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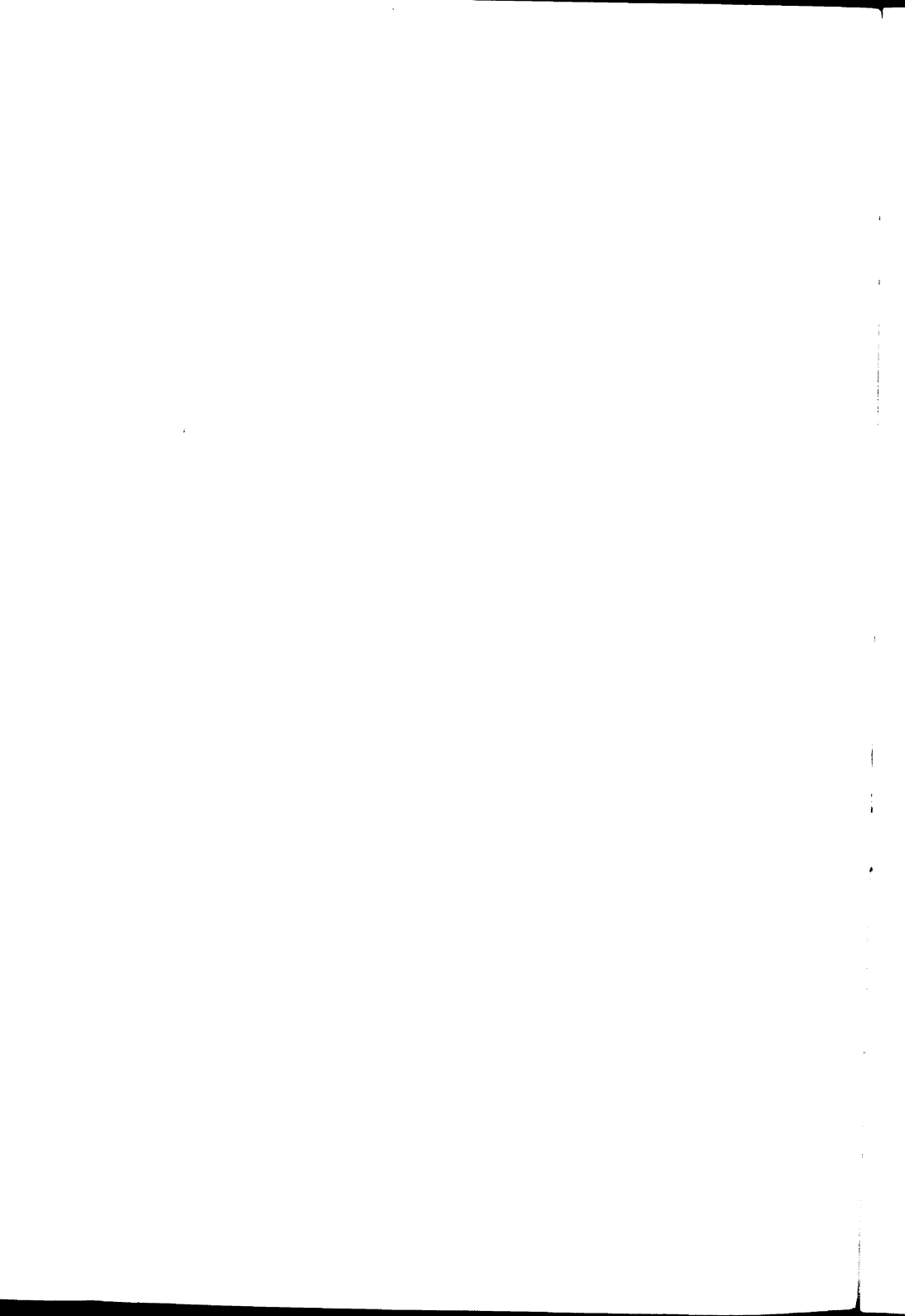


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IN the light of recent developments in the field of obstructing lesions of the prostate (aside from acute pathology) it is interesting to note the numerous attempts that have been made to correct these conditions without resort to the now generally accepted method of enucleation by means of open operation.

