Among ourselves appointments should be as sacred as any other obligation. It costs nothing to be courteous and gentlemanly. A genuine grasp of the hand and a word of encouragement to the fellow at the foot of the ladder is a great help, while a grouchy sideglance or "howdy" becomes more or less contagious.

What I have presented is from observations in the past thirty years of practice, and I trust my colleagues will take them in the same friendly spirit in which they are presented.

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VESICAL CALCULI IN CHILDREN

WITH REPORT OF A CASE

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While the literature of stone in the bladder is voluminous and complete, the etiology, the age of the child and the method of removal, with the results attained, we think justify the report of our case.

Florence B., born in May, 1909, was a normal, healthy child in every way until in April, 1912, when three years old, she contracted measles from a sister. She was ill about ten days and at no time was compelled to go to bed. The convalescence was short and recovery was apparently complete, as she played about the house as before. Previous to and during this attack there were no symptoms referable to the urinary organs. Three months following the attack, in July, 1912, when the child was three years and two months old, the mother noticed that occasionally when the urine was voided she sometimes cried a little, but only for a moment, when she was again up and around playing. There was at this time no pain on movement and the mother could not recall that there was any change in the general appearance of the urine, but a frequency of urination was noted. The condition progressed rather rapidly and on Aug. 12, 1912, after being all day at a picnic, the pain was so severe that a physician was called, who prescribed urinary sedatives. The patient grew worse, pain was present with each urination and in October, 1912, there was beginning evidence of pain upon movement. The patient soon learned that by keeping quiet the pain was lessened, so from this time till June, 1914, a period of twenty months, she was sitting or lying down most of the time.

The character of the pain during the early part of the history is indefinite, but from the mother's statements we conclude that prior to the fall of 1913 it was more acute and shorter in duration. In the spring of 1914 the child expressed it as being like a pin prick, but there was also some uneasiness in the bladder all the time. In 1913 she began experiencing some difficulty of urination, it at times being impossible to empty the bladder, at which periods of straining efforts there was some prolapse of the rectum, which always returned spontaneously. Early in the disease she developed an enuresis, and often waked with a cry with each urination.

There was no history of abdominal pain or other symptom that could be attributed to the passage of a renal calculus.

The family history is as follows: Mother, 40 years old and well, has never been under the care of a physician other than during childbirth. Father, 44 years old, has no history of an acute abdominal pain, but has a history of some vague stomach disorder. One sister, 20 years old, is married and well. One brother, 18 years old, is single and well. One sister, 12 years old, had a mastoiditis when 18 months old and measles in 1912. One sister, 9 years old, also had measles in 1912 and scarlet fever in 1914. These two younger sisters are well at present and have no urinary disturbances.

Her paternal grandfather, 84 years old, when 50 years old, passed a renal calculus the size of a pea, which later was voided with the urine. He had had attacks of renal colic for several years preceding. An uncle, her father's brother, 54 years old, passed a renal calculus 22 years ago which was later recovered from the voided urine. A cousin, a woman of 23, had a calculus removed from the right kidney five years ago, and two years ago had the left kidney explored for renal calculus, which was not found. She is still suffering pain referred to the bladder and left kidney. An aunt died of a septic process in the kidney when 30 years old. Another cousin died when 16, after but a few weeks' sickness, which was diagnosed as Bright's disease. The last three are related through the father's family. The mother's family history is negative to any form of lithiasis or grave renal condition.

When I first saw the child, in June, 1914, she was lying down, which position she would maintain throughout the day. Her eyes were red and swollen from crying. Every urination was accompanied with pain, which usually persisted for ten to fifteen minutes after the urine was voided. She was passing urine six to ten times

Vesical calculi have been found in fetal bladders,[2] but the condition seems rare in children under 10 years of age. Kerley[3] has seen but two cases, both in boys aged 5 and 7 respectively. While White and Martin state vesical calculi in children are relatively common, one-

