

dose was given. The growth entirely disappeared. The other day I heard from him, and he is reported to be perfectly well. We should not forget that there are such cases as I have had and as Coley has reported, which are wonderfully helped and probably cured by the double bacillus injection.

DR. EDWARD L. KEYES, JR., New York: In two cases I have endeavored to follow out practically the technic suggested by Dr. Hinman of clearing up the space between the ureter and the aorta as far as the kidney, and in both instances I have found the veins implicated in the disease, extending to and beyond the kidney. In one case there was a large mass of secondary glandular involvement even above the kidney, and in the other there was simply a venous involvement up to the kidney. Several other patients I have seen die from metastasis extending so rapidly after the disease once got started and of such wide distribution that it seemed to me that, taken in connection with the known fact that the veins of the pelvis and abdomen are frequently involved in the growth, the metastases occur by the vascular instead of the lymphatic route in the large majority of cases. If that is the case, I question whether an extensive dissection is going to help us revise our mortality statistics. I fancy the real thing is to get at the cases early, before vascular metastases have occurred and not to pinch the vessels when you are examining them.

DR. M. KROTOSZYNER, San Francisco: In connection with Dr. Keyes' remarks, I believe that the salvation of our patients does not lie so much in the radical operation as in the early diagnosis. I do not think there is any condition in the genito-urinary tract so difficult to diagnose as enlargements of the scrotum involving the testicle. It is in these cases that the Wassermann reaction has complicated the diagnostic difficulties. Any physician who has seen many of those doubtful tumors will admit that three large conditions loom up right from the start—tuberculosis, tumor and syphilis—and he will not be willing to put the patient on the operating-table before he has at least satisfied himself that a diagnosis of syphilis can be excluded. I have seen cases in which the Wassermann was slightly or even strongly positive and in which afterwards the diagnosis of primary carcinoma of the testicle was verified pathologically. What are we going to do? In one case three months had been lost by this means, not only in my hands, but in the hands of my predecessors. I think a means ought to be established by which we are enabled as early as possible to make the diagnosis. I think then the result of our operative procedures will be better.

DR. FRANK HINMAN, Baltimore: With regard to Dr. Keyes' statement concerning vascular and glandular involvement, forty-six of these cases, I think, gave a very clear indication as to the first metastasis of these tumors. In twenty-two cases the lymphatic glands were first involved at the time of operation. In eleven of these twenty-two cases the disease was so extensive as to render them inoperable. This fact, however, I think does not detract from the object of the radical operation, because four of these patients were apparently cured. An early diagnosis, of course, is the all-important thing in the treatment, but it has been shown that castration will only cure from 20 to 50 per cent. of these cases, and the radical operation, from a surgical point of view, is perfectly feasible and technically not difficult. So that in every case the lymphatic region should be explored. There certainly will be a small proportion of patients who will be cured by the radical operation who otherwise would certainly die.

"Idiopathic" Insomnia.—Insomnia is a symptom always; it is never a disease. In many text-books there is a reference to "idiopathic insomnia." That is the insomnia described by the ignorant man. We are all ignorant on this subject, and the best thing is to admit our ignorance, rather than trying to satisfy our consciences by describing it as idiopathic, or putting a long title to it or classifying it, and concluding that all is well.—H. Crichton Miller, *Medical Press and Circular*.

DIVERTICULA OF THE URINARY BLADDER

WITH REPORT OF CASES *

WILLIAM E. LOWER, M.D.

CLEVELAND

The increasing literature regarding diverticula of the urinary bladder and the frequent reports of cases which are now appearing indicate, in my opinion, not that this condition is occurring more frequently than formerly, but that it is now being more accurately diagnosed and that its treatment is now yielding more satisfactory results. Very complete reviews of the literature on this subject have been made by Fischer¹ and by Lerche,² who show that opinions regarding the exact etiology of diverticula still vary. Some writers believe that diverticula are always congenital while others contend that they are acquired, the point of differentiation being the presence or absence of muscular fibers in the walls of the sac forming the diverticulum. If muscular fibers be present it still is considered by many that the diverticulum is of congenital origin. If, however, the sac be formed only of mucous membrane, that is considered evidence that the diverticulum is acquired. It has been shown recently, however, that in practically all cases some muscular fibers are found in the sac wall, though they often are very much attenuated.

