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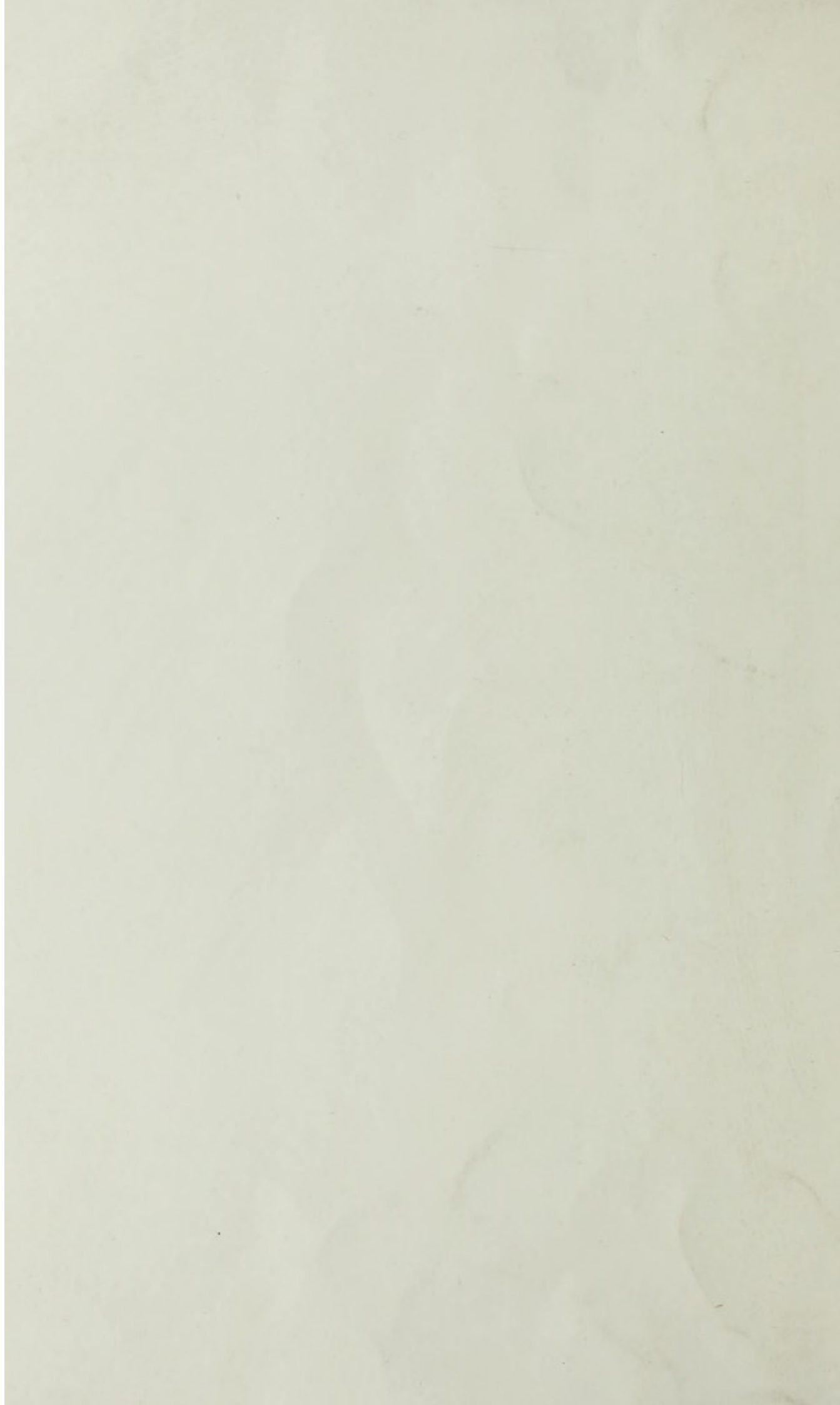
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## HYSTERECTOMY WITHOUT CLAMPS OR LIGATURES.

BY W. F. METCALF, M. D., DETROIT, MICHIGAN.

My excuse for complying with the request to read a paper upon this subject before this society is that the general practitioner is frequently called to prescribe for symptoms which can be relieved only by hysterectomy. I wish also to call the attention of the gynecologists to this method of operation that they may aid in defining its limitations.

Before describing the operation I wish to call your attention to a few anatomical facts with which you are all more or less familiar.

(1) The arteries supplying the uterus do not enter its muscular tissue, but lie in its areolar covering, sending only capillary branches into its substance. The same arrangement obtains in the tube and ovary.

(2) The uterine body is supplied almost wholly from the hypogastric plexus of the sympathetic which produces its monthly rhythm when not pregnant. Its neck has no rhythm as its nerve supply is cerebro-spinal. At the junction of these two systems, the vicinity of the internal os, may be received the irritations originating in either system. In cases where the tubes and ovaries are diseased I have always found the mucous membrane in this locality pathological, and peritonitis is occasionally produced by simply passing a sound.

