

in view, and I tie it in two places and divide it between the ligatures. By working under the sterno-mastoid muscle I gradually separate the tumor, tying all vessels that bleed. As you see, the carotid artery and the internal jugular vein are exposed. Having removed the growth, a drainage-tube is introduced, and the wound is closed and dressed in the usual manner.

### A CASE OF SUPRA-PUBIC LITHOTOMY.

CLINICAL LECTURE DELIVERED AT THE UNIVERSITY COLLEGE HOSPITAL, LONDON.

BY MR. CHRISTOPHER HEATH,

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GENTLEMEN,—You saw me last Wednesday open a patient's bladder above the pubes and extract a stone, which is here in a box. You will remember I said at the time that the reason I preferred to open the bladder was because I knew that it was a phosphatic stone in an elderly patient with a diseased condition of that viscus, and I thought therefore it would be better to open the bladder and to extract the calculus above the pubes than to attempt to crush the stone and wash the fragments out, which I no doubt could easily have done. When I had opened the bladder I found what I had not expected,—that there were several fragments of an old calculus; and it appears that this patient had been in another hospital a year ago. He was put under ether there, but it is not clear what was done to him. I think there can be no doubt, however, that a lithotrite was passed and a small stone broken up; but it is quite evident that those fragments were never removed, and that they have been in the patient's bladder for the last year or more, and have set up a considerable amount of irritation there, with chronic cystitis, and it was for that reason that he applied to the hospital. He came here with no knowledge that he had a stone in the bladder, but with the ordinary history of old people with chronic cystitis,—viz., that he had very offensive alkaline urine, which he had to pass frequently; and he came in order that he might be submitted to the treatment which had done him good before,—viz., having his bladder washed out. I passed an instrument for him when he first came, and drew off a considerable quantity of highly ammoniacal, offensive urine. That urine was very turbid, contained a large quantity of pus, and those who were with me at the time will remember how exceedingly offensive it was; and so I proceeded to treat the patient in the way in which we

ordinarily treat cases of chronic cystitis; that is, I directed that his urine should be drawn off periodically, that his bladder should be washed out once a day, and, finally, that he should be taught to use his own catheter with the view of carrying on the treatment when he went out. But when I saw him a second time I asked him a few more questions, and he spoke rather more of pain than he had done before, and I said, "Well, pain is a symptom rather of stone in the bladder than of cystitis, and I think it would be wise to pass a sound, and see whether there is a stone or not;" because, as you will remember, chronic cystitis is one of the results of stone in the bladder, and patients who have anything like senile enlargement of the prostate are exceedingly likely to have both chronic cystitis and stone, the stone being the result, usually, of the cystitis, but in some cases the cystitis being the result of the stone. I passed a sound and without the least difficulty felt a stone, and I had the opportunity of demonstrating its presence to those who were with me on that occasion, because by holding the handle of the sound while I moved it they were able to feel the instrument impinge upon the stone. There could be no question whatever about it.

Under these circumstances, it was quite clear that we should not be doing justice to the patient by merely treating him for chronic cystitis so long as the cause of the trouble or the presumed cause of it remained; and it became a question what would be the best plan to adopt for the removal of the stone. Now, I was quite sure, from the feel of it, that it was not a very large stone, and I felt also tolerably sure that it was mainly a phosphatic stone. There would therefore have been no mechanical difficulty in introducing a lithotrite of the ordinary form and crushing the stone, or in washing away the fragments afterwards by what is now known as lithotrity at one sitting, or Bigelow's operation, by which we generally succeed in clearing the bladder of all the fragments of the stone at one operation. It is an exceedingly good operation, and I have done it many times now, and I do not think there is a better operation for certain calculi; but then you must bear in mind the particular circumstances of this patient. He is a man of seventy; he has had chronic cystitis for some considerable time, and, as is so common with males who reach the age of seventy, he cannot completely empty his bladder. There is, when he has made water, a certain residuum of urine still in the bladder, which is apt to decompose, to set up irritation, and to become alkaline. This decomposition tends necessarily to the rapid reproduction of a phosphatic stone. Now, the experience of all surgeons in these cases is that, although you may clear the bladder of the actually existing stone, there is such a

tendency to reproduction of phosphatic material that you do not really cure your patient. The tendency to form a calculus continues, and from time to time, at intervals of a few months, probably, the lithotrite has again to be used and the bladder again cleared. Under such circumstances I think it is better, and I followed out the treatment in this case, to clear the bladder absolutely of the stone, to make quite sure that no little bit of any kind is left behind, and also to insure the bladder rest and drainage by doing some cutting operation.

