

INDICATIONS AND ADVANTAGES OF COMPLETE ABDOMINAL HYSTERECTOMY VERSUS INCOMPLETE HYSTERECTOMY*

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BECAUSE of distressing symptoms of leucorrhœa, occasional bleeding from the cervical stump or polypoid protrusion, we became dissatisfied with the operation of subtotal hysterectomy. Being inspired by the technic and results of total hysterectomy obtained by Masson, Counsellor and Sanders, we began, five years ago, to replace the subtotal with the total procedure in most cases requiring hysterectomy.

It is not, however, our purpose to precipitate a controversy between those who favor subtotal to total hysterectomy or the incomplete removal of the uterus to the complete. It is a matter of opinion whether adequate cauterization of the cervical canal and the proper repair of lacerations is sufficient as a prophylaxis against future cervical stump cancer or the disturbing local or systemic effects of latent or recurring cervical infection. This problem must be evaluated by the operating surgeon and a decision made upon his experience and clinical observation.

It is our desire to relate our experience with total abdominal hysterectomy and to explain our preference for this procedure in the vast majority of cases.

My brother, Dr. Paul Hunt, and I have performed, since 1940, the complete removal of the uterus in 243 cases, without a mortality, without an injury to the bladder or ureters and with no added hospitalization period.

Bleeding during the operation has not been a problem. Postoperative recovery has not indicated pelvic infection. This we

believe to be less in the total than in the subtotal operation. As mentioned by Masson, cutting across the cervix opens a field for infection even though the canal has been thoroughly cauterized. Cauterized tissue becomes necrotic and a fertile field for infection, which is conducive to thrombophlebitis. There was one case of postoperative thrombophlebitis in this series, which subsided by paravertebral block and dicumerol in a short period, with only slight residual leg edema.

There has been only one case that presented any postoperative bleeding and this was easily controlled. Such occurrence is negligence and due to failure to close adequately the vaginal vault—in this instance, at the side of the vaginal vault suture. At this angle vaginal mucosa may retract and not be included in the suture and subsequently bleed.

The average postoperative stay in the hospital was 14.7 days. The time of operation was not prolonged appreciably over that of subtotal hysterectomy. The average time taken for operation was less than one hour. Sixty-five per cent of the patients were operated upon under spinal anesthesia, an agent which gives excellent relaxation and permits of better exposure. The average age of the patients was forty-three years; 213 were for fibromyoma, six for fundal carcinoma, four for carcinoma of the cervix, twenty for miscellaneous pelvic disorders, ovarian cysts, tubo-ovarian disease and endometriosis.

We have not encountered any of the objections often emphasized against the

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total removal of the uterus. The vaginal vault has been well supported in all cases and there has been no shortening of the vagina except in those cases having a congenitally short vagina and where a cancer of the cervix had been treated previous to operation by radium and x-ray therapy, in which instance a wide vaginal cuff was removed along with the cervix. Frequent inquiries as to marital relations following this procedure have resulted in satisfactory replies in most instances. There has been no distressing leucorrhea, no periodic bleeding and naturally no carcinoma following the procedure.

We, therefore, from this experience, believe total hysterectomy is preferable in the vast majority of cases to subtotal hysterectomy for lesions requiring the removal of the uterus. We do not by any means advocate the complete removal as a routine. Each case has to be individualized and the appropriate procedure decided upon. The age of the patient, the condition of the cervix, the anatomical obstacles at the time of exploration and, as Masson has said, to some extent the wishes of the patient are to be considered.

If the patient is fat, the pelvis deep and inaccessible, the lower uterine segment fixed by fibrosis, or endometriosis with a firmly adherent rectum and rectosigmoid, total hysterectomy is contraindicated. A normal cervix in the nullipara does not necessitate the removal of the cervix. It is likewise preferable not to do so in a young individual without cervical disease or familial cancer tendencies.

However, when the individual is in the mid-period of life, near or after the menopause, has borne children, has an infected cervix, enlarged, eroded or scarred by lacerations, with or without appreciable leucorrhea, we believe the cervix should be removed along with the fundus. The entire uterus should be removed in all cases when fundal carcinoma is known to be present or suspected and, in some instances in which cervical cancer has been controlled by radium and x-ray. It does

not seem to be desirable to remove the uterine disorder and retain the most vulnerable portion from the standpoint of cancer or distressing sequelae.

