560 30 (1920)

periosteum, the danger of penetration of the bladder is only a fraction of what it is when the needle is passed up from below, as in the Bumm method.

I also wish to take this opportunity of reproducing a roentgenogram of the pubic bone of Mrs. G. (Cases No. 17 and 23) in my previous article (Fig. 5). This woman had a pubiotomy done by me on the left side (to which the arrow points) in 1913. She was kept very quiet after the operation with the result that bony union followed and that she was unable to deliver herself at her next confinement in 1916. In consequence pubiotomy was performed by Dr. Purefoy. This time bony union did not occur, with the result that at her next confinement in 1919 she was delivered with the forceps of a living 8½ pound child the forceps being applied on account of uterine inertia and not on account of any mechanical difficulty.

A WARNING AGAINST PROMISCUOUS UTERINE CURETTAGE[1]

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Of all gynecological operations performed probably the most frequent is curettage of the body of the uterus.

The invention of the uterine sound by James Y. Simpson caused exploration of the uterus with it to be a very popular procedure. One can be thoroughly convinced of that by merely consulting the *Index Catalogue of the Library of the Surgeon General's Office*. There will be found an overwhelming number of titles on the subject, and one reading even a small number of the papers there listed under the proper heading can not but be impressed with the pervading enthusiasm.

Jennison's sound, brought forward some years later, also became a favorite instrument. Its use was largely in the reposition of the retroverted uterus. I plead guilty to "triumphantly" using this instrument in 1896 and 1897. The pain thus induced when adnexal adhesions unknowingly existed is well remembered. Possibly damaging infection may have been produced by my nefarious efforts.

The uterine curette, introduced to an embryonic state of development of gynecology, as it was, rapidly attained a high degree of popularity that has continued with but slight lessening of late. That the most slovenly and ignorant physician resorts unhesitatingly to the curette for various diseases of the uterus, real or otherwise, and even of the appendages is a notorious fact. It is equally true that curettage in the office of a physician with a very lax degree of surgical cleanliness is commonly done.

That curettage has a field in gynecological procedure is not to be doubted, but the ring of limitation around it is constantly narrowing. The narrowing is not comprehended by the majority of our profession, and to those its practice is far too simple to appear dangerous, and besides it tends to easy progress toward being known as surgeons.

INDICATIONS

The principal reasons for curetting the body of the uterus are to secure material for diagnostic purposes, to remove mucous polypi in the treatment of exfoliative endometritis, calcareous areas formed by calcified submucous fibroids, and some rare cases of senile endometritis, especially following senile pyometra of chronic endocervicitis, of certain rare forms of chronic endometritis, of certain equally rare cases of hypertrophy of the endometrium, of sterility—and to remove the products of conception that can not otherwise be extracted. The principal use of curettage is to secure endometrial tissue for microscopical study.

If we contrast this scope of the indications for curettage, as legitimized by progress in scientific medicine, we will at once note its conflict with the daily routine application of this surgical procedure. It is with a sense of great loyalty to my profession that I recall with deep humiliation the many former indications for curettage which have been discredited.

Among these were the routine curettage, incident to pelvic plastic surgery. If repair of injury to cervix or vaginal wall or perineum was to be made, curettage was added and its technique included gauze drainage or irrigation, one or both. A snap diagnosis of chronic endometritis was usually the term that was added to the

[1] Read before the Southern Surgical Association, New Orleans, December 16-18, 1919.

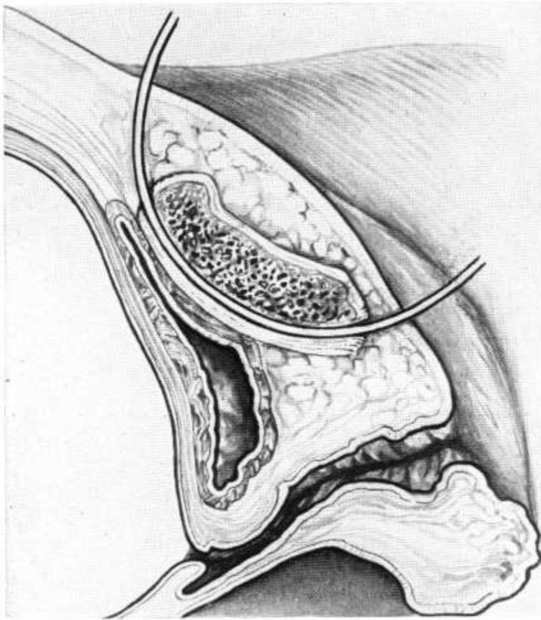

Fig. 3. The passage of the needle in the modified operation.

There is, however, a considerable risk of injuring the bladder with the needle.