Of course, if you cut open the bladder by any method, the bladder enjoys rest for the time being, and that, after all, is a very important factor in the cure. You know how we endeavor to give rest in all cases where we wish healing to take place. The best example is a fracture. You secure a fracture by splints, and healing takes place in the ordinary natural method. You have a bladder to treat which has been constantly irritated for some months, or even years, by the presence of decomposing urine and even calculous matter; you give that bladder absolute rest for some weeks, and you find that it becomes healthy, and the patient, of course, experiences great relief. Nothing is more trying for a patient than that constant irritability of the bladder and constant straining to make water which you find in these chronic cases, and therefore I think there can be no doubt that it is an immense relief to the patient to have his bladder absolutely at rest, and the water coming away mechanically without any effort on his part, for some few weeks. Well, then, having made up my mind to do some form of lithotomy, the question was, what would be the best method to follow. A few years ago there would have been no question about it, because surgeons were all in the habit of doing some form of perineal lithotomy, either the lateral or the median. The lateral operation perhaps gives more room, but it has dangers of its own, and therefore, where the object is simply to take out a small stone and afterwards to give thorough drainage, median lithotomy, which is an easier operation, perhaps, may be preferred; but within the last ten years or so the operation above the pubes, which you saw me do on Wednesday, has come very much into fashion, and I was very glad to avail myself of it, and, as you saw, I succeeded, without any particular difficulty, in reaching the bladder by this method.

It is curious to look back on the history of this operation. It appears to have been done first by a French surgeon, Peter Franco, in 1541, and, as far as the record of his cases goes, it appears that he first cut a child. He happened to have a boy with a large calculus which made a prominence above the pubes. You will remember that in chil-

dren the bladder is considerably higher than it is in the adult, and therefore in a child's bladder with a large stone there would naturally be a prominence above the pubes. Well, finding that to be the case, and finding, also, that he could not push the stone downward in the bladder so as to make it prominent in the perineum at all, he appears to have cut upon the stone in the median line and to have extracted it without any particular difficulty; and other surgeons followed his example. The well-known Cheselden was a great lithotomist in London, and his portrait may be seen at St. Thomas's Hospital, where he held the special appointment of lithotomist—he was not surgeon—to the hospital, and where he performed several supra-pubic lithotomies in children and adults with very good results. Then, for some reason, he seems to have abandoned this operation, and it almost fell into disuse, while the lateral operation or the median was employed by surgeons generally, although every now and then, in the case of a very large stone, surgeons did venture to do the supra-pubic operation. The objection to doing it on the adult was the danger of wounding the peritoneum. I dare say you know that up to about thirty years ago surgeons had very exaggerated ideas of the danger of opening the peritoneum. To open the peritoneum at all in the case of hernia, for instance, was thought to add considerably to the danger of the operation, and anything like a free incision into the peritoneum, such as we are in the habit of making nowadays for ordinary ovariectomy, or operations of that kind, was never thought of. Well, we know now that with strict cleanliness, and possibly with antiseptic precautions (though I believe cleanliness is really the great point), you can open the peritoneum without any particular risk to the patient. I do not mean that it is a thing to be done rashly or unadvisedly; but still the peritoneum may be opened and the patient recover without any bad symptoms. But there was a danger of opening the peritoneum when the bladder was involved, an extra danger, in this way,—that fluid from the bladder might get into the peritoneum; and you can easily understand that any urine getting into the peritoneum might cause serious trouble for the patient, and particularly urine from a diseased, chronically-inflamed bladder. Alkaline urine, probably swarming with bacteria, would be very detrimental to the peritoneum, and therefore the danger was not an imaginary one, although, of course, we know that the bladder and the peritoneum may be opened at the same time and the patient recover. I will just remind you of a case that occurred here last year; I think it was almost the last operation that the late Mr. Berkeley Hill did in this room, and perhaps you may

remember that he was going to open the bladder to extract a growth and by some mischance the peritoneum was opened too. I remember the circumstance extremely well, because I was present at the time. Well, he recognized the accident, and the peritoneal cavity was well washed out and the tear was carefully stitched up, and that patient made an absolutely good recovery: so that I quote it as an example where a patient has recovered, even with the untoward accident of opening the peritoneum and the bladder at the same time.