It seems to me, however, from the clinical aspects of the cases that have come under my observation and are here reported, that these diverticula were acquired, and the argument, which also applies for most diverticula, is: 1. They scarcely ever are found in the very young, but for the most part in persons past middle life, a time at which obstruction to urinary outlet most frequently occurs. Necropsies on children do not show this condition, or at least its presence is not mentioned in most post-mortem records. Such anomalies as hour-glass or double bladder which are occasionally reported at post-mortem findings in children are generally associated with double urethras or multiple ureters and other abnormalities and should not be considered identical with true clinical diverticula. 2. They very seldom occur in women, the ratio being about one to ten. 3. In most cases the bladder wall is much thickened, a condition present in most cases indicating obstruction to the urinary outlet, which produces more or less retention. In the one case of a woman in my own series a urethral caruncle was present which caused her so much pain that she refrained from voiding as much as possible and never completely emptied her bladder.

Even Englisch, as quoted by Fischer, believes that the so-called congenital diverticula are "based on the presence of some obstacle to the outflow of urine, in consequence of which the weak points of the muscular arrangement of the bladder give way. These obstacles may be produced by inflammatory conditions of the bladder or urethra during intra-uterine life but which have healed up, leaving no vestiges after birth."

That there probably is some congenital condition of the bladder wall which under certain conditions, such, for example, as obstruction and overdistention for a

* Read before the Section on Genito-Urinary Diseases at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

1. Fischer: Congenital Diverticula of the Bladder, Surg., Gynec. and Obst., 1910, x, 156.

2. Lerche: The Surgical Treatment of Diverticula of the Urinary Bladder, with Report of a Case and a New Device for Facilitating the Operation, Ann. Surg., 1912, lv, 285.

long time, will produce a diverticulum, is true without a doubt, but the opinion that these diverticula exist as such from early childhood does not seem to me to be tenable.

While it would be of very great interest to know definitely whether all diverticula are congenital or all are acquired, or whether a certain number are congenital and others acquired, it is not of as much importance as to know how to diagnose the condition and how best to treat it, and it is to the diagnosis and the

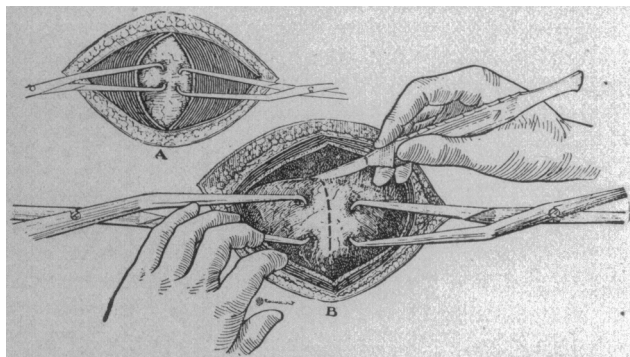


Fig. 1.—A, separation of muscles, bringing the bladder up with curved forceps; B, dissecting the bladder free from the peritoneum.

treatment therefore that I specially wish to invite your discussion.

DIAGNOSIS

The presence of diverticula can nearly always be determined by the cystoscope in the hands of a person who is experienced in its use, but may be easily overlooked by the inexperienced. The diverticulum opening is sometimes so very small that it looks like a mere dark speck in the field. This apparently insignificant speck, however, may be the opening of a very large diverticulum. If the presence of a diverticulum is evident or is suspected, the diagnosis may be made certain and the size and exact location of the sac determined by the aid of collargol and the Roentgen ray. A posterior sac may be overlooked by an anterior-posterior picture, but it can generally be detected by taking a picture at an angle. This seems to me a more exact method than to measure the size of the sac with a ureteral catheter.

SYMPTOMS

Frequent urination induced by the constant presence of residual urine in the sac is the most common symptom. In most cases the frequent urination and the failure to empty the bladder completely do not cause any special annoyance until infection and cystitis develop, when the patient seeks advice because of the painful symptoms of these conditions. Catheterization may not result in the withdrawal of much urine, for the catheter may not enter the orifice of the diverticulum. If the diverticulum be infected, the urine, even after repeated irrigations, is cloudy and in a great many cases is very fetid.

If the diverticulum be very large, a definite tumor may be detected by rectal or vaginal examination, or even by abdominal palpation. Hematuria frequently occurs also.

TREATMENT

If the opening of the diverticulum be small and the sac large as is frequently the case and if infection be present, palliative treatment is of no avail, for as it is impossible to cleanse the diverticulum thoroughly the infection cannot be checked. Unless radical measures

be taken the infection will in all probability ascend, and will produce secondary and often fatal renal involvements.

Many kinds of operative treatment have been advised, but the radical treatment for complete removal of the sac did not have much success until comparatively recent time because the removal of the sac was difficult, and complications and unfavorable results often followed. In his report in 1912 Lerche collected but fourteen cases and to this list appended one of his own in which diverticula had been treated by excision; to his list may now be added cases reported by Cabot, Chute, Bergener, Bryan, Marion, Beer, Lower and others. In most cases excision has been followed by permanent good results. To a large extent, of course, the success of excision depends on the technic. In my own earlier cases I divided the bladder down to the diverticulum, separated the attachment to the bladder and then tried dissecting the sac away from its surrounding tissues. On account of the collapsed sac this method proved very unsatisfactory in two cases, and I had a definite recurrence in one in which it was evident that the entire mucous membrane had not been removed.

