# PALPATION OF THE URETERS PER VAGINUM.*

BY

ALBERT M. JUDD, M. D., F. A. C. S.,

Gynecologist to the Kings County, Jewish and Long Island College Hospitals, Consulting Gynecologist St. Joseph's (Far Rockaway) Hospital, the Swedish Hospital and the East New York Dispensary, Consulting Obstetrician Coney Island Hospital, Eastern District Hospital and Dispensary,

Brooklyn, N. Y.

(With five illustrations.)

About two years ago we began in our clinic to feel the pelvic portion of the ureter while making vaginal examinations, and as time went on and we became more adept we arrived at the conclusion that one has not made a complete vaginal examination nor a complete dictation unless, in addition to the usual findings, he has included the ureters. It is as important as the palpation of the tubes, and the normal ureters are more easily palpated than the normal tubes, and they can be felt in 90 per cent. of the cases during routine vaginal examination. Some of the writer's friends seem to doubt the palpability of the ureters, and this article is written with the end in view that he may be able to prove that they are palpable.

The ureter, in its course within the pelvis, lies in front of the internal iliac artery and crosses the inner aspect of the obturator nerve and vessels, and of the obliterated hypogastric vessels. About the level of the ischial spine the ureter bends somewhat inward above the fascia of the pelvic floor to reach the bladder, passing beneath the lower part of the broad ligament of the uterus, and lies to the outer side of the cervix uteri and upper part of the lateral wall of the vagina. It is accompanied in the lower part of its course by the uterine artery, which crosses it on its anterior aspect not far from its termination.

In the early '70's gynecologists began to talk about the approach to the ureters for purposes of diagnosis, but it was not until 1875 that the ureter was catheterized by Simon, guided by the finger, which was placed in the bladder after urethral dilatation. Pawlick, in 1880, entered the ureter directly, guided by external anatomical landmarks. Sänger, in *Archiv für Gynæcologie*, vol. i, 1886, published an article entitled: "Palpation of the Ureters in the Female," claiming that he was placing before the medical public

* Read at a meeting of the New York Obstetrical Society, January 11, 1916.

something that was entirely new, citing cases with their symptomatology and physical findings of pathological conditions of the pelvic portion of the ureters. These cases were mostly those that had been treated for long periods for cystitis, and he remarks that it was peculiar that he had not before included palpation of the ureters in his vaginal findings.

The subject has received scant attention since that time as the cystoscope has withdrawn attention with its finer methods of diagnosis of bladder, ureteral, and kidney conditions from the more ancient method of palpation. Gynecologists have seemed satisfied with their more gross findings in the pelvis, to the exclusion of the finer points in the technic.

In all the recent published references to palpation of the ureter the statement is made that only that short portion of the ureter which is in contact with the anterior vaginal vault is accessible to palpation. The only exception to this is the original article published by Sänger in which he states that the ureter is palpable from the base of the bladder into the parametrium, and even higher. In Kelly and Burnham's book we find the short, trite statement that the normal ureters can, in most cases, be readily palpated abdominally, qualifying the statement that the pelvic ureteral tracts can be traced in the vagina from the ureteral orifices at the trigonum back to the broad ligaments at the side of the cervix.

Dudley in his work on gynecology published in 1913 stated that inflammation of the ureter, as indicated by tenderness on palpation per vaginum, if unrecognized, often leads to disappointment in the treatment of cystitis.

The normal ureter, according to the belief of the writer, is easily palpable from the side of the pelvis, just above the spine of the ischium, although in some cases it lies as much as 4 cm. above the spine, where it lies underneath the peritoneum and previous to entering the broad ligament in the course of its entrance into the bladder. Undoubtedly in the case of a thickened ureter from ureteritis, or from any cause whatever, it can be easily palpable to a far greater extent, as has been exemplified in some of our own findings.

Contrary to the general method advised, which is that palpation be made for the ureter in the anterior vaginal fornix, the writer suggests beginning at the lateral vaginal fornix, using the left index-finger for the left ureter and the right index-finger for the right ureter. The normal ureter presents itself as a slender cord, with its convexity outward and forward, and with a restricted mobility, due to its

anatomical relationship with the peritoneum and side of the pelvis. It is smaller than a goose quill, feeling about the size of an ordinary leather shoe-string. It is best palpated by sweeping the finger above the point of its location and then slightly bending the ends of the fingers, as one might in picking the strings of a guitar, sweeping them down over the ureter, straightening the finger out and going