What brought the operation of supra-pubic lithotomy into fashion again was the discovery that by putting a bag into the rectum and distending that, as well as the bladder, the bladder could be brought up to the front of the abdominal wall and could almost to a certainty be opened without involving the peritoneum. Now, the credit of that discovery really belongs to Dr. Garson, and I have here Dr. Garson's paper with the illustrations in it, and I would like to point out to you the anatomy of the parts. This paper was first read before the Association of German Surgeons at Berlin, and afterwards published in the *Edinburgh Medical Journal* of 1878, and here is the paper. Now, if you will notice, there is a frozen section of the male pelvis, and you see the urethra leading, of course, into the contracted bladder; behind is the symphysis pubis. On the opposite side you will see the drawing made from the same preparation when the bladder had been moderately distended with fluid and when the rectum had been also considerably distended. And now you will observe what the result is, that whereas in the contracted condition the apex of the bladder is level with the symphysis pubis, here, on the contrary, when the bladder and the rectum are considerably distended, we have the front of the bladder coming into apposition with the abdominal wall, and the reflection of the peritoneum is about a couple of inches farther up, so that the risk of wounding the peritoneum there is exceedingly small, because the distention of the bladder and also the distention of the rectum push the peritoneum well out of its position. That paper at first did not seem to produce any results, but Professor Petersen, of Kiel, in 1880, brought before the same society—the Society of German Surgeons—some cases showing the practical outcome of this suggestion. He showed that by putting an egg-shaped india-rubber ball into the rectum and distending this ball with from ten to fifteen ounces of fluid you could push the bladder forward, and by distending that again with some eight or ten ounces of fluid the peritoneum could be got completely out of the way and the front of the bladder brought underneath the abdominal wall. Petersen's success was so great that

it immediately attracted attention. Sir Henry Thompson had several successful operations, and he devoted a lecture to the subject in this lecture-room some few years ago, and since that date it has become a recognized operation for large stones. Large stones, of course, can thus be got out very much more easily than they could through the perineum, and every one knows that large stones extracted through the perineum are very apt to inflict considerable damage upon the soft parts, and to kill the patient simply by laceration or stretching of the tissues. To return to our patient: I will just say, in passing, that on Wednesday I had a little difficulty, more than I ought to have had, because I had not sufficiently distended the bag in the rectum; I had miscalculated the amount, for, although I put eight ounces of fluid into the bladder, I had not put sufficient into the rectum, and you may remember when I cut through the abdominal wall that the bladder did not present quite as much as it ought to have done, therefore I had to push it up with a catheter before I could make quite sure that I had got it, and then there was no further difficulty.

In cutting through the abdominal wall your incision should go well down on to the pubes and about two inches above it, making altogether a three- or four-inch cut, according to the size of the stone. Then, working strictly in the median line, the surgeon gets at once upon the bladder; and at this part of the operation I avail myself of a suggestion by Sir Henry Thompson, who recommends the use of a blunt instrument. He had a particular instrument made, but I am quite content with this little one, which is an ordinary nail-cleaner, and the sharp point of which I find exceedingly useful for tearing through the tissues down to the coats of the bladder, so as to prevent any of the veins from bleeding. In that way you can make quite sure you are actually on the bladder and push the peritoneum up, and then it is wise either to put a tenaculum through the coats of the bladder, or, as I prefer to do, to put in a couple of stitches, and thus secure the bladder before you open it. If you open it simply by pushing a knife in, the moment the fluid is out of the bladder it sinks a little back into the pelvis and eludes your grasp; and therefore it is safer to put in a couple of stitches and to hold the bladder in that way, as you saw me do, so as to be quite sure to puncture it in the median line and have no difficulty from its slipping back. Having opened the bladder, you pass your finger in; and the finger is, after all, the best judge of what the size of the stone may be. I found, as I expected, that I had only a small stone to deal with, but the moment I touched it it broke up into these fragments, which are really fragments of another stone con-

nected by phosphatic material on the surface. It seems to have been broken up by a previous operation, and then all these fragments became coated with phosphates, and there was a good deal of phosphatic material over the coats of the bladder.

