Clinical Lectures

ON

LITHOTOMY.

DELIVERED IN

THE LEEDS GENERAL INFIRMARY.

By SAMUEL SMITH, Esq., Senior Surgeon to the Infirmary.

LECTURE II.

GENTLEMEN,—I had stated, when we parted, that my second and third operations were performed with the curved staff and the common scalpel; and that both these cases were successful. Still I felt that it was not perfectly safe to pass a pointed scalpel along the groove of the staff through the prostate to the bladder. I felt that I wanted a beak, with which I could push firmly against the groove, with the knife held at a certain angle to the staff, and thus reach the bladder in safety.

At that time I read a very excellent work recently published, entitled Barlow's *Essays on Surgery*. The author was an eminent Lancashire surgeon, and part of his book was on lithotomy. From this book I learned the value of the bulbous-ended sound, of the beaked knife, and the more frequent use of the scoop instead of the forceps in the extraction of the stone. The beaked knife, with which he operated with very great success, is represented in this plate; but I shew you also one which was made for me afterwards, with rather greater breadth in the blade. I resolved, then, to use it, because I saw that it was exactly like a common scalpel with a beak, and that it would run in a satisfactory way along the groove of the staff; possessing this advantage over the gorget, that you could make your incision through the prostate at any angle you chose. I resolved to use this knife in future; but, after performing a few operations with it, I thought it would be better still to have common scalpels with beaks and diameters corresponding to the size of the patient and his prostate gland. I therefore got these knives made, which, you will see, are of the common form of the scalpel, but with a beak (or probe-pointed); and I had them of six different sizes. The cutting surface of the smallest which I show you is an inch and a half long, and the blade is five-sixteenths of an inch in diameter; and I had them graduated, each being one-sixteenth of an inch broader than the other, till my largest knife had a cutting surface of two inches and a half in length, and a breadth of ten-sixteenths of an inch. If I had to construct these knives again, I would only have four; and the first should be of exactly the same size as the first I shewed you. I would then increase each size one-eighth of an inch, and a corresponding increase of length; so that the largest, or No. 4, should be eleven-sixteenths of an inch broad, and two inches and a half long in the blade. With four knives of this kind, you might safely perform the operation upon any individual; upon a child two years old with the smallest, and upon an adult with a greatly enlarged prostate with the largest knife; taking care, when the prostate gland has been greatly enlarged and its structure changed (and you ought to take the measure of every prostate gland before you take the knife in hand for operation), that a more free division of it may be necessary. And with this knife that incision may be made as free as possible; for, after the gland is cut to the extent of the diameter of the blade, by the introduction of the forefinger of the left hand, it can be enlarged, on withdrawing the knife, to any extent you like.

After performing several operations with Barlow's knife, I then commenced with my own beaked scalpels. With the common scalpel, with Barlow's knife, and with my own knives, I performed in succession twenty-two operations of lithotomy, not only without a death, but without a single untoward circumstance. That was a success which had never been approached at all in the Leeds Infirmary before, and has never been equalled since. The link in my long chain of successful cases was broken thus.

My twenty-fourth case was William Clapham, 5 years of age, from Knaresborough. He came with distressing symptoms of stone; was sounded by myself and both my colleagues in consultation, all three being under the impression that a stone was felt in the bladder. An operation was decided on, which was performed by me on the 30th of April, 1832. When