In two cases in which the diverticula were rather shallow I everted the sacs and brought them up into the bladder and excised and closed over the attachment with chromic catgut.

As diverticula are often situated near the ureteral orifices so that not infrequently the ureters empty into them, they must either be resected and transplanted or else dissected out by the ingenious flap method described by Young.

The method of removal which I have found the most satisfactory and which I believe is applicable to practically all cases is to convert the sac into a solid tumor by the method described incidentally in a case reported by Cabot³ in 1912. In general the method described by Lerche in his report of using a small rubber bag inserted into the diverticulum and then

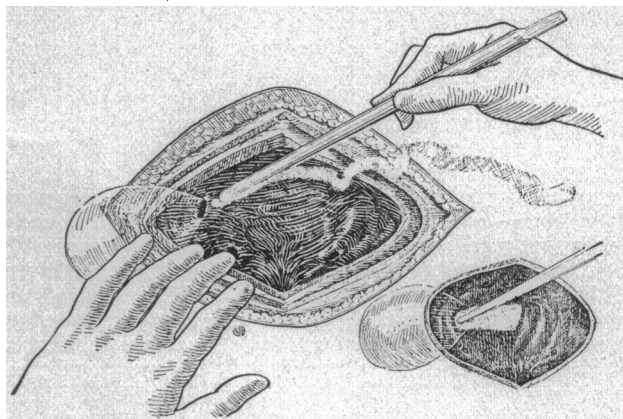


Fig. 2.—Packing the diverticulum with gauze.

inflated, answers the same purpose, but is not so easily done.

In three of the cases which I shall report I first packed the sacs tightly with narrow strips of gauze and was then able to remove them completely without the slightest difficulty. In one case the tumor was quite large. In another the diverticulum was much smaller. In the third case there were four separate and distinct diverticula, three of which were easily

3. Cabot: Tr. Am. Assn. Gen.-Urin. Surg., 1912, vii, 62.

removed after they had been packed tightly with gauze, while the fourth was removed by bringing the sac up through the bladder. In these three cases the convalescence was uninterrupted and in two there have been splendid functional results, but in the third there is still some residual urine which I believe to be due to a prostate which I did not completely remove at the time, although I did remove a projecting lobe which seemed to obstruct the urethra. In three out of five cases of men in each of which I particularly noted

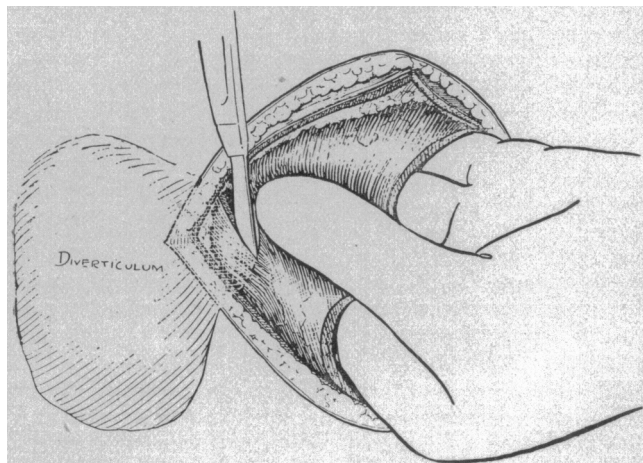


Fig. 3.—Division of the attachment of the diverticulum.

the urethral outlet there was distinct evidence of obstruction by small projecting lobes of the prostate, and in the other two the lateral lobes of the prostates were enlarged.

I have already referred to the case of the woman whose urethra was partially obstructed by a caruncle. In the late cases that have come under my observation I was able to determine the size and location of the diverticula by the use of collargol and roentgenoscopy. In three cases I was able to get postoperative pictures. These show the entire absence of the diverticula which are visible in the preoperative pictures.

By using collargol and the Roentgen ray for diagnosis, and by comparing the preoperative and postoperative pictures, we are able to draw very definite conclusions regarding the value of excision in these cases.

In those cases in which excision seems to be impossible, the method which has recently been suggested and so practically applied by Squier⁴ is well worth a trial. He advises that a large communication be established between the bladder and the diverticulum by the use of clamps and sutures after the manner of a gastro-enterostomy.

In two cases I tried to make the diverticulum a part of the bladder cavity by dilating the orifice, but this procedure was unsuccessful in each instance as contracture followed. One patient was operated on a second time, and the other still has trouble.