Many years ago, Bottini, later followed by Chetwood, essayed the method of galvanocautery incision of the neck of the bladder, the approach to which in most instances was through a perineal exposure, with results so unsatisfactory that further efforts in this direction were practically abandoned.

Among the first really satisfactory methods of endo-urethral removal of bars or prostatic fibroses, was that of the punch apparatus of Young, which when limited strictly to these conditions and in the hands of experts, still functions as an effective procedure.

Later Caulk of St. Louis converted this instrument into a cautery punch and still later the writer of this paper had constructed a telescopic visualized punch with a pistol grip closure. A number of investigators produced other methods of this basic development by Young. Caulk with characteristic enthusiasm and rare courage, elevated the eyebrows of his more conservative colleagues, including the writer, with the statement that he was operating 80 per cent of his prostatic cases

with the cautery punch. Incidentally he is substantiating his claim, not only through his own work but through that of others, notably Engel of Crile's Clinic, a brilliant young associate of Lower and a former pupil of the writer, who has performed with the Caulk method 30 odd operations during the past year with highly satisfactory immediate results.

In this country the first reported cases wherein prostatic encroachment on the urethra and vesical outlet treated endoscopically with the high frequency current were exhibited by the writer nineteen years ago before the Urological Section of the New York Academy of Medicine. One was a case of lobulated prostatic enlargement with 14 ounces of residual urine, in which the patient remained well with a perfectly functioning bladder during a period of ten years' observation. The second, a patient with median lobe hypertrophy, with 4 ounces residual urine, returned with the same symptoms, after a period of five years.

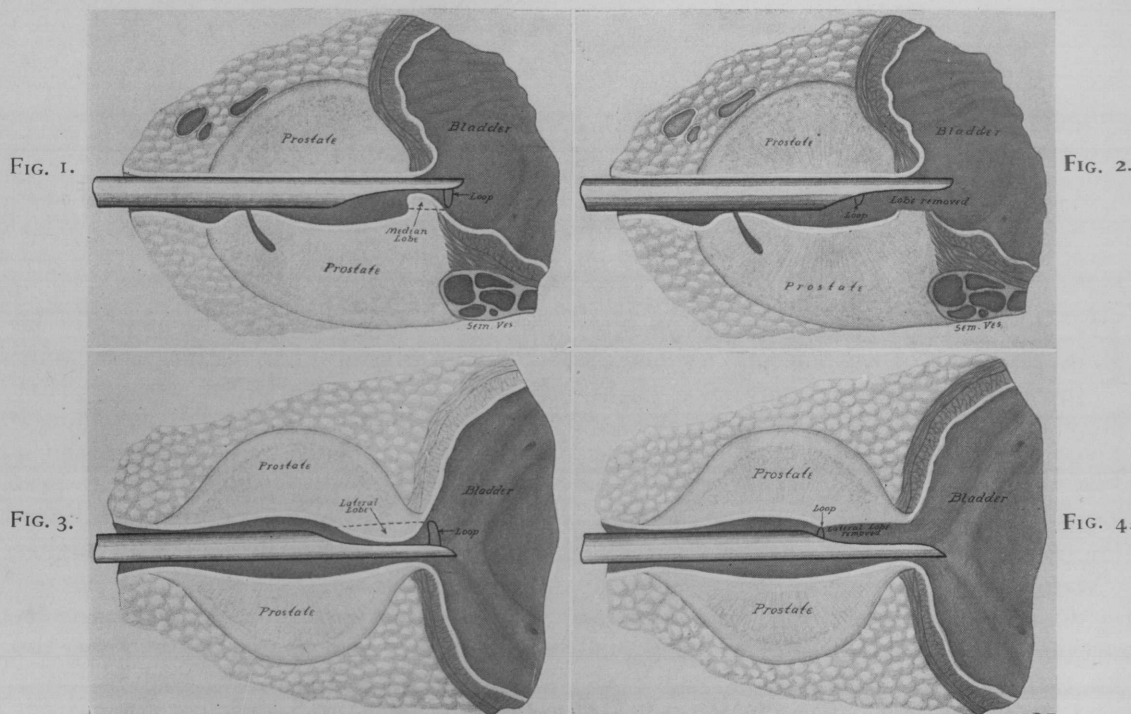
The outcome of subsequent attempts in the general application of this method were such as to lead to the conclusion that with the instrumental and electrical equipment of that day, it was not equal to the exacting demands of this highly technical procedure.