the knife had passed through the prostate, along with the rush of urine through the external wound, I noticed floating with it a singular white fleshy substance, about three-fourths of an inch long, and rather thicker than a crow's quill. This escaped with the urine, and fell into the sawdust on the floor. The finger of the left hand being passed through the wound, I could feel no stone. I felt the entire cavity of the bladder, and searched in every direction; still no stone could be found. After a certain time of embarrassment, as you may readily conceive, and the bladder being explored with the female sound by my colleagues as well as by myself, with the same result, the patient was unbound, taken into the Garden Ward, and put to bed. From the moment of the operation he lost his distressing symptoms. The urine flowed freely through the wound; he suffered no more pain, and very little exhaustion. He went on favourably for a few days, when he began gradually to sink, and died on the tenth day. On *post mortem* examination, it was found that there were two small calculi, not larger than a grain of wheat, in the ureter; one of them being within an inch of its entrance into the bladder, and the other midway between it and the kidney. There was also a calculus of the size of a very small flattened olive in the kidney. Here is the kidney, and you can see the cavity in which it was impacted. But what was the substance which floated away with the urine? Here are the bladder and prostate gland, and you will see that the prostate is fringed with several of these substances; and it was the knife which, in passing into the bladder, divided one at its neck, and separated it. This is the only instance in which I have observed such substances; but, in a prize essay on *Lithotomy* by my late friend Mr. John Green Crosse, of the Norwich Hospital, he describes a prostate as being surrounded by such substances, and gives a drawing of the same in his twenty-third plate. The stone which was taken from the kidney was lent by me to the parents, to show at Knaresborough, they promising to return it. I never got it back to this day. Mr. Sagar, surgeon, of this town, whose friends resided in that neighbourhood, applied again and again for it; but they refused to give it up, on the ground that the examination of the body had taken place without their permission. Since that time I have never given up the original stone, but a cast taken in sulphur: you can by this means imitate both the weight, colour, and form, very exactly.

Gentlemen, there was a good deal to be learnt from that operation. I have since always observed this rule, not only to feel but to hear the stone; for, in some examinations, there are symptoms closely imitating the sensations produced by the presence of a stone. The bladder gets into a rugose roughened state; and, when the sound passes over its surface, it gives you something very like the sensation of touching a stone.

In the case I have alluded to, I have a very strong impression that there really was a very small calculus in the bladder, and that it escaped along with the other substance mentioned to you. I think, gentlemen, you ought to allow that to be possible. I will not say that it was so, but I suspect so; and I think so, because, if you introduce a sound into the bladder of a little boy, where there is a calculus no larger than a grain of sand, it can be detected at once, and you cannot exactly tell its magnitude, but you feel and know for certain that it is there. I will give you a case to prove this.

About twenty-five years ago, a little boy, three or four years of age, came from Goole to the Leeds Infirmary, to be operated on for the stone, because it had been ascertained by the surgeons there that there was one in the bladder. I sounded him, and I felt it immediately, and decided on the operation. Two or three days before it was intended to operate, a small calculus came into the urethra, giving considerable distress and difficulty in passing urine. I introduced the small scoop of this director into the urethra, got behind it, and hooked it out of the glans. A day or two afterwards, I sounded the patient again, and immediately found a stone. Two or three days after that, another calculus got into the urethra. This I got behind with the scoop, and succeeded in drawing it as far as the glans, which it would not pass; but, having made a very small incision, I readily drew it away. A few days afterwards, I sounded him again. No stone could be felt. He never had any more symptoms; and, after watching him carefully and sounding him once more, he was sent home cured of all his ailments. One of these stones was not as large as a grain of wheat, the other was a little larger; but they were either of them readily detected at once; and I think it is possible that, in the Knaresborough case, there may have been a calculus of this kind in the bladder, and that it escaped with the first rush of urine. And this appears very probable, when we remember

the two small calculi found in the ureter, one within an inch of the bladder.

Gentlemen, I am not the only lithotomist who has performed the operation without finding a stone in the bladder. There is an eminent surgeon in London who has done this twice in one of the great metropolitan hospitals; and my then senior colleague also did it twice in his career; and I was once very near doing it a second time myself. I had a patient from Halifax, who was sounded in consultation by both my colleagues, and we decided upon the operation. He was put upon the table, and bound hand and foot; but when I introduced the staff, I could not feel anything. I sounded and sounded. I looked my colleagues in the face, and said nothing, but unbound the ligatures, and sent him to bed. He went home to Halifax, where he died under the care of Mr. Jubb. Some years afterwards, when I was visiting a patient in Halifax, with Mr. Jubb, he showed me the wet preparation of this man's kidneys and bladder. The kidney was as large as my head; the bladder was diseased and rugose; and the diameter of the ureter was equal to the thickness of my thumb. I like to confess my sins of this kind; because you may sometimes learn more when a surgeon is candid enough to tell you his errors, than by hearing of his best exploits. I have never operated since that day without bringing away the stone to shew.