TECHNIC OF OPERATION

In all the cases in which I have removed the diverticula by the method of first converting them into solid tumors, the following method was used:

1. Nitrous oxid-oxygen anesthesia with local infiltration of novocain.

2. Transverse incision through skin and fascia.

4. Squier: New York Med. Jour., 1914, xcix, 1026.

3. Infiltration of muscles. Separation of muscles and bringing the bladder up with curved forceps, and then dissecting the bladder free from the peritoneum (Fig. 1, A and B).

4. Packing the diverticula tightly (Fig. 2).

Then with the fingers inside the bladder, the index-finger in the opening of the diverticulum and the thumb on the outside, the attachment to the bladder is exposed and divided (Fig. 3).

The bladder is then retracted away from the diverticulum, traction is made on the tumor and it is dissected free from the surrounding tissue (Fig. 4).

With some of the tumors this last step was not necessary—the tumor could be brought up first and the dissection from the attachment of the bladder made secondly.

REPORT OF CASES

I wish to append herewith report of seven cases, in six of which operation was performed for the removal of the diverticula. Two other cases which I have seen are not classified herewith because I did not determine the depth or size of the diverticula, and the openings that were visible may have been but shallow depressions; but the cases cited are those which had a definite well-marked and demonstrable sac. Six of these were men and one a woman, the oldest was aged 78 and the youngest 43, average age 59. In every case there could be demonstrated an obstruction to the urethral outlet. The diverticula were single in four cases and multiple in three. The largest number in any one case was four. In one case I first did the operation of enlarging the diverticulum opening. This not giving relief, I later resected the diverticulum and drained through the perineum.

CASE 1.—Man aged 49, a letter carrier, referred by Dr. Wheeland. Complaint was bladder trouble. Family history

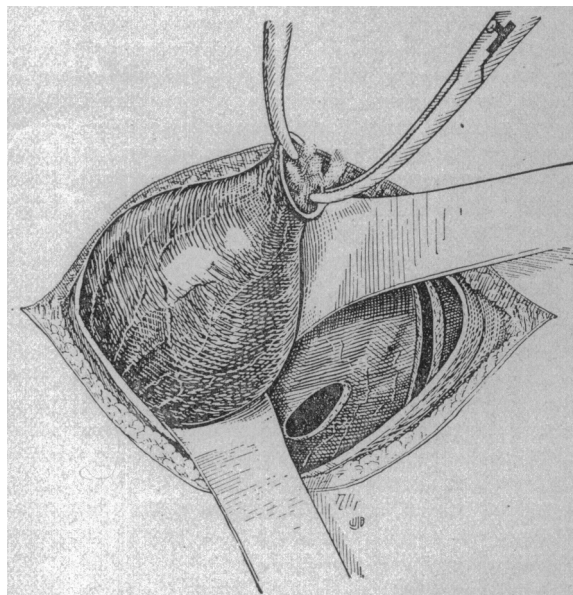


Fig. 4.—Removal of diverticulum.

had no bearing on the case. The patient had specific urethritis when 44—five years previous. Denies any luetic infection. Two years ago began to have difficult urination. Lost 10 to 15 pounds in the last year or two. No other symptoms besides the ones mentioned above. Has catheterized himself since February, 1909.

Cystoscopic Examination.—Bladder capacity 300 c.c. Required many repeated irrigations in order to get the fluid

sufficiently clear for observation. Situated on the bottom of the bladder near the left ureteral orifice is a large opening of a diverticulum from which, with the finger in the rectum, very cloudy solution could be expressed.

Operation.—Diverticulum was full of foul-smelling fluid. The opening was dilated. An attempt was made to remove the diverticulum from within the bladder, but this was not successful. A temporary drain was put in the bladder and the diverticulum irrigated through the tube. After being

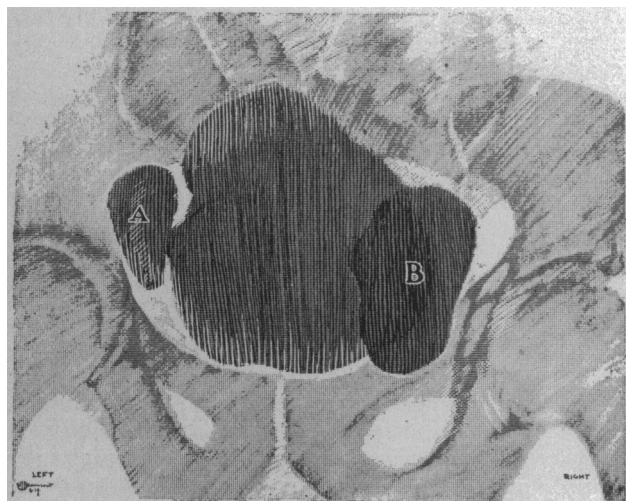


Fig. 5.—Outlines of diverticula (Case 4) as shown by Roentgen ray.

irrigated for several weeks the patient was able to void without much difficulty, but could not completely empty the bladder. He left the hospital very much improved. He returned again six months later.