The ease with which the bladder can be penetrated by a needle passed upward from below can be seen if the relations of the bladder and bone are examined in Figure 1, while the diagram in Figure 2 shows very plainly the manner in which the guiding finger in the vagina may actually push the bladder forward in the direct path of the needle. It may be said that, if the needle is kept between the periosteum and the bone, it cannot enter the bladder. This is, of course, true, but it is impossible to construct a needle with such a curve as to enable it to keep within the periosteum as the upper surface of the bone is reached, even if it has done so all along the posterior surface. The upper part of the bone is the danger point, and the danger is exaggerated by the guiding finger in the vagina.

Accordingly, I have for the past few months been in the habit of performing a slight modification of the Doederlein operation, as follows:

A small incision is made in the skin and fat directly above the point of proposed entry of the needle. This incision is carried down to the bone, and the periosteum is cut through where it passes off the upper surface on to the posterior surface. The point of the blunt Doederlein needle is then pushed through this opening and downward

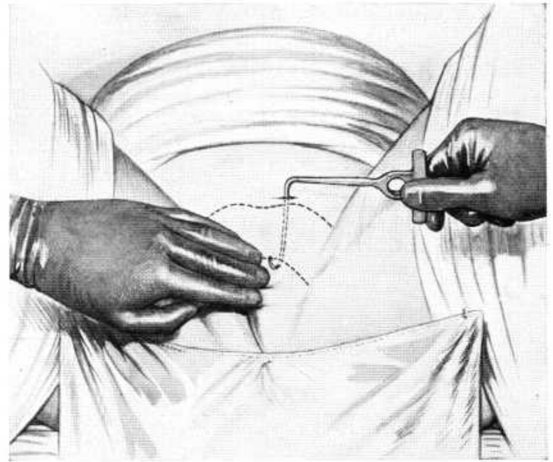

Fig. 4. Diagram to show the correct track of the needle.

beneath the periosteum (Fig. 3). The finger is only passed into the vagina, as a guide, as the needle reaches the lower edge of the bone, and even then it is not essential (Fig. 4).

The only point on which special care is necessary is in making the incision in the periosteum. If this is made directly on top of the bone, it will not be possible to detach the periosteum with the needle, as it is too firmly attached at this point. If, however, the incision is made just over the upper surface of the bone, it is usually easy to cause detachment.

It may further be said in favor of this method that, even if the needle fails to keep behind the

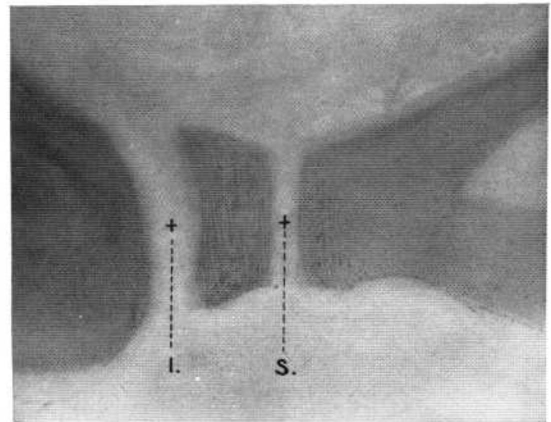

Fig. 5. Skiagram of the pubic bone after a double pubiotomy. The arrow points to the first incision with complete ossification. *I*, the second non-ossified incision; *S*, the symphyis.

ABLE SHOWING INCIDENCE OF BACTERIA IN CULTURES FROM GROUND ENDOMETRIUM OBTAINED AFTER HYSTERECTOMY

Type of cases	Number of cases	No growth	Total number	Gonococcus	Streptococcus	Diplococcus	Diphtheroid	Bacilli gram	Mixed	Remarks
without history or gross evi- f infection	26	23	3		1				2	The two cases with mixed growth were curetted a few days previously.
with history or gross evidence of n	13	12	1	1						One case revealed chronic tuberculosis. No bacteria were obtainable from one case with distinct inflammatory changes.
vomen without history or gross ce of infection	47	43	4		1*		1	1	1	1* anaerobic. Mixed growth from a case subjected to preliminary intra-uterine manipulation.
omen with history or gross evi- of infection	32	23	9	5	2	1	1			One streptococcus case packed to control bleeding two days before operation. All others except diphtheroid bacillus case yielded similar growth from the fallopian tube.

ive diagnosis. Microscopical examination scrapings was rarely made and still more recorded. Sometimes variations in diag- vere noted such as chronic metritis, chronic plasia, subinvolution, etc. Ofttimes the symptom of these various diseases was a e discharge which was manufactured by rvical mucosa. A very common indication, discarded or discredited, was incomplete on, and if fever was present the operation onsidered imperative and of a "life-saving" We now know that invasion of the vagina erus in such conditions is not only very lous but decidedly unnecessary; that, ex- n case of very dangerous hæmorrhage, such ions are best treated without such invasion. a supposed stimulant, curettage has been employed in treating uterine hyperplasia. hilosophy of it was illy founded. Cure of of the uterine body has apparently been d by curettage. Possibly the disease in these ces was so early and superficial as to been entirely removed by the curette, and re we are confronted by many warnings of anger of cancerous contamination in cut- urgical operations for this disease. Ignoring well founded warnings, one can scarcely aim to such refinement in pre-operative osis as to be able to select cases for such nent of cancer of the uterine body. In rrhagia incident to retroversion of the , it is common practice to curette without to right the malposition. In this type of rrhage the use of a proper pessary is usually treatment. In other uterine hæmorrhages, cardiac or other conditions outside the uterus, the curette is too often employed in place of careful study of the causes. Especially is this the case when loss of endocrine equilibrium is the cause.