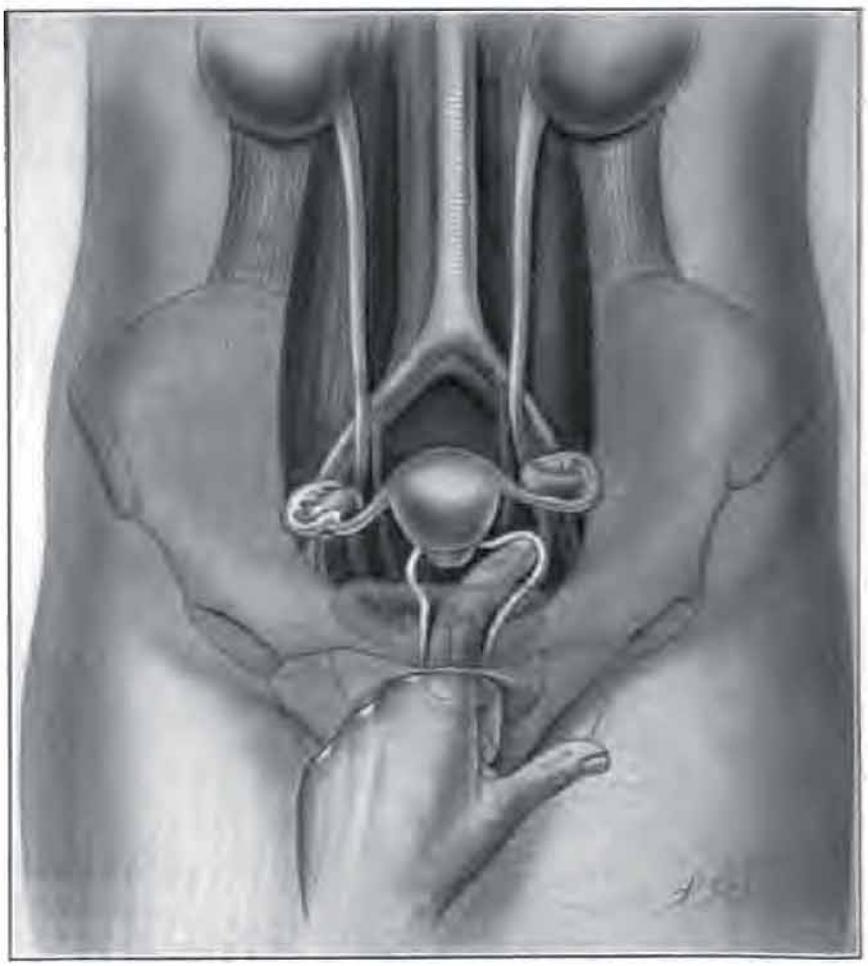

FIG. 1.—Palpation of ureter through vagina.

back and bending it again before going down, always getting the feel of the ureter from above downward, and not from below upward.*

Palpation of the ureters opens a great diagnostic field. Among conditions discoverable are the following:

An acute ureteritis, diagnosticated by simple tenderness along the line of the ureter.

* The writer advises that those who wish to perfect themselves in the diagnostic technic necessary for palpation of the ureter should begin by passing ureteral catheters and thus familiarizing themselves with their location.

Chronic ureteritis and periureteritis, shown by tenderness and thickening; the greater the extent of the periureteritis the greater will be the lessened mobility of the ureter.

Tuberculosis of the ureter and kidney gives a thickened, nodular feeling, with tenderness and restricted mobility.

Calculi and gravel in the ureter furnish a most brilliant field for diagnosis. It is the writer's belief that these conditions can often