Second Operation.—Suprapubic incision as before. Bladder opened and divided down to the opening of the diverticulum. The diverticulum was cut away from its attachment to the bladder and an attempt made to dissect it out. This was only partially successful. An opening was made from this cavity through the perineum and a drainage tube inserted. It required six weeks for the perineal wound to heal, the suprapubic wound in the meantime having closed. Patient was very much relieved for a considerable time, but later began to have the same symptoms again. Cystoscopic examination two years later revealed bladder capacity of 300 c.c. Ureteral orifices plainly seen and in the region of the original opening of the diverticulum is another opening. Undoubtedly a reformed diverticulum the size of which I could not determine; as no picture was taken with collargol, exact size is not known. The patient has promised to return for further observation and treatment.

CASE 2.—Man, aged 58, commission merchant, came under my observation through the courtesy of Dr. Garnhart. Principal complaint was pain in the region of the bladder and difficulty in urination. For the past eight or nine years he had slight burning on micturition. One year ago pain was very severe. Had great difficulty in starting the flow and could pass only a few drops. Pain subsided at the end of urination. After having sounds passed, which caused slight hemorrhage, he was obliged to use a catheter for several weeks, and for some time afterward the attacks would come on when he had been exposed to cold, necessitating the use of the catheter. Urine became very putrid, cloudy and foul smelling. A physician catheterized him daily and washed out the bladder. When a desire to urinate came on he had extreme pain.

Roentgenoscopy of kidney and bladder was negative; catheterization drew from 8 to 10 ounces of urine. Cystoscopic examination shows a very greatly inflamed bladder with an opening of a diverticulum situated on right side near right ureteral orifice.

Operation.—Median incision, bladder exposed and incised in a longitudinal direction. The opening of the diverticulum was seen at the base just to the right of the median line. The opening was quite small and on pressure a very turbid fluid was seen to exude. Judging from the amount of fluid emptied from the diverticulum, it seemed to me as though the diverticulum was about half the size of the bladder. The opening of the diverticulum, which admitted only a small sound, was dilated and an attempt made to invert the sac. This we were unable to do. The opening of the diverticulum was then enlarged to the width of about 2 inches. On account of patient's condition being bad, further effort at resection was not made. Rubber drain inserted down to the diverticulum. Closure of fascia with interrupted chromicized catgut and the skin with silkworm-gut.

After bladder was opened the prostate was found to be somewhat enlarged, which was thought to act as an obstruction, but prostatectomy was not done because of the condition of the patient. He made an uninterrupted recovery. At the end of two weeks wound was healed and catheter removed. Patient was able to void urine very comfortably for a short time; then suprapubic wound reopened and discharged for a number of weeks. The patient now feels quite comfortable, the severe irritation which he formerly had has disappeared and by daily irrigations he is able to keep the bladder in very good condition. He has gained in weight and his general condition is much improved, but he still has to depend on the catheter.

I did not inject collargol or take a picture and consequently cannot show the exact size of the diverticulum; but at the time of operation the diverticulum was explored with finger and found to be very deep.

CASE 3.—Man, aged 43, married, merchant, complains of difficult urination. Family and personal history unimportant. Neisser infection twenty-five years ago. Denies lues. Urethral stricture for about fifteen years. About one and one-half years ago present trouble began; difficult urination. Had trouble in starting stream. At times there have been intervals when he would be very much better, then there would be a great amount of pain. He would usually be relieved by taking hot sitz-baths, and would pass the urine

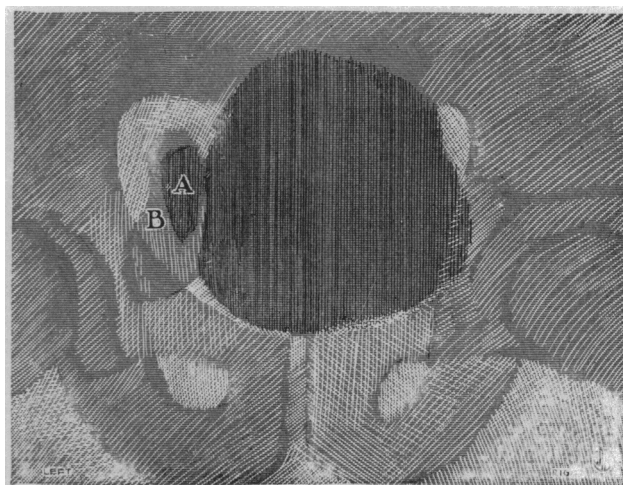


Fig. 6.—Diverticula (A, B) as shown by Roentgen ray (Case 5).

much more easily. Kept on getting worse and at times there would be a great amount of pus present in the urine. Collargol and roentgenoscopy revealed a diverticulum just posterior to the trigonum on the right side.