If, in amputations, ligation of a cerebro-spinal nerve causes pain, that is, disturbs the function of the cerebrum, the ligation of a sympathetic nerve may disturb its centre, the solar plexus. Irritation reaching the solar plexus means disturbed rhythm in one or every viscus; but since the terminal ganglia which control the heart are larger than those of any other organ, the effect upon them is more marked. This may explain why patients die occasionally of shock where clamps are used or where the ganglia around the uterine neck and in proximity to the tubes and ovaries are ligated.

I think it better not to tell the patient of the contemplated operation. Tell her you intend doing as little as will make her well. PROFESSOR ELMER GATES has demonstrated that unpleasant thoughts create harmful chemical products in the body, which may be detected by chemical analysis of the perspiration and urine. The thought of what the patient considers so desperate a procedure as the extirpation of the womb may produce mental emotion—a condition favoring shock. Moreover, were she never told what was done she would not be harrassed by the thought that she is unsexed. The sensual feelings produced by the pathology of the genital organs will disappear, but she will be feminine and womanly as ever.

If these observations be correct the ideal method of hysterectomy or ovariectomy is to remove the offending organ without ligating or crushing the adjacent tissue.

First, cleanse the vagina and cervical canal thoroughly, curetting the cervix if necessary, that no poisonous discharges may get into the abdominal cavity.

Pack the uterine cavity thoroughly to render dissection over its surface easier. Pass a guy-rope through the cervix. Make incision around cervix down to the muscle tissue. From this point carry dissection to a point a little above the junction of the cervix with the body of the organ (the surface of the muscle being the guide); at this point the abdominal cavity is entered anteriorly. The fundus of the uterus may then be turned out through this opening and the ovaries and tubes examined. If only one be diseased it may be removed by bringing the tube down and stripping it from its attachment with the scissors. The ovary is removed separately and in the same way, by carrying incision close to its tissue. The edges of the peritoneal layers of the broad ligament may now be drawn gently together with catgut, the uterus re-turned to its former position, and the covering of the cervix stitched in place. If the appendages on both sides are found abnormal the uterus may be re-turned and the dissection continued from below, beneath the uterine and ovarian arteries to the attachment of the upper border of the broad ligament, where its covering membrane is severed. The uterus out of the way the ovaries and tubes are more easily removed. After sewing the edges of the serous membrane together which were attached to the tube, the ends of the broad ligament are approximated at the upper margin by a catgut stitch, thus forming a firm floor for the intestines. A tampon of wool covered with silk is thrust into the cavity from which the uterus is taken, to be removed when the danger of capillary hemorrhage has passed. If an artery be accidentally opened the tissue around the spurting point should be gently drawn together by a circular stitch of catgut. Tamponing the vagina with antiseptic gauze completes the operation.

I believe that DOCTOR E. H. PRATT was the first surgeon to remove a uterus without clamps or ligatures.

I have done only five hysterectomies strictly by this method. I shall not weary you with long reports, but must make them more or less complete to indicate the sphere of the operation.

*Case I.*—Mrs. B. aged twenty-seven years. She had a fall when a child. Was confined to bed several weeks at that time. Had pelvic pain ever since, Had several attacks of general peritonitis, the inflammation originating in the pelvis. In the summer of 1892 she had a cystic tumor of right ovary removed. The other tube and ovary being imbedded in inflammatory exudate was not disturbed. Her suffering was not lessened by the operation. Pain in head and pelvis continued. Constant pain in the bladder and desire for frequent micturition made life intolerable. She was obstinately constipated. I found subinvolution, erosion of cervix uteri, and an ichorous discharge from the endometrium. I treated her locally by the orthodox method for a few weeks. She was not benefitted. She said she would rather die than suffer longer. I told her to go to the Sanitarium and I would do what I could for her. On September 6, 1893, I removed the uterus, leaving that tube and ovary, as the other operator had done. Her highest temperature was 99.4°. She was removed to her home, three miles distant at the end of the first week. Three weeks later she began to run the sewing machine. She now rides a bicycle and is well. Her constipation is cured.