DANGERS

It is well to point out the many dangers incident to uterine curettage. Not infrequently is a pregnancy in its first month thus scraped from the uterus and perhaps never recognized. Certainly humiliation has often come to the operator by discovering during curettage that an unsuspected pregnancy has been interrupted. Very often, too, pregnancy has unnecessarily been ended by curettage for incomplete abortion. The literature teems with reports of cases of perforation of the uterus by the curette with or without dangerous sequelæ and even death. In the *Index Catalogue* mentioned are found titles like these: "Resection of 70 Inches of Intestine after Perforation of the Uterus with the Curette"; "Perforation of the Puerperal Uterus: Pelvic Peritonitis; Drainage of Uterus and Parametrium; Colpotomy; Recovery"; "Two Cases of Death Following Curettage with Perforation of the Uterus"; "Laparotomy Three Hours after Curettage and Perforation of the Uterus; Seventeen Centimeters of Gut Drawn out of the Uterine Cavity; Uterine Wound Closed: Recovery." Infection plays a major part in the fatal cases usually and to a lesser degree in the remaining ones. For various and ofttimes obvious reasons by far the larger number of such perforations are not published. Nor are they, by any means, confined to the unskilful operator. Often infection without perforation is a sequel and often latent tubal infection is thus aroused to activity.

"Hyperpyrexia Following Curettage of the Uterus" is another title found in medical literature and is quite *à propos*.

How often curettage brings away a premenstrual thick membrane that brings from the pathologist a report of chronic endometritis! Close questioning of the latter brings slow admission that no genuine characteristics of existing inflammation were present. But the surgeon is cheered by the confirmation of his diagnosis and he has no doubt of correctness of both diagnosis and treatment. The invaluable paper of Arthur H. Curtis furnishes much valuable information concerning the bacteriology of the endometrium with and without instrumentation of it and I take the liberty of copying his table of results.

We find in this table that in 26 nullipara, *without* history or gross evidence of infection, 23 gave no growths from the endometrium and in 2 of the 3 furnishing growths, mixed infection was found. These two patients had been curetted a few days before.

In 13 nullipara *with* history or gross evidence of infection but one showed a growth—the gonococcus.

In 47 parous women *without* history or gross evidence of infection but 4 showed growths. In 1 of these, a prolapsed uterus removed *per vaginam*, a few colonies of short gram-negative were found scattered among several tubes of media—probably from contamination in operation. Another showed contamination by diphtheroid bacilli, leaving but 2 cases for consideration. In 1 of these curettage and dilatation were done as a preliminary to hysterectomy. In the remaining case curettage was done 7 years before for persistent bleeding following spontaneous abortion. Thirteen months before hysterectomy, bleeding again ensued and became a constant oozing. In this case were found numerous pus cells and several colonies of anaerobic streptococci in pure culture.

In 32 cases of parous women *with* history or gross evidence of infection, 9 showed growths. One case, with hæmolytic streptococci in cultures, had been packed to control hæmorrhage 2 days before hysterectomy. One other, op operation, furnished only diphtheroid bacilli inating these 2 cases, 7 infected ones r of which 5 showed chronic gonorrhœal in in endometrium and tubes, and 1 nonhæm streptococci in endometrium and tubes.

Curtis concludes that the endometri nullipara, without history or gross evide pelvic infection, is almost invariably fre bacteria and microscopically normal. almost all women who have undergone pregnancy, with pelvic history otherwise tive, likewise possess bacteria-free endo That patients with a history of chronic inf from whose endometria bacteria are obta almost all have salpingitis with equally growth and, that pyometra and recent e tion of the uterus excepted, the endom almost never shows bacteria except whe is infection of adjacent pelvic tissues an chronic endometritis, *per se*, with bacteri ent in smears or cultures, is practically ruled out as a clinical entity.

Such data indicts the curette and other ments when introduced through the c canal into the uterine cavity. The cervica is so constantly infected that it does no strange, infection may be carried from it i uterine cavity by curette, sound or dilator. it is shown by Curtis that infection of th metrium is nearly always associated with infection of the tubes and most often gono Curettement under such conditions is s contra-indicated. It would seem, the dangers from curettage are ever present, w in the hands of the skilled surgeon or in t his less fortunate confrère, or of the midwi should be practically excluded from the i uterus. If chronic endometritis as a entity is to be ruled out, one potent indicat curettage in the past will be removed.

If bringing this subject to your attenti appeal successfully to your aid in bringing harmony between the use of the uterine and the teaching of gynecological patholo bacteriology, I will be deeply gratified.