Now, of course there could be no difficulty whatever in extracting so small a stone as this one has proved to be. I first took out the main portion with a small pair of forceps, and then I removed the rest with the ordinary lithotomy scoop. But if it had been a large stone, of course the opening would have had to be made commensurate.

I have brought here this stone also, which I took out of a gentleman's bladder three years ago, in order to show you to what a considerable size these collections may grow. This specimen is perhaps one of the largest that has ever been extracted above the pubes. It weighs between nine and ten ounces, and the extraordinary thing about it is that it projected above the pubes, could be felt there, and must have been there for a long time, and yet the patient, who was under forty years of age, had been suffering from bladder-symptoms all his life. The medical man whom I met, it so happened, had brought this man into the world, as he had attended his mother in her confinement, and he had known the patient all his life. The patient told me that from his earliest days he had had bladder-trouble; and the extraordinary thing is that, up to the time that I saw the patient, nobody seemed to have thought of passing a sound into his bladder. Of course one doesn't like to speak harshly of a brother practitioner, but that patient ought to have been sounded many years before, when the stone was of small size, and I am rather inclined to agree with Sir Henry Thompson when he says in one of his lectures, "A large stone means neglect on *somebody's* part," not necessarily the doctor's, because the doctor may not be consulted; but that a patient should go on with symptoms pointing to stone in his bladder without getting advice means that he lets that stone go on growing until, from a small and comparatively simple matter, it becomes an extremely dangerous thing.

With a small stone like this, as I say, there was no difficulty in extracting it. And then comes the question, What should be done after that? Should I close the bladder, or should I leave it open? Now, you will easily understand, from what I said before, that my object was to get proper drainage for the urine, and I had no intention whatever of closing the bladder; on the contrary, we put in a large tube fitted with a flange, to insure that the urine shall run out for some time, so as to give the patient perfect rest. But I was not content with that, for you will remember that I proceeded to treat the lining mem-

brane of the bladder with a strong solution of nitrate of silver; that I passed this little vulcanite speculum through the wound and introduced through it a wire which has a spiral at the end, so as to enable it to hold a piece of cotton-wool. That cotton-wool was dipped in a solution of nitrate of silver, twenty grains to the ounce; and you will remember that I mopped freely all round the bladder. Now, I ventured to do that because I have had considerable experience in the treatment of chronic cystitis in the female bladder. In former years, when I was connected with the Hospital for Women, I had a good many cases there of chronic cystitis, without stone, following after confinement, or from various other causes. In these cases I found that by dilating the urethra, which is in the female extremely short, so as to admit the small speculum, I was able to mop out the interior of the bladder very easily, and was able thus to change alkaline and offensive into acid and comparatively healthy urine almost immediately. Therefore I adopted the same plan here. I should not have ventured to do it if I had not had a free drain from the bladder, because the complicated male urethra would be apt to be irritated by any treatment of that kind, and it is quite conceivable that if you mopped out the patient's bladder without securing a thorough drain you might have retention from spasm or irritation of the urethra. But, knowing that I had a thorough drain, I was not afraid to pass the speculum and mop the bladder thoroughly, and with this result: the next day when I went round I told the house-surgeon to draw out with a small tube and a syringe a small quantity of the urine from the bladder, and I tested that immediately, and found that it was distinctly acid. Now, I do not think that patient had had acid urine for a considerable number of months, and yet here the very day after the operation the urine was distinctly acid, and it was fairly clear also. I may say that the next day, when we went round, if you remember, on Friday, I had the same experiment repeated before you, and then we found that the acidity had passed off and that the urine was neutral, or slightly alkaline; and it has remained so ever since. You will see when I dip this reddened litmus-paper into the test-tube it becomes slightly blue, for the urine is not acid; it is neutral, or very slightly alkaline. So, at all events, we have gained very considerably there; and now we shall be able to wash the patient's bladder out. I shall employ a weaker solution to wash the bladder out with, and I have no doubt the result will be that we shall get the bladder into a very much more healthy condition before the wound closes. Now, just contrast in your mind's eye the urine now passed with the urine as it was be-

fore the operation. It was stinking, ammoniacal urine, containing a large quantity of pus, having the characteristic appearance of "ropy mucus," and passing with a flop from one vessel to the other when poured out. Now it is limpid urine; there is a little sediment, and if you put the test-paper in you will see that it makes it just a little darker, so that it is as nearly neutral as it can be, and therefore satisfactory, considering that it is now four days since I mopped the bladder out, and that nothing further has as yet been done.