CANCER OF THE CERVICAL STUMP

It is to be admitted that the incidence of cancer of the cervical stump is not great and may not be considered as an indication for total hysterectomy. Certainly not, if the mortality of the operation exceeds the incidence of cervical stump cancer. Gellborn and Spain stated that the danger from total hysterectomy is far less than that of cancer of the cervical stump. Sanders states that cancer of the cervical stump is sufficient in number to make total hysterectomy a definite indication. He had four cases last year. A mortality of less than 1 per cent in 1000 complete hysterectomies justifies this statement. Foss reports the incidence of cancer in the remaining cervical stump, from a review of sixteen authors, to be 2.60 per cent and the mortality of total hysterectomy as against subtotal hysterectomy as reported by twenty-two authors, to be 3.87 and 2.35 per cent, respectively. However, Masson reports an incidence of 4.4 per cent cervical stump cancer in a period from July 1, 1930, to December 31, 1938, as against a mortality rate of 1.2 per cent in total abdominal hysterectomy. Masson states by communication that they have seen over 200 cases of carcinoma of the cervical stump, some of them many years after the incomplete operation. Counsellor reports 666 total hysterectomies at the Mayo Clinic in 1944 with one death. Foss recently reported 200 consecutive total removals without a mortality.

During the first five years of the Ellis Fischel State Cancer Hospital, of Missouri, there were seen 416 cancers of the cervix, eleven of which were of the cervical stump, all developing three years or more after subtotal hysterectomy. There were twenty-two in which the lesion was seen in the first six months following subtotal

hysterectomy. Lockwood, in the last three years, has treated 100 cases of cancer of the cervix, sixteen of which were in the cervical stump. The longest postoperative period was thirty-two years, four less than one year and one less than six months. In addition, there were ten cases of cancer of the cervix diagnosed from the surgical specimen and by biopsy of the stump while the patients were convalescing in the hospital from supravaginal hysterectomy.

This indicates that many cases have an unknown incipient cancer of the cervix at the time of subtotal hysterectomy, which emphasizes the importance of careful investigation of the cervix before operation, often by biopsy or curettage. Meigs states that the problem of cancer of the cervical stump is a real one and that there is no excuse for not removing the cervix, except in bad risk patients and where anatomical difficulties exist. Von Graff condemns coning out the cervix as it leaves the squamous epithelium of the cervix.

Richardson, discussing the contributions of Telinde and Galvin, calls attention to the frequency of unsuspected carcinoma of the cervix found over a period of two years in the routine biopsy of every patient coming to the operating room and some in the out-patient department. During this period of time they found sixteen cases with early histologic changes in the epithelium characteristic of cancer, and after total hysterectomy and careful histologic study this diagnosis was confirmed in fifteen of these cases. Furthermore, in a series of 300 cases in which total hysterectomy had been performed for a benign lesion and cervical cancer was not suspected, it was found in four cases. Novak states that many of the earliest cancers have been in cervixes which showed little or no gross clinical change.

It must be remembered that cervical cauterization protects only against adenocarcinoma of the cervix and not against the squamous cell carcinoma, which is by far the most frequent. An analysis by

Allebach of the cervical cancers at the Research Hospital for a twenty-one-year period shows twenty-seven, or 10.1 per cent adenocarcinoma; and 240, or 89.9 per cent, squamous cell carcinoma, in a total of 267 cases. Also, cancer of the cervix is more lethal than cancer of the fundus. They are usually Grade III or IV, while the fundal carcinomas are Grade I and II.

BENIGN LESIONS OF THE CERVICAL STUMP

There are other reasons, however, more rational for the removal of the cervix along with the uterus than cancer. Novak says the cervix serves no function after removal of the uterus and just as good a pelvic floor can be made if it is removed. Its retention results often in troublesome leukorrhea, even if cervical cauterization or conization are done. Frequently the cervical stump has to be amputated because of this distressing condition and often periodic bleeding is so persistent that radium or amputation must be employed. We often have had this experience. Variable degrees of leucorrhoea are common, after subtotal hysterectomy, but is never present after total removal. We have found an infected cervical stump and annoying leucorrhoea in thirty-five of sixty patients upon whom we had performed cervical cauterization and subtotal hysterectomy. Many never had it before. Cauterization may be conducive to infection. Masson states that in more than 500 instances treatment was necessary because of cervicitis with leukorrhoea. In many of these cases there was no history of this condition before the body of the uterus was removed. He believes this is due to interference with the blood supply of the cervical stump with infection in the cervical glands. Because of these reasons, in the last 2,000 hysterectomies he thinks he has not done more than fifty subtotal operations. Also, cervicitis may act as a focus of systemic infection or may be the seat of a polyp or even fibroid tumor.

