SOME PHASES OF HYSTERECTOMY

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We must confess that the extirpation or resection of an important organ is an admission of defeat. We remove because we cannot satisfactorily cure.

Let us recall briefly the history of a few of the operative procedures of the past fifty years. Possibly there are some here who remember the time when the surgeon boasted of his dexterity in amputating an extremity and cited the large number of amputations which he had performed. Today it is with the greatest reluctance that an amputation is done.

We shudder when we think of the appalling havoc which has been wrought by the sterilization of thousands of women through the unnecessary removal of practically normal ovaries. It is one of the dark pages in the history of surgery.

We have just been passing through and I trust are near the end of a period of enthusiasm for pylorectomies and gastric resections in the treatment of benign lesions of the stomach. Surely we are justified in believing that the goal lies in the opposite direction, that is either by medical procedures or less mutilating surgery. Through the efforts of the urologist, conservative treatment of the kidney is becoming more successful and nephrectomy much less frequent.

It is to be hoped that in the progress of gynecology, a large series of hysterectomies will be regarded as are amputations, pylorectomies and nephrectomies.

During the past twenty-five years radium and *x*-ray have done a great deal in the treatment of certain uterine conditions. But radiotherapy is applicable only to a small proportion of those cases which are now being treated by surgery.

Before this Society there have been presented numerous papers discussing the relative merits of radium and surgery

in the treatment of carcinoma of the cervix, and for a number of years it was a topic of heated discussion among gynecologists. With few exceptions, however, I believe it is generally agreed that radium is now the choice in such cases.

It was my privilege two years ago to stand beside Mr. Victor Bonney as he operated upon 3 patients with carcinoma of the cervix. Mr. Bonney is probably the greatest proponent of surgical treatment of carcinoma of the cervix, and in his hands,with his low mortality and high percentage of apparent cures, surgery instead of radium may be the procedure of choice. However, we are not all Bonneys. On the other hand, the greatest of living gynecologists, our own beloved Dr. Howard A. Kelly, has practically abandoned surgery for radium in the treatment of these cases. I think I have operated upon my last patient for carcinoma of the cervix.

Hysterectomy for carcinoma of the body of the uterus gives such excellent results even in the fairly advanced stages, that it appears to be far preferable to radium, even though it carries a definite operative mortality.

During the past few years numerous articles have appeared upon the subject of hysterectomy. The statistics contained in them have varied widely. For example, there is the report from the Mayo Clinic for 1928, where we know the gynecological work is done by a few men, all of whom are master surgeons. That report gives a hospital mortality of less than 1 per cent in 470 cases of hysterectomy for benign conditions. On the other hand, in hospitals where the work is done by numerous visiting surgeons and residents, the mortality is markedly higher.

Fullerton and Faulkner, November, 1930, reported 1851 hysterectomies done by the visiting staff and the residents of Lakeside Hospital over a period of thirteen years. Their gross mortality for 1078 pan-hysterectomies was 4.1 per cent, for 609 supravaginal hysterectomies, 4.4 per cent.

Drs. L. E. and J. C. Burch in May, 1931, reported 200 consecutive hysterectomies from the Vanderbilt Hospital.

Of these, 166 were supravaginal with a mortality of 4.2 per cent, and 32 were pan-hysterectomies with 3.1 per cent mortality.

Bartlett and Simmons report from the Free Hospital for Women, Brookline, 2733 supravaginal hysterectomies with a mortality of 1.7 per cent, 209 total hysterectomies (exclusive of carcinomata of the cervix) with a mortality of 7 per cent and a combined mortality of the supravaginal and total hysterectomies (exclusive of carcinomata of the cervix) of 2.1 per cent.

From the Cook County Hospital a recent report of 661 abdominal supracervical hysterectomies with bilateral salpingo-oophorectomies gave a mortality of 8.9 per cent.

In order to determine the results of hysterectomy in the hands of an average surgeon in an average hospital, I have reviewed 693 consecutive abdominal hysterectomies, exclusive of those done for carcinoma of the cervix. These operations were all done by me and therefore have more of less uniformity for comparison. I shall not discuss vaginal hysterectomy, and with chemical hysterectomy I have had no experience.

Surprising as it may seem, there is still some confusion as to terminology. The word pan-hysterectomy has been used by some to designate the removal of the adnexa. Correctly speaking, pan or total hysterectomy designates the removal of the uterus together with the cervix. Sub-total or supravaginal hysterectomy denotes removal of the uterus but not the vaginal portion of the cervix. Supracervical is correctly used to designate an amputation just above the internal os, and designed to leave a small amount of uterine mucosa. None of these terms includes removal of the adnexa.