Stern of New York later developed what he called a resectoscope. He believed that in this instrument he had a revolutionary

* Read before the Bellevue Hospital Alumni Association, New York City, October 7, 1931.

method for partial excision of the prostate, at least that portion of the gland that hindered the natural emptying of the

deep sense of appreciation for its personal impress, it has seemed to this writer that these various methods, while highly con-



FIGS. 1 to 4.

bladder. If he did not accomplish quite that much, at least he had assembled the essential elements thereof. It is to be regretted that he did not carry the method through to its logical conclusion.

Devis of North Carolina, a painstaking student of the subject, took up this work and to his great credit has demonstrated that the removal of prostatic encroachments per urethra, by means of an electrical cutting current adapted to an urethroscope, is a wholly feasible operation.

Luis of Paris also has performed a somewhat similar operation which he calls "fourrage de la prostate."

Foley of St. Paul has demonstrated an ingenious method of instrumental endourethral prostatectomy.

Without in any way wishing to derogate from this constructive work, and with a

constructive and in the hands of these men effective, leave much to be desired before a general application of endoscopic prostatic resection can come into universal use.

The ideal requirements for this operation are as follows:

1. The most precise visualization of the prostatic urethra.
2. The greatest possible flexibility of manipulation *under vision*, of the electric cutting loop.
3. Ample electrical power to excise the obstructing prostate under water with a coincidental minimum of hemorrhage and of *tissue coagulation*.
4. Interchangeability and ease of manipulation of electrodes, in the closure of bleeding points.
5. The completion of the operation including the introduction of a No. 24 French whistle tip indwelling catheter,

with but one introduction of the instrument, the sheath being withdrawn after the catheter has been passed through it.

This has been rendered possible by the remarkable achievement of Mr. Frederick Wappler of New York City, whose research

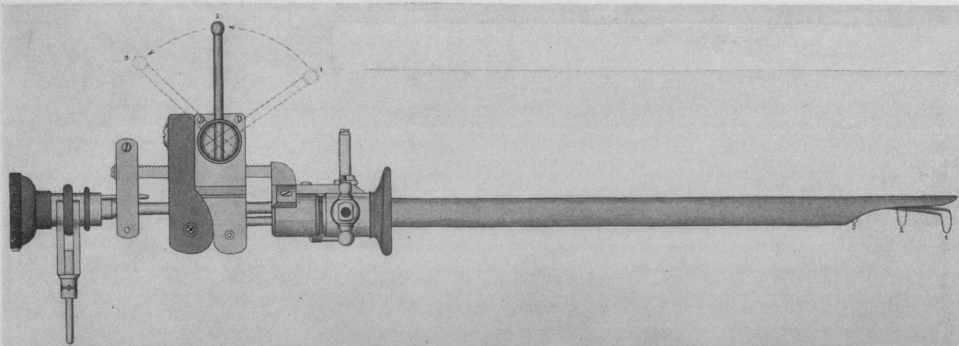


FIG. 5.

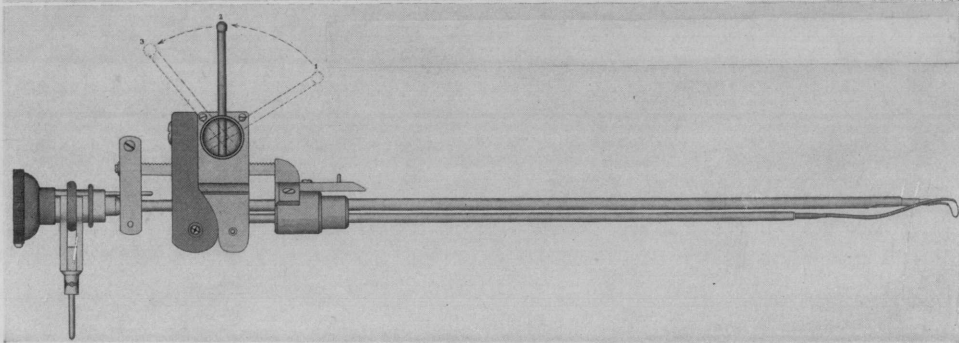


FIG. 6.