We have now arrived at my twenty-fourth operation, and will go back a little, if you please.

No. 3 is worth looking at, as a very beautiful specimen of a mulberry calculus. I may tell you that this boy, when he was operated on, was thirteen years of age. When he was between fifteen and sixteen I saw him; and he was labouring under severe inflammation of the left testicle. I asked myself, Had this anything to do with the operation of lithotomy? Was any part connected with the left testicle wounded? I thought the duct of the vesicula might have been injured, and thus have given rise to the commencement of this inflammation at that period.

No. 4 is only of importance as showing you the very peculiar form of this lithic acid calculus. James Hardy, from Idle, was operated on February 28th, 1826. The operation was performed with Barlow's knife, and this large stone was readily extracted. From its singular form, you will see that it has the appearance of having been originally two separate calculi, which have been joined together by deposit uniting them; but a section proved there was only one nucleus.

Case x is worthy of remark. Joseph Dean, 14 years of age, from Dewsbury, was operated on February 2nd, 1827. This boy, previously to his coming into the Infirmary, had been under Mr. Jonathan Breary, a Quaker surgeon of that place, who had formerly been a pupil of the Infirmary here; and a very clever young man he was. To that patient he had been administering medicine, with the intention of dissolving the stone. I believe it was mephitic water he gave him, which is a solution of potash highly impregnated with carbonic acid gas. The commencement of dissolution had certainly taken place before he came to the Infirmary. He brought with him and showed me those fragments, one of them of good size, which had passed *per urethram*: he had taken them out with the finger and thumb, after they appeared at the glans. These fragments are in paper No. 1. In paper No. 2, I show you considerable fragments, which he parted with in the same way after he came into the Infirmary; and it is worth while to measure some of these fragments. Here is one five-eighths of an inch long and half an inch broad, parted with without any cutting operation whatever; and there are several other fragments nearly as large. One day, February 2nd, 1827, on going round the Infirmary, I found this boy in very great distress, with a distended bladder, and complete retention of urine. We could not pass any instrument beyond the membranous part of the urethra, in consequence of its being filled up with calculi. Mr. Chorley being in the Infirmary at the time, I called him to see the case; and we were both of opinion that the only way to relieve the boy was to cut down upon these calculi, and remove them. He was accordingly taken at once to the operation-room, and bound as for lithotomy. I made an incision into the perineum, in the line of the raphe; and I removed from the membranous part of the urethra these four large fragments, of which one is seven-eighths of an inch, and another eleven-sixteenths of an inch broad. After these were removed, I inserted my finger through the wound into the bladder; and there I found another large stone-quarry. I therefore took a scalpel; and, commencing a little above the lower part of my first incision, completed another in the line of the usual lithotomy incision, passed the beak of my knife into

the bladder, and extracted with the scoop all these fragments. The boy made an excellent recovery, and went home perfectly cured.

Perhaps you may not believe in the possibility of dissolving a stone in the bladder? I do believe it, and will give you a case to prove it. Rather more than thirty years ago, an elderly gentleman near this town, who had retired from business with an independent fortune, expelled *per urethram* these four lithic acid calculi. Some time afterwards, he became affected with distressing symptoms of stone in the bladder, and was conscious that he had one then which he could not expel. These symptoms afterwards became so distressing that I requested permission, and was allowed, to sound him. I immediately detected a stone, and believed it to be, from the sensation communicated by the sound, of the size of an olive. I distinctly felt and heard it. His symptoms afterwards became so urgent that at length he was wishful to have some operation for its removal. It was at the period when lithotomy was first introduced into this country, and was then performed by two surgeons only in England—the Baron Heurteloup and Mr. Costello. I went up to London myself, and was introduced to these two gentlemen, and saw their instruments. Mr. Key was so kind as to order me a set of Charrière in Paris, which I received.