The 693 cases are classified in five general groups.

I. FIBROIDS

Suffice it to say that the mere presence of a fibroid is not an indication for surgery. It must be producing symptoms sufficient to warrant its removal or else be large enough to

make us believe it is causing undue pressure on the neighboring organs which in time would lead to trouble. As a purely arbitrary division, I would say that if the growth is as large as a grapefruit it should receive treatment. There are 148 in this group classified as fibroids and a large percentage of these, especially in the colored, were complicated by a definite pelvic inflammatory disease. By that I mean not merely the mild inflammatory reaction resulting from the presence of the tumor but a distinct bilateral tubal infection and plastering down of the adnexa. In at least one-third of these cases, this pelvic infection of itself would have been sufficient to have brought the patient to the surgeon. There were 50 colored patients, or 33.5 per cent. The percentage of colored patients in the total 693 was 26 per cent, simply verifying what has been long known, that the percentage of fibroids is much higher in the colored race.

The sub-total operation was done 135 times and the total operation 13 times. There were 4 deaths, giving a hospital mortality of 2.7 per cent. As a matter of secondary interest the appendix was removed in 89 cases and had been previously removed in 22. The 4 deaths were, briefly, as follows:

CASE I. A colored woman, aged thirty-six, married, had a fibroid about the size of a grapefruit, but with very marked, probably neisserean, pelvic inflammatory disease. The operative procedure was supravaginal hysterectomy, double salpingo-oophorectomy, appendectomy. She died about ten days after operation from pneumonia.

CASE II. Colored woman, aged forty-five, married. The record states that there was an adherent fibroid the size of a cabbage, together with the usual pelvic inflammatory disease so common in the colored. The operation consisted of supravaginal hysterectomy and double salpingo-oophorectomy. The patient collapsed on the table and died from shock five hours later.

CASE III. White woman, aged fifty-three, married. There were multiple fibroids filling the pelvis, also a solid tumor of the left ovary the size of an orange. The operation consisted of supravaginal hysterectomy and left salpingo-oophorectomy. About a week later, a second operation was necessary. The right tube and ovary had become necrotic with formation of a localized abscess beginning. The patient did not respond after the second operation

and died in two days. I do not recall now why a tube and ovary were left behind in a patient fifty-three years old. Possibly it was because the patient felt, as do many, regardless of their age, if one ovary was left behind she would not be entirely unsexed. Whatever the reason which influenced me to leave an ovary in a woman fifty-three years old, that death must be attributed to an error in surgical judgment; first in leaving the ovary, and then by interfering to too great an extent with its blood supply.

CASE IV. A white woman, aged forty, married, on admission was quite anemic with hemoglobin about 20 per cent. She was kept in the hospital for two weeks until, following transfusions, the hemoglobin reached 40 per cent. She did well for about a week and then gradually lost ground and died.

It is in those cases of fibroids where one or both ovaries can be safely left, that the supracervical hysterectomy so frequently is adaptable. The patient retains a semblance of menstruation and it is reasonable to believe that even this small amount of uterine activity will preserve the ovaries from atrophy longer than if there had been an ordinary subtotal or total hysterectomy.

Some clinics report a fairly large number of myomectomies in comparison to the hystero-myomectomies. I confess I have had relatively few. In nearly all the cases there has been either the complicating tubal infection, the multiplicity of the fibroids, the age of the patient (around forty) or some other factor which would contraindicate myomectomy.

I have had only a few cases treated by radiotherapy instead of surgery. For this there are several reasons. In the first place so many of the patients have complications which can be treated at the same time by surgery but are not amenable to radiotherapy. Secondly, in many cases at least one ovary can be saved to lessen the symptoms of artificial menopause. Thirdly, there is the economic factor. If we could assure the patients positively that the financial outlay necessary for radiotherapy would be the end of their expense, I feel sure many more patients would have been submitted to that procedure. When, however, in cases that seem to be suitable for *x*-ray or radium, it has been explained to the patients

that they may still have to resort to surgery, it has been my experience that most of them would rather have the operation and be done with it, than run the risk of an added financial burden.

2. INFLAMMATORY GROUP

In this group were 315 patients, of which 95 were colored and 220 white, which makes the operation in the colored patients 30 per cent of the total. As the average of the whole series shows the colored patients comprise 26 per cent, this again demonstrates what we already knew, that the operation for pelvic inflammatory disease is relatively greater in the colored. The sub-total operation was done in 307 cases and the total in 8. One hundred fifty-three were drained and 162 were not drained. That nearly 50 per cent were drained was due largely to the fact that, in the first part of the period covered by this series, frequently we operated in the subacute stages and therefore necessarily drained. Also a few years ago we were more in the habit of draining the chronic quiescent cases, a procedure which is now seldom followed. When we found it necessary to remove both tubes and ovaries we nearly always removed the uterus.