FIG. 5.—McCarthy visualized prostate electrode assembled.

FIG. 6.—Shows cutting and optical construction.

6. Rapid epithelialization with a minimum of cicatrization.

on this question (at the solicitation of the writer) has culminated in the construction

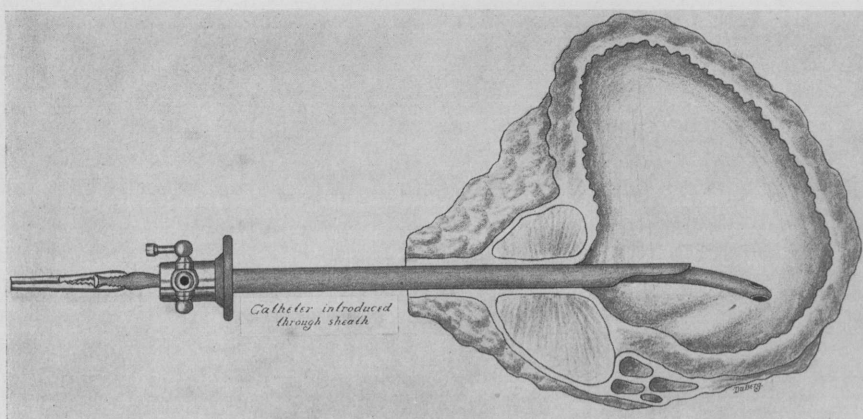


FIG. 7.

For the first time in medicine the equipment herewith described adequately meets these exacting demands.

of an electric arc cutting machine, that insofar as the writer is aware, has not been hitherto attainable. It supplies a degree

of cutting power and desirable current characteristics for the excision of tissue under water, or other aqueous media,

early diagnosis of prostatic carcinoma.

A word of caution should be interjected here to admonish the casual instrument eur

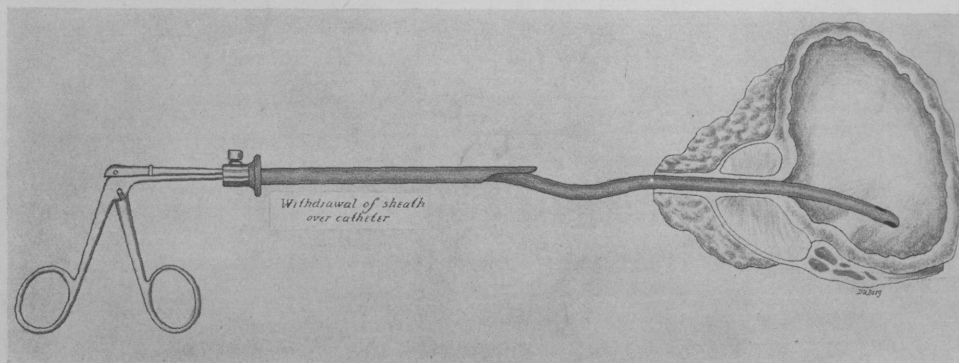


FIG. 8.

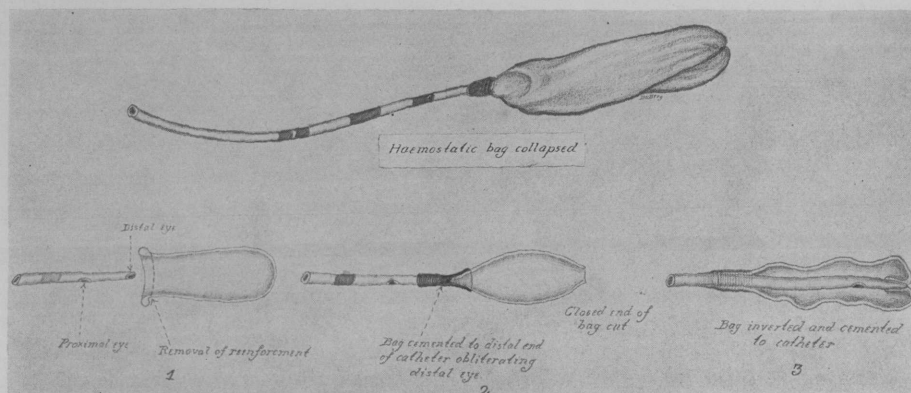


FIG. 9.

greatly in excess of any possible clinical requirement.