Operation.—Under nitrous oxid and novocain a transverse incision was made, fascia dissected up, muscles infiltrated with novocain, bladder exposed and incised. Bladder wall very much thickened. Mucosa much inflamed, and at the bottom of the bladder could be seen a thick white pus welling up into the opening of the diverticulum. The edge of the diverticulum

was caught up with curved hooks and the whole base of the bladder lifted. Then a hemostat was introduced into the diverticulum and the diverticulum invaginated without very much difficulty, cut off and the opening closed. The bladder wound closed with chromicized catgut. On inspecting the urethral orifice to discover the cause of his retention a small protruding middle lobe was seen extending 1 cm. into the bladder. This was found to act as a valve over the urethral outlet and was removed. The opening of the bladder was

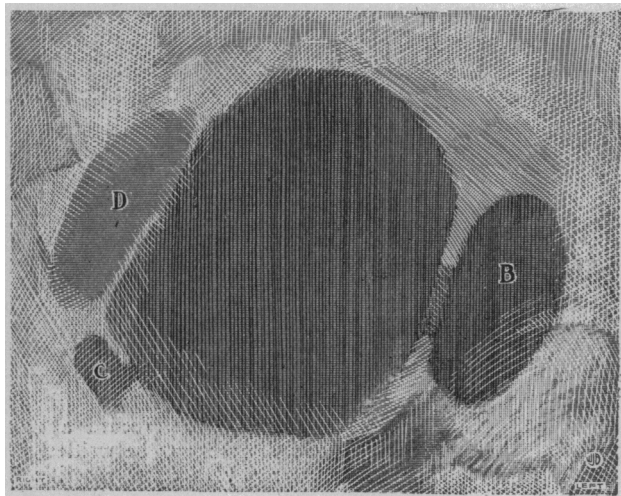


Fig. 7.—Diverticula (B, C, D) as shown by Roentgen ray (Case 5).

closed with chromicized catgut. Catheter inserted into the urethra and allowed to remain. Primary union. Patient left hospital in good condition and recently reported that he is free from his old symptoms and feeling splendid.

CASE 4.—Farmer, aged 78, entered hospital, October, 1913, because of painful and frequent urination. Family history has no bearing on present trouble.

Cystoscopic Examination.—Required repeated washings to admit of observation. About 200 c.c. of boracic-acid solution injected into the bladder. Introduction of the cystoscope easy. On the right side near the ureteral orifice is an opening from which cloudy fluid escapes. This is undoubtedly the opening of a diverticulum. He was sent from the cystoscopic room to the Roentgen-ray room for roentgenoscopy after collargol had been injected into the bladder. A very large diverticulum situated posteriorly, and a smaller one situated laterally, were revealed (Fig. 5). He has an enlarged prostate, but because of his age and feeble condition, and with past experience with diverticula I decided that the risk was too great and the outcome too uncertain, so he was allowed to return home. No report has been received from him since.

CASE 5.—Man, aged 54. Complaint, bladder trouble. Family history unimportant. No venereal history. About five years ago had a sound passed because of some irritation at the neck of the bladder. Since then he has had more or less difficulty in voiding urine. Has rather frequent desire to void and is unable to empty the bladder completely. Urine has become very cloudy and foul smelling.

Cystoscopic Examination.—Bladder capacity 300 c.c.; bladder mucosa very much inflamed—both lobes of prostate enlarged—bladder much trabeculated, and several dark openings from which turbid fluid escaped could be seen. Bladder was injected with collargol and a roentgenogram taken anteriorly, posteriorly and at an angle. The pictures show the presence of four separate pouches (Figs. 6 and 7).

Operation.—Nitrous oxid and novocain. Transverse incision. Fascia divided transversely, muscles separated, bladder exposed and opened. Openings of the diverticulum were readily seen. Small strips of plain gauze were packed into the openings on the left side, converting the sacs into semi-solid tumors. They were then dissected down on from the outside of the bladder and were easily detected as tumors

attached to the bladder wall. They were excised at the attachment of the bladder and openings closed with No. 00 chromic catgut. A smaller one on the right side was treated in the same way. A similar one near the median line was invaginated and removed through the bladder without packing. Opening closed. On examining the internal urethral orifice a middle lobe of the prostate was seen projecting and was removed. The bladder opening then closed and catheter inserted into the bladder for drainage.