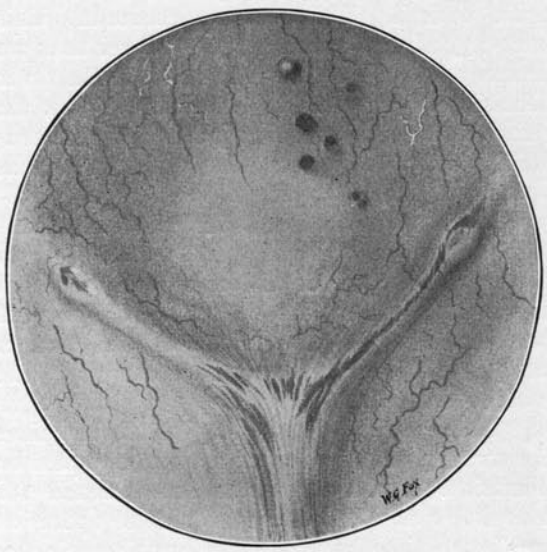

Fig. 2.—Florence B. Cystoscopic findings Jan. 22, 1915.

half of all cases, we are justified in considering the condition rare in girls, as only 5 per cent. of all cases occur in the female.[4]

That individuals in certain families show abnormal tendencies to lithiasis in its various forms is established. Whether this be an inherited phenomenon or the result of a peculiar diet is undecided, but in so far as I could learn there are and have been no unusual features in the diet of our patient's family or their mode of life. We have urinary calculi occurring in four generations of the family, two in males and two in females, with a possible fifth case in a female.

With normal drainage of the bladder a primary vesical calculus is rare, especially in the female, because of the short and distensible urethra. So uniform is this that in every case of stone in the bladder a passed renal calculus or foreign body nucleus must be eliminated.[5] We have no history of any symptoms suggesting a passing renal calculus, and as subsequently shown, there was no foreign body nucleus present.

2. White and Martin: Genito-Urinary and Venereal Diseases.

3. Kerley, C. G.: The Treatment of the Diseases of Children.

4. Von Bergman and Bull: System of Practical Surgery; Benoist, Marcel: Cystinuria and Cystinous Lithiasis, American Journal of Urology, February, 1915. The author reports a case of vesical calculus, the result of the passage of a renal cystin calculus, in a female child 3 years of age.

5. Keyes: Diseases of the Genito-Urinary Organs.

The urinary salts in solution are crystallized by a mucinous body in the urine, which substance, if normal in amount, will result in mature crystal formation; while if in excess, an immature form of the crystal will result, with an abnormal tendency to clumping. Inflammation increases this mucinous body,[6] which degree of increase may depend upon the particular type of infection present.[7] The late Dr. Dunning laid especial emphasis upon an associated eruption of the bladder mucous membrane in a patient suffering with measles. While I can get no history of a cystitis during our patient's attack of measles, subsequent events, we think, warrant our concluding that it did exist and was the exciting factor in the formation of the bladder stone.

The roentgenogram shows the calculus to be single and regular of contour. It was from 1.4 to 1.5 inches in diameter. This was determined by the distance between the jaws of the lithotrite when the calculus was first grasped and by comparative measurements between similar points on the patient's body and on the roentgenogram. The weight of the calculus was estimated at about 18 grams. It was composed of ammonio-magnesium and calcium phosphate

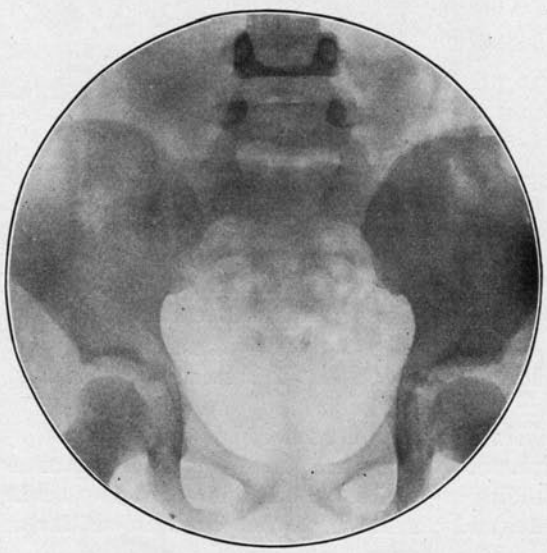

Fig. 3.—Florence B. Roentgenogram taken Feb. 7, 1915. Negative to vesical calculus.

salts, the former predominating. The calculus was soft, as the Roentgen ray seemed to suggest, yet the hardness of a body cannot be accurately estimated by this means.