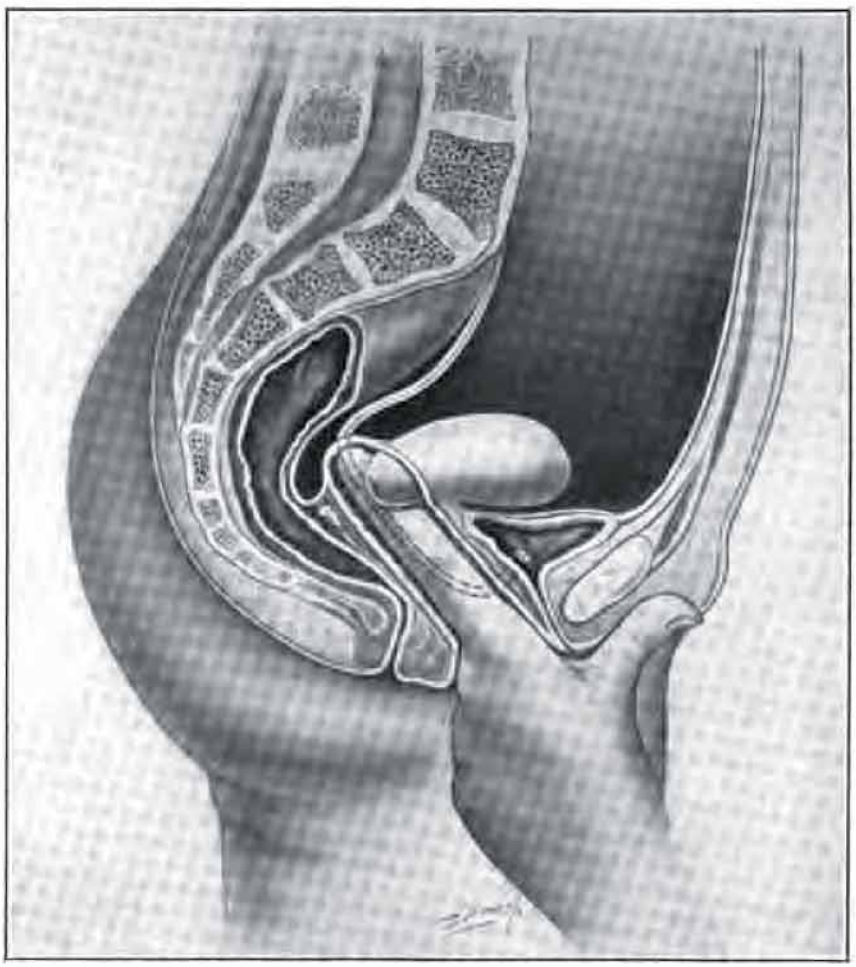

FIG. 2.—Palpation of ureter through vagina.

be detected where the wax-tip ureteral catheter fails to disclose a stone, particularly if the stone is smooth or pocketed. Further and larger experience than the writer has at present had in the surgical relief of ureteral calculi will, he believes, result in simple removal of the calculus by an incision into the ureter per vaginam, although he is free to admit that the first case offering where such an operation is possible the abdomen will be first opened in order more readily to care for a possible accident in the way of cutting the

uterine artery. This is simply as a matter of precaution and not because he expects such an accident to happen.

Pyelitis of the kidney gives a thickened, tender, pelvic ureter. Palpation of the ureters in pyelitis cases in pregnancy is especially valuable.

Double ureters may also be palpated.

Sänger also makes the statement that the pelvic portion of the ureter should always be palpated before undertaking and completing

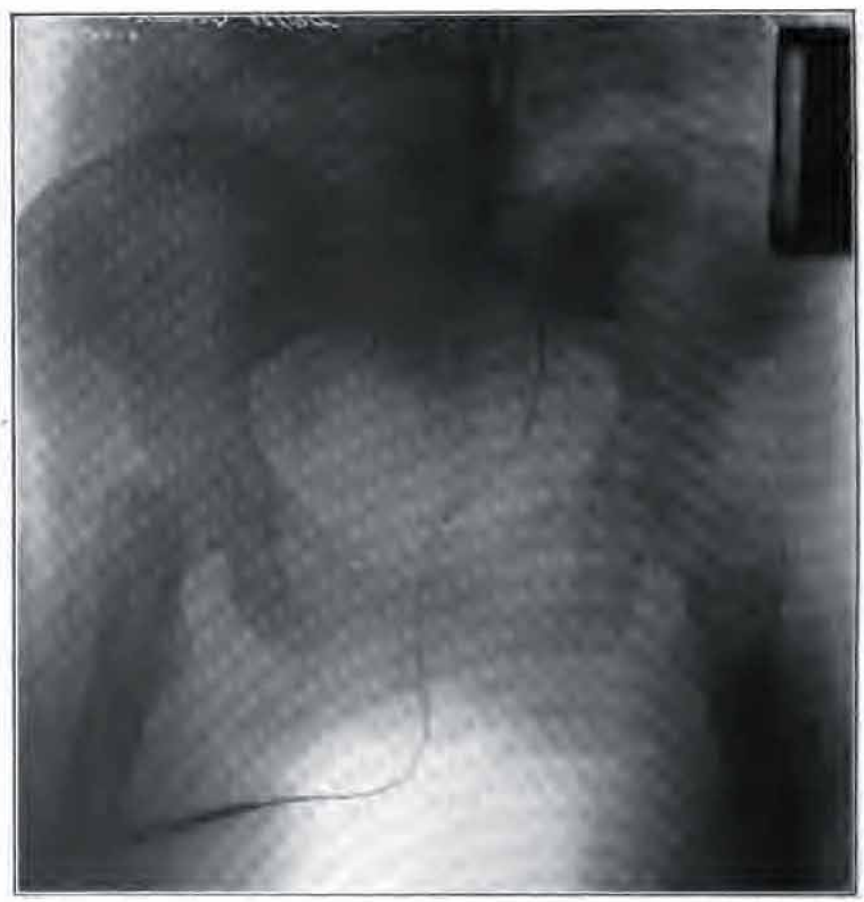

FIG. 3.—Catheter in ureter.

any kidney procedure. This can be carried out in the male through the rectum.