This patient is going on as well as he possibly can for so old a man, and I have no doubt he will make a perfectly good recovery. His future will be that of most old men who have any bladder-trouble at all,—and almost all old men do have bladder-trouble,—viz., he will probably not completely empty his bladder, but he will be able to make water. At the time of the operation I passed my finger well down to the prostate, to see if there were any projecting third lobe, as we call it, at the neck of the bladder. If there had been, I was quite prepared to remove it with a pair of scissors, to do what is now called *prostatectomy*,—i.e., to cut out a portion of the prostate, after the manner of the Leeds surgeons. But when I put my finger down to the neck of the bladder I found that there was no projecting mass of the kind, and there was nothing to warrant any interference. No doubt there is an enlargement of the prostate, but it is not very marked. Under those circumstances the patient will be able to make water satisfactorily up to a certain point, but he probably will never quite empty his bladder, and that is the fact which is so important to bear in mind, that there is a certain amount of urine left after each micturition, which gradually accumulates to three or four ounces. If you allow the patient to go to bed with that three or four ounces,—of course, further secretion of the urine going on,—the bladder soon becomes more or less full, and he then has to get out of bed to empty it. This may recur two or three times in the night, and the patient's rest is very much broken, and you will find that his health suffers accordingly. If, on the contrary, you pass a catheter for him the last thing at night, or teach him to pass one for himself, then the patient empties his bladder absolutely when he goes to bed, and he goes for five or six hours before the accumulation of urine is sufficient to make him wish to empty his bladder, and you secure a very considerable amount of rest for him. That is the thing which we shall teach this patient. He has been already taught once, so it will not be difficult. We shall provide him with a catheter; he will then be able to draw off his urine every night when he goes to bed, and if he is at all a clever person he will be able

to wash his bladder out also, and in that way, starting him with a perfectly healthy bladder, by the rest we shall give it, I hope we will prevent the re-formation of the stone. The question of further treatment here I hope will not arise. If it should, it will be very easy to pass a sound and see if there be any new stone developed, and, if necessary, to deal with it with a lithotrite.

This patient did very well for nearly three weeks after the operation, and then, I am sorry to say, he sank into a condition of collapse and finally died. The fact is, he was worn out by the irritation of this large stone, and I have no doubt that if I could have procured a post-mortem we should have found his kidneys in an exceedingly diseased condition, the result of the prolonged irritation.

### TUMOR OF THE HARD PALATE; ACUTE APPENDICITIS; PERINEPHRITIC ABSCESS.

CLINICAL LECTURE DELIVERED AT THE JEFFERSON MEDICAL COLLEGE HOSPITAL.

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GENTLEMEN,—I have three cases to bring before you to-day, one of appendicitis, another a perinephritic abscess, and the third a tumor which arises from the hard palate. I shall operate on the mouth case first, since it is never wise to operate on infectious cases and afterwards on those which are not, lest the later ones become infected and suppurate.

#### TUMOR OF THE HARD PALATE; REMOVAL; RECOVERY.

CASE I.—This man is twenty-six years of age; his father died of phthisis; his mother is healthy, and he himself has always been healthy until ten years ago, when he noticed a small tumor on the back part of the roof of his mouth. This has gradually increased since, and now he has difficulty in swallowing and talking. When I examine the mouth I find that there is a tumor attached to the roof of the mouth at the junction of the hard and soft palates. It is not connected with the base of the skull, as I have determined by the finger and the laryngoscopic mirror. It is about the size of an egg. There is some bleeding and some discharge.

The trouble in these cases is chiefly the hemorrhage. What I propose to do here will be, first, to split the cheek backward and slightly downward so as not to injure Steno's duct, and, as far as possible, to avoid the branches of the seventh nerve. Then I can lay his head on one side with a pillow under his shoulder, and the blood can escape sideways and tracheotomy will not be necessary. I will then sever the attachments to the soft palate on each side and below, next chisel it loose from the hard palate, seize the mass with a pair of forceps and quickly wrench it loose. I will perform the operation as quickly as pos-