The well-known pan-endoscopic system of vision of this author, with a non-conducting bakelite sheath together with the accompanying cutting loop electrodes, constitutes the armamentarium.

With this equipment in the hands of an experienced urologic clinician, who has been trained in the use of the pan-endoscope, wherever it is possible to introduce the instrument, it is demonstrably feasible adequately to treat all cases of prostatic fibrosis—the majority of cases of prostatic hypertrophies—to afford symptomatic relief in the presence of scirrhus types of carcinoma of the prostate, without resort to open operation. It may also serve in certain cases as an ideal measure in the

or the occasional surgeon, that this is not a simple procedure. It is in fact a highly technical one, to be essayed only by those expert with instruments and qualified to cope with the occasional difficulties that in a large series of cases are inevitable.

Nor should it be performed promiscuously, or under circumstances preventing personal supervision of the postoperative care. In fact the only mortality encountered by the writer since the inauguration of this study occurred under the latter conditions.

In the cases treated by this method to date, there has been a notable absence of worry on the part of the surgeon, patient and family, which have been an all too frequent concomitant of open prostatectomy. The brevity of hospital domicile, two to ten days, and in this respect we have perhaps

been ultraconservative, has, especially in these days, decided economic advantages.

Following the hospital domicile there is a brief period of increased frequency of micturition, which soon disappears. In but 2 of our cases was there any noticeable degree of post-hospital discomfort, which was in no measure comparable to the obvious and prolonged disability following open prostatectomy.

In this series we have treated types of prostatic obstruction from the *now* simple fibrosis, to the complete retention of middle and lateral lobe enlargement, with symptomatic relief and the ability completely to empty the bladder.

Now if these assertions be true, and we are prepared to substantiate them, the case types previously described should constitute but a minor field of application, for this advanced technique. If it is possible by this method, as is here asserted, to remould the prostatic urethra at will, to remove with complete facility early prostatic encroachments or fibroses, it would seem the method should experience its greatest usefulness in the first field of medicine, Prophylaxis.

CONCLUSION

It should be the duty of the internist and general practitioner to more closely scrutinize and evaluate the symptoms of individuals in the prostatic range, of nocturia, hesitancy at the onset, feeble and prolonged micturitional act, terminal dribbling, etc. In all cases residual urine should routinely be estimated.

For the very good reason that, if the judgment of the writer is not strabismic, it is quite within the domain of the probable to prevent these prostatic obstructive manifestations, with their attendant pathologic sequelae, their accompanying morbidity, mental and physical.

Obviously, the prostate in more senses than one, is "At the Crossroad."

Since the reading of the foregoing paper, much has been gained in the way of additional clinical experience, not only on the part of the writer and his immediate associates, but also with a number of

collaborators throughout the country.

There have also been added to the technical equipment certain refinements,

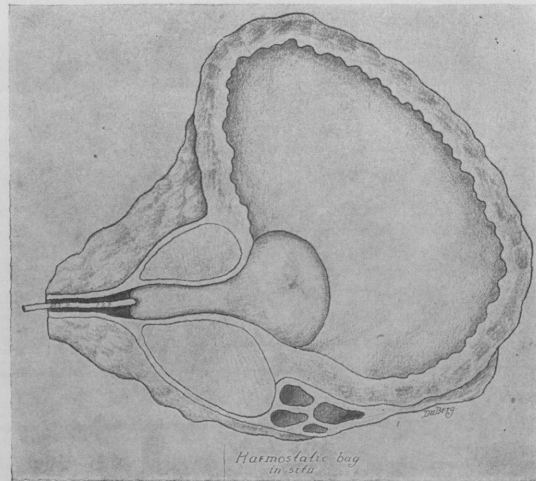


FIG. 10.

as well as preventive measures for the control of oozing in the unusual type of case. Pertinent questions have also been asked, which will be herein answered.