Patient made an uneventful recovery and left the hospital in three weeks' time. A postoperative roentgenoscopy revealed complete absence of the tumors present in the first picture.

Report from patient a short time ago shows that the urine is quite clear although he does not quite empty the bladder. Probably more of the prostatic obstruction should have been removed.

CASE 6.—Man, aged 59, machinist. Complaint, painful and difficult urination. Family history unimportant. Previous to present illness has had no difficulty or frequency. Never any history of renal colic. No hematuria. Had a Neisser infection about thirty years ago. Patient first noticed frequency, difficulty and diminished stream five months ago. Previous to this time was perfectly well. Says he does not know the cause of the frequency. Has had no chill or fever. Six weeks ago had to be catheterized. Has not voided voluntarily since. Never has had any incontinence.

Cystoscopic Examination.—Bladder capacity 300 c.c. Required considerable washing to clear up the solution sufficiently to make an observation. Bladder very much trabeculated; at the right side a little above the ureteral orifice is a small opening which is the entrance to a diverticulum. Collargol injection and roentgenoscopy revealed presence of large diverticulum in the posterior part of the bladder (Fig. 8).

Operation.—Nitrous oxid and novocain. Transverse incision. Fascia dissected up, muscles separated. Bladder exposed and opened. Flexible retractors inside of bladder; small opening in the bottom of the bladder was plainly seen. From this exuded some dark fluid undoubtedly part of the

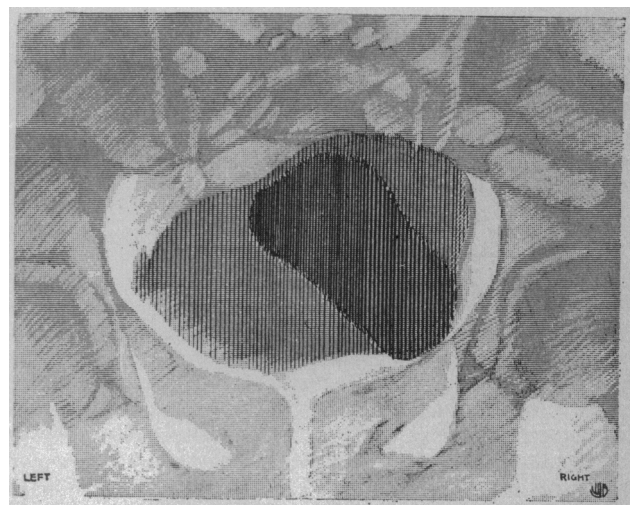


Fig. 8.—Large diverticulum in the posterior part of the bladder (Case 6) as shown by Roentgen ray.

collargol. The opening was packed with narrow strips of gauze, in all about seven yards. The tumor then formed was exposed from the outside of the bladder. It could not be easily brought up. After having exposed the attachment to the bladder it was divided, the bladder pulled aside and with forceps on the neck of the tumor, traction was made on it and by careful dissection it was freed from its surroundings. After the attachment was divided it was found that the right ureter had been involved and had been divided.

Catgut was placed around the ureter after the tumor was removed and it was transplanted into the bladder through the opening from which the diverticulum had been severed. Prostate was quite large and bulged into the bladder cavity. As this was considered to be the cause of the diverticulum, prostatectomy was done. Prostate was easily removed; middle lobe was quite large. The mucous membrane over the cavity from which the prostate had been removed was pressed down with small narrow strips of gauze. Catheter allowed to remain in through the urethra, and the bladder wound left open. Small rubber cigarette drain was placed outside of the bladder in the cavity from which the diverticulum had been removed. This diverticulum was quite large.

Postoperative roentgenoscopy with collargol revealed no evidence of any former tumor. Patient made an uninterrupted recovery and has been entirely well since. Able to empty bladder easily and completely.

CASE 7.—Woman, aged 74. Complaint, frequent and painful urination. Family history is unimportant. Personal history, general health only fairly good. Pneumonia at 68. For years she has had extreme annoyance during urination because of a very painful caruncle of the urethra. This had been removed, and while relieved of most of the annoyance which she previously had, she still had frequency of urination and pus in the urine. She has had autogenous vaccine treatment.

Cystoscopic Examination.—This disclosed a small opening on right side of bladder above ureter. Roentgenoscopy with collargol showed a well-defined diverticulum on right side of bladder.