6. Adami: Principles of Pathology.

7. Wright, A. E.: Vaccine Therapy, Lancet, London, Sept. 17, 1910; Rosenow, E. C.: Observations on Cholelithiasis may prove applicable to urinary lithiasis.

each night, awaking with a cry at each voiding. Urination was more frequent during the day. She had to be carried about the room as the least motion caused pain. She was poorly nourished, weighing but 33 pounds. Her appetite was poor, her bowels regular. She had had temperature as high as 99.5, and there was no history of chills. While palpation was unsatisfactory, because of fear on the part of the patient, there was slight rigidity over the upper right abdomen and pressure over the bladder produced pain. A specimen of urine voided during the examination was slightly alkaline, contained 200 to 250 pus cells to the ⅛ objective, with 20 to 30 red blood cells to the same field. Albumin was 1.25 per cent. with urea only 0.7 per cent. There were very many triple phosphate crystals, much mucus, but no casts.

Fig. 1.—Florence B. Referred from Dr. Bowell's service June, 1914. Vesical calculus.

A mixed infection was present, colon bacilli and staphylococci being most numerous.

The roentgenogram immediately taken showed a shadow due to a calculus in the bladder (Fig. 1).

Having thus determined our diagnosis, we at once placed the patient upon a treatment tending to encourage elimination, and to acidulate and antisepticize the urine in so far as possible. In the presence of a probable infection of the right kidney and the septic condition of the patient, we considered this preoperative treatment indicated.

On Oct. 13, 1914, a litholapaxy was done, the calculus being crushed and evacuated as thoroughly as possible in one hour and thirty minutes, the arbitrary time limit we had decided as safe for the first crushing. About ten grams of crushed stone was removed at this time. The patient was placed in bed with hot abdominal compresses and left the hospital on the third day. We then again instituted our eliminative and antiseptic treatment, studying the urine closely. She was absolutely free from pain, running about the house at will, until Nov. 20, 1914, when slight pain upon urination was again noticed. This was not constant. This interval between operations was longer than we desired, but a sister contracted scarlet fever necessitating the delay. On Dec. 2, 1914, the remaining fragments were crushed and evacuated. Cystoscopy immediately following the operation demonstrated a very highly congested, inflamed bladder, with particles of calcareous material clinging to the walls. Many of these could not be dislodged with the beak of the cystoscope. The patient left the hospital on Dec. 6, 1914. Irrigations of the bladder were added to the previous treatment. The patient has gained eleven pounds, now weighing, Feb. 1, 1915, 44 pounds. At no time since the second operation has there been any pain on urination. Nocturnal urination persisted for only a few days following the second operation and at no time have we had any incontinence of urine. Cystoscopic examination on Jan. 15, 1915, demonstrated a congested trigone, a normal left ureteral meatus, with a somewhat distorted, hyperemic and edematous right ureteral meatus. No foreign bodies were found in the bladder. On Jan. 22, 1915, a second cystoscopy was performed with the same results, excepting that located upon the left posterior upper quadrant of the bladder there were found several papillary-like bodies seemingly lying just beneath the mucous membrane. These were whiter than the surrounding bladder wall (Fig. 2). A roentgenogram taken Feb. 1, 1915, was negative to calculus of the bladder or kidneys. A third cystoscopy and a second roentgenogram of the kidney and bladder, Feb. 7, 1915, were likewise negative to calculi (Fig. 3). The urine still contains, Feb. 7, 1915, 30 to 50 pus cells to the ⅛ objective. There is no blood. Casts are negative. There is a faint trace of albumin. There are no excess of crystals.[1] From these cystoscopic findings we conclude the pus is coming from an infected right pelvis, possibly some of it being of bladder origin, and that from the cystoscopic and roentgenographic findings that the calculus has been completely removed.