The acid test of time generally acts as a brake on early enthusiasm. Here it has had the opposite effect on my immediate associates, my collaborators and myself. This is proved by our joint experience in several hundred cases. It has been stated that if a departmental head can sell a new procedure to his immediate associates, he can with equanimity face the outside world. For it is they who "follow through" on his cases, have a precise knowledge of postoperative complications, and poor end results cannot be glossed over.

It is our general conviction that the procedure is a revolutionary one, which will find a large and important place in the prevention and management of benign prostatic disease, and in the alleviation of the malignant.

The following questions have been asked:

How may the occasional active oozing be controlled? Bleeding points are visualized and coagulated under vision. The return flow should be free from color on the completion of the operation. Should there be persistent oozing difficult to control and involving excessive coagulation which

is not to be practiced, a balloon bag has been provided, which can be made in the clinic. The bag consists of a very thin finger cot of good quality, attached to a calibrated whistle tip ureteral catheter. The open end of the cot is freed of its reinforcement and by means of rubber cement, fixed to the distal end of the catheter. This fixation includes the end of the catheter and the distal eye, leaving the proximal eye free. Fine black silk is wound about the cemented end of the cot. A small opening is then made in the closed end of the cot, which is then inverted over the catheter, about three-fourths as far as it will go. It is important that the bag should be relaxed and not on the stretch; else when filled, it will bend the filling catheter. The end of the cot is then cemented to the shaft of the catheter below the proximal eye, the cemented portion is then reinforced with a winding of black silk and rendered smooth with cement substance. Acknowledgment is here made to my associate Dr. Joseph A. Hyams, for the final consummation of this valuable addition to our armamentarium. Thus constructed the operator has a simple and effective means of control in a manner similar to the Ballenger or Hagner bag. When well lubricated with liquid albolin it may be introduced through the sheath, the latter withdrawn, the bag inflated with 40–50 c.c. of water and drawn gently and with moderate firmness, into the prostatic urethra, about one third the pressure employed with the ordinary prostatic bag being used.

The bag may be maintained in position for one or two hours, after which it is deflated and withdrawn, and a No. 24 French whistle tip catheter introduced for drainage. The bag may be reintroduced at will by first passing the pan-endoscope.

How much tissue can be removed? As much as desired. The prostatic urethra may be remoulded at will.

It is well for urologists, even the most competent, to at first confine their work to the floor of the prostatic urethra. They will be surprised at the functional results

noted. This work has exploded the previous misconception of the important role played in urinary obstruction by the lateral lobes.

What about the permanency of the procedure? The experiences of Caulk and Davis, who have concentrated their efforts on this field along different technical lines for a much longer period than the writer, would seem to indicate its relative permanency. Cysto-endoscopic study of our earliest cases reveals plastic, smooth urethrae, and a maintenance of symptomatic relief.

The crux of the matter may be summed up in the statement that medical men who know most about it elect this procedure for themselves in preference to the more radical prostatectomy. Inasmuch as it is attended with minimal risk, with but brief hospitalization, a repetition of the revision should not militate against it.

What about repeats? In our Clinic at the Post-Graduate Hospital there have been, all told, about half a dozen. This may be explained on the technical ground that we proceeded most cautiously until there was sufficient clinical background, as a basis for the further extension of the step.

What preliminary preparation should these patients have? The same as for prostatectomy. Especial caution must here be exercised in the toilet of the bladder and sterilization of the urine.

What is the immediate postoperative care? Frequent irrigation with sterile, normal salt solution through the catheter and the constant maintenance of drainage. Otherwise one must intervene and correct the condition.

When should the indwelling catheter be withdrawn? After the drainage has been constantly clear for two days. Generally on the third or fourth day.

Finally, because of the unprecedented interest in this procedure there is already at hand a large and rapidly accumulating amount of clinical data. This justifies the claims made in this paper, and will, at an early date, serve to determine its limitations as well as its precise field of application.