In the sub-total hysterectomies it is our custom routinely to cup out the cervix. This is done primarily to lessen the persistent leucorrheal discharge and to make for better coaptation in closure of the cervical stump. It may also help, at least theoretically, to eradicate a focus of infection. It is not done with any idea of preventing a future cancer. It has been estimated that probably two-thirds of all cervical cancers arise outside of the cervical canal; therefore we can readily see how little cupping of the cervix acts as a prophylactic against cancer. Parenthetically I may state that in the 604 cases of subtotal hysterectomy we have been able to find but one case of cancer arising from the stump. In that case it was an epidermal carcinoma, grade 3, and developed approximately nine years after the operation.

In performing hysterectomy in the non-inflammatory cases, it is usually wiser to err on the side of extreme conservatism when dealing with the ovaries. However in the inflammatory cases when it is necessary to dig an ovary out of adhesions or when the ovary is moist and we know that it will be plastered down within a few hours, I believe it is the better part of wisdom to be more radical. I am sure that any one doing pelvic surgery has seen many cases where the zeal in trying to save such an ovary has necessitated a second operation. While I have no statistical proof, I am convinced that the symptoms of artificial menopause are less pronounced following bilateral oophorectomy for pelvic inflammatory disease, than in the non-inflammatory groups where bilateral oophorectomy is done. This may be explained by the fact that the relief of pain is so grateful to the former group that they minimize the unpleasant effects of the artificial menopause. It is possible also, that in many of the pelvic infections the ovaries are, to some degree, destroyed before their removal. While we occasionally have severe nervous manifestations following double oophorectomy, it has not been the bugbear which some writers have described. This may be due to the fact that a large proportion of our patients are of the sturdy mountain stock accustomed to a more or less out-of-door life, in contrast to those highly strung patients seen in the congested urban centers. In 229 of this group the appendix was removed. In 37 it has been previously removed.

In the 315 hysterectomies there were 5 deaths or a hospital mortality of 1.6 per cent. They were briefly:

Case v. A white woman, aged thirty-six, was operated upon three months after delivery. The uterus and adnexa were friable. The patient left table in a very poor condition and died two days later.

Case vi. Colored woman, aged twenty-seven, with a pelvic abscess filling the whole pelvis. The patient did not pick up well after operation and died in two days. Had we been content just to drain the abscess the chances are she would have lived.

Case vii. A colored woman, aged forty-four, in spite of conservative treatment was rapidly getting worse. Operation revealed general peritonitis

with a pelvic abscess. The patient died in a few hours from shock. The operation lasted only about thirty minutes but viewing the case in retrospect we believe it would probably have been better simply to have instituted drainage and quit.

CASE VIII. White woman, aged thirty-four, married. The operation was for bilateral hydrosalpinx. The patient left the table in good condition and for twenty-four hours small amounts of urine were secreted. About forty hours after operation she died from what appeared to be acute suppression of urine.

CASE IX. White woman, aged forty-one, single. At a previous operation the right tube and ovary and appendix had been removed. The present operation was for removal of the uterus and the bound-down left tube and ovary. The patient did nicely for about four days and then rapidly grew worse and died with symptoms pointing to acidosis but in reality we do not know the cause of her death.

3. SO-CALLED FIBROUS GROUP

Under this vague heading I have included that group of patients usually in the late thirties or early forties who have an enlarged boggy uterus, frequently acutely retroflexed, usually moderately prolapsed. There is nearly always an accompanying relaxation of the pelvic floor. These patients have had more than their share of children and are literally worn out. If any symptoms suspicious of carcinoma of the body of the uterus were present the case is not included in this group but in the following group of suspected malignancy. In these cases perineal work, including trachelorrhaphy, if necessary, is first done, followed by a supracervical hysterectomy, retaining of course the adnexa. This will usually relieve the patient of her symptoms and still maintain a semblance of menstruation. The development of carcinomata in the remaining stumps is not frequent enough to justify total hysterectomy in these cases as a routine. There were 150 cases in this series, of which 138 were subtotal or supracervical and 12 total. There were 27 colored patients, or 18 per cent. With the colored patients comprising 26 per cent of the whole series, the 18 per cent does not mean that this pathology is not as frequently found in them, but rather that with their phleg-

matic temperament and ability to stand discomfort it takes more than a sagging boggy uterus with a relaxed perineum to bring them to operation.