Operation.—Nitrous oxid and novocain. Transverse incision; fascia divided transversely and dissected free. Muscles separated, bladder exposed and incised. Interior of the bladder exposed with a smooth flexible retractor and the opening of the diverticulum plainly seen. Through this into the diverticulum were inserted narrow strips of gauze sufficient in amount to pack the diverticulum very tightly. Then with fingers inside of the bladder and tip of the index-finger at the entrance of the diverticulum the bladder was pulled aside, the adjoining tissues dissected free and the neck of the diverticulum exposed. Without any difficulty I was able to dissect around this, bringing it up; as it was a well formed semisolid tumor now, it was easily removed from its bladder attachment. The opening in the bladder was closed with No. 00 chromicized catgut, both from within and outside the bladder.

Patient made an uninterrupted recovery and recently reported that she is entirely well. Postoperative collargol picture shows no evidence of former tumor.

1021 Prospect Avenue.

ABSTRACT OF DISCUSSION

DR. MARTIN KROTOSZYNER, San Francisco: The diagnosis of diverticulum of the bladder may occasionally be very difficult, even in the hands of the trained cystoscopist. I recently observed a man of 57 who entered the hospital with a severe pyuria which I at first interpreted to be due to involvement of the so-called middle lobe of the prostate. For two or three weeks it was impossible to obtain a clear picture of the bladder, in spite of repeated cystoscopic sittings, on account of the fact that invariably the almost clear bladder fluid suddenly became cloudy. I suspected the pyuria to be due to a pyonephrotic focus until this suspicion was removed by successful bilateral ureteral catheterization. Finally, after a great deal of laborious work, it was possible to clear up the bladder to such an extent that a large diverticulum could be seen, situated about 1 or 2 cm. below and to the left of the right ureter.

DR. GEORGE SMITH, Boston: Has Dr. Lower had any of these cases which have not shown much residual urine? Has he met any diverticula in which the mouth was so small that the contents would not come out on catheterizing the bladder?

DR. WILLIAM E. LOWER, Cleveland: In reply to the question of Dr. Smith, in only one case was the orifice so small and the muscular contraction about the opening so strong that the contents could not be emptied by catheterization. This is a condition that must be borne in mind, and especially if we depend on the amount of residual urine as a diagnostic factor.

ACUTE PARENCHYMATOUS GLOSSITIS *

VIRGIL LOEB, A.B., M.D., D.D.S.

ST. LOUIS

The basis of this paper is a case of acute parenchymatous glossitis which I reported superficially in a paper entitled "Unusual Cases in Oral Surgery," read before the St. Louis Dental Society during May, 1911.

In connection with the detailed report of the case which I now propose to give, I desire to enter into a brief discussion of the disease and the literature relating to it. Butlin, in his book on "Diseases of the Tongue" says:

Acute inflammation of the tongue is admitted by all observers to be a rare disease. Even the largest hospitals in this country [England] do not, in most years, record a single instance. Yet the history of the disease may be written with tolerable accuracy, for the very rarity of acute glossitis has led to the publication of a goodly number of cases in medical literature.

From the reports of cases which I have been able to review, acute parenchymatous glossitis has been spoken of as acute glossitis, idiopathic glossitis, phlegmonous glossitis, deep glossitis and interstitial glossitis.

Baldwin¹ describes a case which he had observed, under the title "Interstitial Glossitis," and Wagner² reports a case using the term "Idiopathic Glossitis." Saenz³ and Dupérier⁴ each speak of the disease as *Glossité profonde* rather than as *Glossité parenchymateuse*.

The disease is noticed most often during the winter months and attacks males more frequently than females. It occurs chiefly between the ages of 20 and 40, though Bennett,⁵ in reporting a study of the literature from 1816 to 1906, states that cases have been reported at 9 months and 80 years of age.

Among the etiologic factors relating to acute parenchymatous glossitis, exposure to cold and dampness together with a lowered general resistance seem to be the most potent. Infectious diseases also play an important rôle. Weis⁶ described a case which followed the desquamation of scarlet fever. Sabrazes, Bonnes and Parsat⁷ report a case in a man whose children had had scarlatina just previous to his illness and they thought the patient may have had a scarlatinal throat. No specific germ has been isolated, though streptococci and staphylococci have been found.

Predisposing causes are injuries to the tongue from carious teeth, faulty dental work, tooth-picks, splin-

* Read before the Section on Stomatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

1. Baldwin: Cincinnati Med. Jour., 1896, ii, 143.

2. Wagner: Med. Rec. New York, 1893, xlv, 523.

3. Saenz: Contribution à l'étude de la glossite profonde aiguë, Montpellier, 1906.

4. Dupérier: Thèse de Paris, 1906-07.

5. Bennett: Washington Med. Ann., 1906-07, v, 267.

6. Weis: Loire méd., 1908, xxvii, 366.

7. Sabrazes, Bonnes and Parsat: Presse méd., 1906, xiv, 303.