Parametrial exudates and bands from old, extensive tears, which displace, surround, constrict, or kink the ureter, cause ureteritis and symptoms which are often mistaken for a cystitis, and local treatment of these parametrial bands and exudates will result in a complete symptomatic cure. The results following the absorption of parametrial exudates may cause conditions which will require sur-

gical relief of the scar formation which interferes with the patency of the ureters.

As proof of the foregoing statements the writer offers the accompanying *x*-ray plates taken with the *x*-ray catheters in the ureters with the palpating finger so placed as to feel them, together with drawings of the examining hand palpating the ureters.

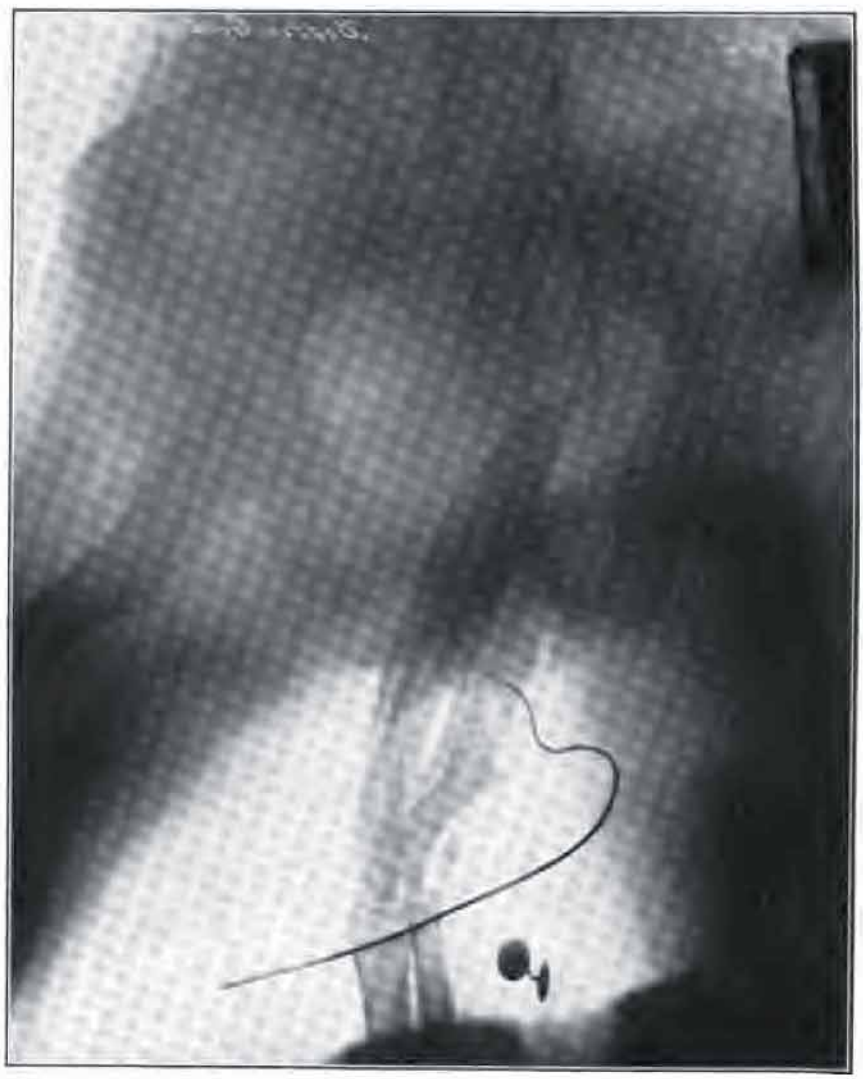

FIG. 4.—Same case as Fig. 3 with finger palpating ureter.

Further study may bring out the fact that the method of completing a hysterectomy is responsible for urinary symptoms following such a procedure, the question being whether the symptoms are due to interference with the bladder trigone, which we all know by cystoscopic examination presents little or no change, or to interference with the ureters which have not been studied as thoroughly as the bladder.