1. On April 1, 1915, a catheterized specimen of urine contained one to five pus cells to the ⅛ objective, with blood negative. There was no albumin. The child weighed 52 pounds, a gain of 19 pounds since the first operation. The cystoscopic findings showed but a slight hyperemia of the right ureteral meatus. The papillary-like bodies were still present.

The symptoms of a vesical calculus in a child vary from those in a like condition in the adult only because of the small size of the bladder. Enuresis is a common symptom and when of the character as in our case, the patient awakening with a cry at each urination, is characteristic of the condition. As the stone grows larger pain may continue several minutes after urination. For the same reason (the relatively large size of the stone and small size of the bladder) sudden stopping of the flow of urine during urination is more common in children. The straining thus excited in trying to empty the bladder may produce a prolapse of the rectum with a possible involuntary evacuation of the bowel. Because of the same disproportion in the size of the stone and that of the bladder, hemorrhage is not so common in the child.[8] Our patient had never had hemorrhage sufficient to attract the mother's attention. The pain produced by motion is very characteristic and was present at all times during our patient's illness after the first few months.

The diagnosis was possible from the history and urinary findings of our case when I first saw her. Earlier in the disease, when the symptomatology was less complete, other data might have been necessary. Here the Roentgen ray is the easiest and simplest diagnostic measure attainable, and is usually quite reliable, but when the symptoms justify, though the Roentgen ray be negative, cystoscopy should always be the final method of diagnosis.[9]

In renal or bladder calculi, so long as an infection persists, the stones are prone to reform.[10] While in our case the bladder is free from any calcareous material, because of the infection of the right ureteral pelvis, the probability of recurrence must be remembered, especially with a family history such as our patient has.

Figure 2 shows the appearance of the bladder on Feb. 10, 1915. Diagnosis of a right-sided involvement can be made from meatoscopy,[11] hence we do not consider ureteral catheterization indicated or justified at this time. The papillary prominences are in the upper posterior quadrant of the bladder,[12] which was the principal field of instrumentation during the crushing.

Indications for and against the various operations for removal of vesical calculi must be duly weighed in each individual case. In ours the following led us to choose litholapaxy:

1. The size of the stone (1.5 inches in diameter) was not prohibitive, and we felt justified in considering it of phosphatic composition, hence of but moderate density at most, and the roentgenogram showed a uniformity of density.

2. The child's bladder stands the insults of instrumentation remarkably well. Fig. 2 verifies this.

3. When the bladder capacity equals 75 c.c. litholapaxy can be performed.[13]

4. The dilatability of the female urethra would accommodate a medium-sized instrument without lasting harm. Our patient has had no incontinence.

5. While in severe kidney involvement a suprapubic operation is indicated, the absence of tube casts in the urine of our case assured us that any parenchymatous involvement of the kidney was but slight.

6. Cystitis was severe in our case, but we decided that if the calculus be completely removed, the bladder inflammation could be cured by systematic irrigations. Fig. 2 vindicates this assumption.

7. The immediate mortality following suprapubic operation does not compare favorably with that of litholapaxy. Statistics vary with a suprapubic mortality of from five to twelve times as great.

8. Recurrence seems to be as frequent after cutting operations as litholapaxy.

9. Postoperative irrigations of the bladder are accompanied by less discomfort to the patient when no cutting operation is performed. Our 5½ year old patient never resisted these treatments.

10. Immediate convalescence from the operation is but a matter of a few hours when the crushing operation is performed, while in a suprapubic operation in the presence of infection it is of much longer duration.

11. Litholapaxy is much simpler in a female child, and postoperative impaction of any remaining calculus material more remote, because of the shortness of the urethra.

12. Litholapaxy overcomes the mother's dread of a cutting operation in her child.

13. Should the calculus recur, a second or third removal is not influenced by any previous instrumentation. This fact can be taken advantage of in removing a calculus, as in our case, where but a part of the stone was crushed at the first operation.