ESSENTIALS OF OPERATIVE TECHNIC

The operation of total abdominal hysterectomy should never be attempted except by one familiar with the technic. It is not an operation for the occasional operator or for one not thoroughly familiar with the essentials of the procedure. It is our policy in all cases in which there is no ovarian disorder to conserve the ovaries when possible. Large lesions may so approximate the ovaries that adequate blood supply cannot be maintained. Usually one ovary can be conserved. The tubes, as emphasized by Masson, have no further purpose and may necessitate later surgery. We, therefore, usually remove the tubes. If left, their blood supply may be impaired as they must depend upon collateral circulation from the ovarian arteries, the principal supply having been abolished when the uterine arteries were ligated. Masson wisely emphasizes that the possibility of thrombophlebitis is less likely when the tubes are removed, as it eliminates slowed or stagnant circulation in the mesosalpinx.

The bladder is protected from injury by carefully stripping it down under direct vision, either by gauze dissection when not adherent or by sharp dissection. After ligation of the round ligament and division and ligation of the tubal pedicle, the ureters can be palpated by passing the hand behind the broad ligament and the thumb in front. The ureter can be felt to roll between the thumb and index finger. Its location can be determined. The ureters are protected by placing clamps on the uterine arteries high, as stated by Masson, at the internal os, both for total and subtotal hysterectomy alike. Keep close to the uterus, do not clamp below the internal os and the ureters will be safe. If the tumor is large and access is not possible, it can be removed in piecemeal and the ureters located and the bladder protected. If bleeding in the broad ligament occurs, the ureters should be isolated.

With the bladder well dissected down below the cervix, with the uterine arteries

clamped at about right angles to the internal os, divided and securely ligated by fixation suture ligature, the cardinal ligaments can be freely divided and by traction upon the uterus the cervix can be pulled up and actually enucleated from the vaginal vault, stretching to its maximum the vaginal mucosa around the cervix. The uterosacral ligaments and posterior peritoneum having been previously divided, the vaginal vault is opened with safety from behind and the cervix is removed by curved scissors at its attachment to the vaginal mucosa, conserving the entire length of the vagina. Right angle clamps placed below the cervix necessitate broad ligament dissection well below the distal end of the cervix at the side of the vault of the vagina. This is far below the point of safety of the internal os and greatly increases the danger of ureteral or bladder injury and materially shortens the vaginal vault. It is far better to open the vagina, conserve its entire length, pass through into the vagina a gauze tape saturated with tincture mercuric iodine and close the mucosa by an inverted suture under direct vision. No added danger of infection will result from this procedure and the advantages are evident. There would be less objection to total hysterectomy from the standpoint of safety of the procedure, ease of accomplishment and adequate vaginal depth if this method were employed.

With closure of the mucosa of the vaginal vault, support is attained by suture of the uterosacral ligaments to the anterior vaginal wall fascia or the vesical fascia, re-enforced by overlapping of the round ligaments across the closed vaginal vault. With these supporting fascial and ligamentous structures properly applied, prolapse will not occur. The vault can be and is as well or better maintained than in subtotal hysterectomy. The entire field is covered by the vesico-uterine fold of the peritoneum, leaving a perfectly peritonealized pelvic floor. Sutures should only be placed where it is definitely seen

through what structures they pass. An improperly placed suture is the most common cause of bladder injury. It is our practice to sprinkle the field lightly with crystals of one of the sulfa drugs. The abdomen is closed without drainage. The vaginal tape of tincture merthiolate is removed immediately after the abdominal closure. An adequate restoration of the perineal floor should be done, if necessary.

SUMMARY

The indications for total hysterectomy are definite and have been emphasized. Cautery of the cervix and repair of cervical lacerations are not considered desirable if total hysterectomy can be safely performed.

The mortality of total hysterectomy is less than the incident of cervical stump cancer in properly selected cases under competent hands.

None of the serious objections often mentioned are encountered when the vaginal vault is well supported and length maintained. The right angle clamp below the cervix, across the vagina as an aseptic precaution seems inadvisable. It shortens the vagina. It is better to open the vagina

and reconstruct the vault under direct vision, building up a firm support by the uterosacral ligaments, vaginal fascia and round ligaments.

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