We know that radiotherapy will cause these enlarged boggy uteri to shrivel up but at the same time artificial menopause is produced and the pelvic relaxation remains. Of course in the allied group where there is no lack of pelvic support but where there is a big boggy bleeding uterus (non-malignant) but in good position, *x*-ray or radium would be the procedure of choice. Incidentally the appendix was removed in 113 cases and had been previously removed in 11 cases. There were 4 deaths or a mortality of 2.7 per cent. They were:

CASE X. White, aged forty, married. On the fourth day postoperative, without apparent reason, the pulse became rapid and feeble, with moderate dyspnea, and the patient died in about ten hours.

CASE XI. White, aged thirty-nine, married. The patient did nicely until the eleventh day postoperative, when she complained of a tightness and feeling of distress in the chest, with dyspnea. This practically cleared up but three days later recurred suddenly and severely and the patient died in one-half hour.

CASE XII. A white woman, aged thirty-nine, married, left the table in good condition and reacted well from the operation. About twelve hours after operation she suddenly complained of pain in the precordium and died within thirty minutes.

CASE XIII. A white woman, aged thirty-nine, married, had a subtotal hysterectomy, appendectomy, perineorrhaphy, and hemorrhoidectomy. She left the hospital in two weeks slightly unbalanced mentally. Five weeks after the operation she was brought back to the hospital complaining of severe pain in the lower right abdomen, with temperature 102°F., and a high leucocyte count. A second operation revealed the right tube and ovary in a necrotic mass. This was removed and drains inserted. The patient died five days later. This is the second case in the whole series in which interference with nutrition caused necrosis of a remaining tube and ovary.

4. SUSPECTED CARCINOMA OF THE BODY OF THE UTERUS

In this group there were 56 cases in each of which there was some symptom at least slightly suspicious of malignancy of the body. In a number of these, malignancy was proved

by preliminary curettage. However, only in the past few years has a competent pathologist been available for immediate diagnosis and it was therefore necessary to send the scrapings to a distant city. For that reason when a patient with symptoms suggestive of malignancy, but with other pathological conditions necessitating operation, as described in the preceding group, we would operate and then send the specimen to the pathologist. The important point however, is that a total hysterectomy was invariably done. Now, with a competent pathologist always available we no longer have to resort to this semi-empirical method.

Strange to say there was just one colored patient in the 56. There was one death, a mortality of 1.8 per cent.

CASE XIV. A white woman, aged fifty-seven, married, did nicely for fourteen days and had just been put back to bed after having been in a chair for an hour. She died suddenly before a physician arrived.

5. MISCELLANEOUS

In this group there were 24 cases of various conditions. Most frequent were the bilateral ovarian cystomata, adherent to the uterus. There was one Porro cesarean section in a woman forty-three years old who had been submitted to numerous pelvic examinations. There was also a second case of Porro cesarean section upon a woman aged thirty at full term in whom the uterus had ruptured twenty-four hours previously, the rupture having occurred through a former cesarean scar. There were 2 cases of intractable dysmenorrhea in which the patients had become mild narcotic addicts. These 24 cases were all sub-total hysterectomies. There was one death, giving a mortality of 4 per cent.

CASE XV. White woman, aged thirty-one, married. The operation was for release of postoperative adhesions. The patient had a deformed pelvis and since puberty had suffered violently for three days at periods. At the urgent request of the patient and her husband, and with the sanction of a consultant, after releasing the omental adhesions, a supracervical hysterectomy was done. Three days after operation the patient died suddenly with symptoms of pulmonary embolus.

The mortality in the total series of 700 cases was 2.15 per cent.

SUMMARY

1. We hope and believe that the present indications for hysterectomy will be met to a great extent by other yet unknown but less radical measures.

2. Radium is the treatment par excellence for carcinoma of the cervix, while surgery is just as strongly indicated in carcinoma of the body of the uterus.

3. The mortality following hysterectomy in the different clinics varies from less than 1 per cent up to practically 9 per cent.

4. The mortality in this series of 693 hysterectomies done by one average surgeon was 2.15 per cent. Certainly therefore double that mortality, or 4.3 per cent should be the upper limit in any reputable hospital.

5. The greatest conservatism should be practiced in dealing with the ovaries in the non-inflammatory groups but in the cases of pelvic inflammatory disease we are justified in being more radical.

6. The healthy out-of-door life of the woman in the country is an important factor, tending to lessen the severity of the artificial menopause.