8. American Text-Book of Surgery.

9. Beer, Edwin: The Relative Values of the Roentgen Ray and the Cystoscope in the Diagnosis of Vesical Calculi, Jour. Am. Med. Assn., Oct. 11, 1913.

10. Eisendrath, D. N.: Clinical Aspects of Renal Infection, Interstate Med. Jour., July, 1914.

11. Pilcher: Practical Cystoscopy.

12. Lewis and Marks: Cystoscopy and Ureteroscopy.

13. Ransahoff: Keene's Surgery.

14. In litholapaxy instrumental difficulties incident to the crushing may demand an immediate suprapubic interference. At every crushing operation one should be prepared for this complication.

With these facts before us, namely, that the crushing operation is well borne by the child, does no lasting injury to the parts, is quickly recovered from, and has a remarkably low mortality, we considered litholapaxy the operation of choice in our case of primary vesical calculus in a female child 5 years and 5 months old.

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AN INTERESTING KIDNEY CASE

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I want to report this case because of its severity and the successful recovery following. Young man, 30 years of age, had symptoms of stone in the left kidney for two or three years. In July, 1914, nephritic colic followed by fever and series of chills which lasted six weeks, at which time he entered the hospital. He is now very much emaciated, pulse feeble and rapid but is perfectly free from pain. The urine shows albumin, slight amount of blood and pus. The Roentgen-ray picture shows a stone in the left kidney; incision was made in the lumbar region, kidney opened, finding there was a general pyonephrosis and so much destroyed that the saving of the kidney was out of the question, so it was removed with the greater part of the ureter. This boy made an uneventful recovery and was up in three weeks; in the fourth week colic occurred in the right side with chill and fever and complete anuria. The pain ceased after twelve hours and it seemed as though the stone might have passed on into the bladder. A Roentgen-ray picture was made on the second day and no stone was in the kidney nor in the ureter but the plate did not show the entire pelvis. Patient from this time on was perfectly comfortable but became uremic, temperature high and pulse rapid; as death was imminent an operation was attempted to explore the kidney. Palpation through the incision revealed apparently a normal flat kidney there being no hydronephrosis. The incision was extended downward and just about an inch and a half above the bladder a stone was impacted in the ureter. This was removed and sutured with linen. The patient's pulse had been above 150 and temperature 104 with decided uremia when the operation was begun, therefore, a speedy operation was very important. The entire work was done in less than twenty-five minutes.

The interesting feature in this case is that this operation was done on the fourth day after the ureter became blocked and there was not a drop of urine about the kidney or ureter but as soon as the stone was removed, excretion of urine came on.

The patient made a perfect recovery and his health was perfect up until August, 1915, when colic recurred and he passed a urethral stone on the second day. This stone encircled a linen suture which had been placed in the ureter. Since the passing of that stone he appears to be well again and the urine is entirely normal.

This criticism might be made in the management of this case, that in the second attack of colic, the stone in the ureter was thought to have passed on into the bladder, and the Roentgen-ray picture taking the bladder and the lower part of the ureter separately should have been made and in that instance should have shown the stone impacted just above the bladder, which would have given a more thorough indication for the operation which was done, however, the results would not have been any better.

AMERICANS are said to be the greatest meat eaters in the world. The average American feels that he must have meat at least twice a day, and not a few of them are dissatisfied if they do not have some form of meat at every meal. That this excessive meat consumption is injurious to a great many people, and especially those living sedentary lives, is attested by the clinicians who are called upon to treat disturbances in nutrition and metabolism. That a heavy meat diet is not necessary is amply demonstrated by the experience of the Japanese soldiers in the war between Russia and Japan, and is being demonstrated at the present time in the European war where the soldiers have been forced to accept a diet that is almost wholly vegetarian, and the testimony of those who are familiar with conditions seems to indicate that the soldiers are much better off on the vegetable diet than they were when they obtained a liberal supply of animal food. May we not learn a lesson from the experiences of the European soldiers which were brought about by force of necessity?