*Case II.*—Mrs. L., aged twenty-six years. Had been confined to her bed for many weeks. Had not slept two hours at any one time for six weeks. Severe

pain would begin in the left ovarian region, pass up to the cardiac region, when suffocation would come on and she would tear the clothing from her chest in her effort to get air. She had been subjected to trachelorrhaphy, perineorrhaphy and local treatments. I found the left ovary considerably enlarged, and on February 2, 1894, I dissected beneath the covering of the cervix and entered the peritoneal cavity anteriorly, intending to examine the ovaries and remove only what was pathological. I found a tear beginning about a quarter of an inch below the os internum and extending one inch up the body of the uterus; both ovaries were completely degenerated, although the tubes were apparently normal. I therefore removed the uterus and its appendages. She slept two hours that afternoon and nearly all that night without morphine. (She had averaged a grain and a half of morphine a day for a month previous to operation). Her lowest temperature was  $97.3^{\circ}$ ; highest  $99.6^{\circ}$ . Highest pulse rate 128; lowest 72. Thirteen days after operation she was taken home in an ordinary carriage. She has been well since.

*Case III.*—Mrs. B., aged thirty-two years. A fibroid tumor of uterus, too large to be removed per vaginam. I made abdominal incision from umbilicus to pubis; freed tube and ovary to its junction with the uterus; at which point I made an incision in the side of the enlarged organ and ligated the spurting vessel. The same was done upon the opposite side. I then dissected downward beneath the lateral vessels to the cervix where the amputation was completed. Then placing the patient in the lithotomy position I removed the cervix, which was involved in the growth, without the necessity of tying a vessel; sewed up the opening in the peritoneum and packed from below. Her highest temperature was  $100^{\circ}$ , and highest pulse rate 100. This was five hours after operation. The next morning her temperature was normal and did not after that exceed  $99^{\circ}$ . She sat up on the ninth day, convalesced rapidly and is now in excellent health.

*Case IV.*—Mrs. D., aged thirty-one years. Had had constant pain in the pelvis for years. Extreme tenderness over body of uterus. Among the ordinary reflex symptoms present in pelvic disorders, that of chorea developed. Pressure upon either ovary or the passing of a sound would bring on violent choreic movements, which would sometimes continue for days. In operating October 20, I found the ovaries degenerated, the left one gelatinous, the uterus friable and spongy. In this case also I found a tear extending up into the uterine body. Her highest temperature was  $100^{\circ}$  and highest pulse rate 106. She left the hospital thirteen days after operation. Her chorea is apparently cured and she is convalescing rapidly. The dark circles ever present around her eyes, which probably indicated that the irritation reached constantly the ophthalmic ganglia on the supraorbital, have almost wholly disappeared.

*Case V.*—Mrs. P., aged twenty-six years. She had constant pain in the left ovarian region, constipation, coated tongue, headache, backache and melancholia. She said she was married at fifteen; had five children and had had many miscarriages. She had an abortion produced which was followed by peritonitis. She had contracted gonorrhoea three years ago and had been treated locally ever since with no marked benefit. I found the left ovary and tube prolapsed, enlarged and adherent. As she was still young I wished to preserve the reproductive function. After turning the uterus upside down, I removed one tube and ovary,

intending to leave the other, but upon closer examination I found pus in this tube also and the ovary undergoing cystic degeneration. I re-turned the uterus and removed it before attempting the removal of the other tube and ovary. She took chloroform badly. I feared she would die on the table. I resuscitated her by the use of the rectal bivalve. After operation she rallied quickly and is now walking around the halls at Grace Hospital. Her highest temperature was  $101^{\circ}$  and her highest pulse rate 104.

In the majority of cases the disease of the tubes is secondary to that of the uterus. A diseased endometrium may disturb the function of other organs. If there is an hypertrophied cervix uteri there must be an atrophied cervix uteri. If reflex symptoms result from the one condition they may result from the other.

Who can say that a uterus now diseased will become normal? When its appendages are removed it loses its function and the organism is better rid of it. It should be removed, especially in those cases where the reflex symptoms predominate. Properly performed in suitable cases I think it may prove to be less dangerous than the removal of the ovaries by laparotomy. It is a difficult operation where the uterus is fixed high in inflammatory exudate. I found one case with extensive intestinal adhesions in which I made abdominal section to complete the operation.

With my present experience, I would say the indications for the operation are :

(1) Small fibroid tumors of the uterus or ovaries, except where the tumor can be removed without sacrificing the organ.

(2) Double pyosalpinx.

(3) Epithelioma of the cervix, when the periuterine tissue is not involved.

(4) Incurable endometritis, the reflex symptoms from which impair markedly the health of the patient.

The advantages of the method are :

(1) I believe the danger of shock is eliminated.

(2) The drainage is good.

(3) Hemorrhage following operation would be through the vaginal passage and therefore readily detected and more easily controlled.

(4) Where the tubes and ovaries are buried under adhesions it is easier to dig them out below than through an abdominal incision.

(5) Less liability of subsequent intestinal adhesions.

The effect of the continuous irritation of some intra-abdominal ligatures and adhesions upon glandular secretion, upon the rhythm of internal organs, upon the general circulation of the blood and therefore upon nutrition, I will leave for your investigation.







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