Urinary symptoms sometimes result from retroversion of the uterus, the cervix pressing against the bladder. Tumors of the pelvic organs are often a cause, by pressure upon the ureter, of a pyelitis, which is relieved and finally cured by removal of the cause.

The theory that eclampsia is sometimes caused by pressure upon the pelvic portion of the ureter may be proved, by further study, to have some foundation in fact.

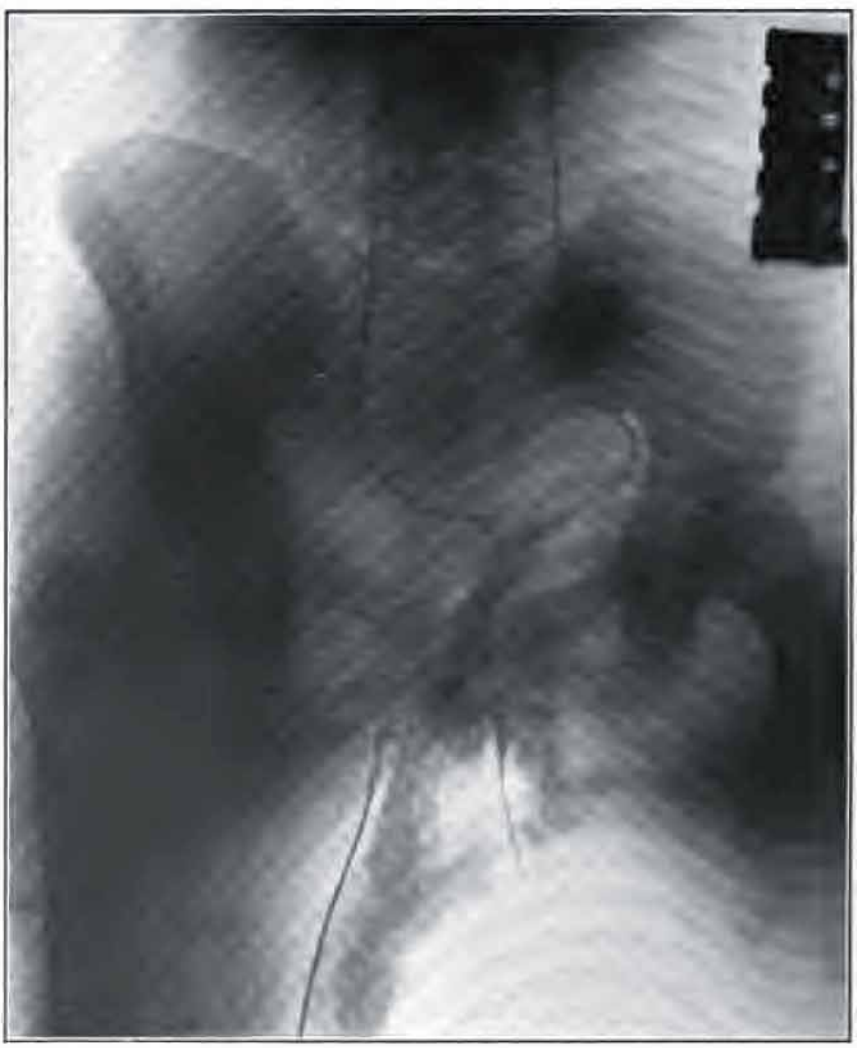

FIG. 5.—Palpation of catheter in ureter.

The writer has recently seen a case of normal two months' pregnancy where the consultant suspected an ectopic owing to the patient having had twenty-four hours previously an attack of acute pain in the left lower abdomen, accompanied by spotting. In this case the left ureter from the spine of the ischium to its entrance into the bladder was distinctly thickened and tender. Nothing was

palpable in the left fornix and there was an undoubted two months' intrauterine pregnancy. The right ureter in this case was normal to the examiner's finger. The spotting was evidently due to the reflex disturbance following upon the ureteritis. The condition was due possibly to small calculi or a beginning pyelitis, although the urinary findings were stated by the doctor, who called the consultant, to be absolutely normal. The laboratory findings of this urine might have been different. The writer, as consultant was perfectly satisfied that his findings were absolutely correct because of the symptomatology of the case.

It is the hope of the writer that his efforts will result in bringing this refinement of diagnostic technic to the attention of his gynecological brethren to such an extent that the study of ureteral conditions will be an aid to them in their work.*

375 Grand Avenue.