then drawn down into the lower angle of the incision, and its peritoneal covering above and below the wire, stitched to the abdominal peritoneum, two or three stitches being all that is required. This shuts out all possible chance of sepsis. A dry dressing of iodoform gauze is applied. Other antiseptic powdered substances, such as salicylic acid or subnitrate of bismuth may be used if desired. In case of large succulent stumps, the bichloride may be directly applied. The result of this treatment is that the stump is completely mummified, and in a few