The operation of lithotomy was then performed in a very different manner from that in which it is done at present. It is now a very simple and successful operation; then it was a very complicated piece of mechanism, very difficult to perform, and not so successful as at present. Then the stone was not seized in the bladder by a curved instrument, as now; but it was a straight instrument of steel, with three branches, covered with a silver cannula, which was introduced into the bladder, closed, as you see there, when it was thus introduced into the bladder, by withdrawing the silver cannula a little, the three blades of steel sprang open; the stone was then seized by these three branches; and the canula was pushed forwards again, which closed the blades on the stone, and grasped it firmly. When thus secured, a drill was pushed forwards upon the stone; by turning a little screw, a branch of the point of the drill was pushed out at an angle. When the whole instrument was firmly fixed in a vice, a bow with catgut was put on the pulley, which was worked as a drill. A large cavity was thus drilled in the calculus, which was ground to the finest powder, until the shell of the calculus was little thicker than an eggshell. Thus, by pushing up the cannula forcibly upon the three branches, they were closed upon the thin shell of the calculus, and broke it into fragments. I never got up my courage to perform this difficult and dangerous operation in this manner; although I was the first in this neighbourhood to do it after the two branched curved lithotomy instrument was introduced.

The old gentleman, whose case I am relating, could not place confidence in me to perform the operation, as I admitted that I had never done it. But Mr. Costello passing through Leeds, and calling upon me, we went together to see my patient; and he received a retaining fee. It was agreed that an operation should be performed; and the terms were £300 if done in London, and £500 if in the neighbourhood of Leeds; and there was no stipulation about "no cure no pay". Mr. Costello saw him, injected the bladder with warm water, and sounded him in my presence; and we both at once, without any difficulty, detected a stone, of the size I mentioned, in the bladder. The operation was followed by rigors and a smart attack of fever, which confined the patient to his bed several days, and reduced him considerably. He afterwards visited Harrogate, and there met with Colonel King, the owner of a celebrated race-horse. This gentleman told him there was a schoolmaster in the neighbourhood of Harrogate who compounded a most excellent medicine, a vegetable composition, for dissolving stone in the bladder; and that he knew several persons who had derived very great advantage from it. My patient went to this schoolmaster, got the medicine, and took it freely, with very great relief. He came home with a two-gallon bottle of it; and was accustomed to take a wineglassful several times daily. I saw him, and admitted at once that it had been of immense advantage to him. But, I thought, what can it be? It does not appear like a vegetable substance. I ascertained that the schoolmaster admitted that he could only make a small quantity of it at once. Now, gentlemen, you know if it had been a vegetable composition, he would have got his vegetables together, and made a brewing-vat full; but as he could only make a small quantity of it at once, I concluded from its appearance, that it must be mephitic water. I got a Nooth's apparatus, and made a strong solution of sub-

carbonate of potash, and charged it well with carbonic acid gas, bottled it, took it to my friend, and I said to him: "Take a wineglassful of this, and a wineglassful of your own, and tell me if you can detect any difference?" He could not. "Then," I said, "my conjecture is right; it is mephitic water; you shall have an apparatus, and make it for yourself." I purchased him a glass apparatus, and taught him to brew this "vegetable substance" for himself. I got him a quantity of pounded marble, sulphuric acid, and subcarbonate of potash. He kept the apparatus constantly going, and took it freely for years. He parted with much fine sand in his urine; and, after he had taken it several years, he expelled in January 1835 this lithic acid nucleus; and from that moment he never had any more symptoms of stone in the bladder. Some years afterwards, in consequence of great enlargement of the prostate gland, he was attacked with retention of urine. I passed him the catheter three times daily for some time. I then supplied him with two large elastic gum catheters, with directions to keep the stilette constantly in them, excepting when used, in order that they might retain their proper curve. I taught him to use this instrument for himself, by oiling it well and withdrawing the stilette just previously to its introduction. When I passed the catheter myself, I used the silver instrument; and being aware of his previous condition, I tried, but I never could detect the least appearance of stone. The catheter was introduced repeatedly every day up to the day of his death, which took place in 1843, when he was 83 years of age, after he had lived many years in the state I have described to you. He died during the time when I was abroad for six weeks, taking the long holiday of my life. He had, during my absence, residing in his house with him a retired surgeon, who was a family connection; and after his death a *post mortem* examination took place. There was no stone found in the bladder; and this surgeon was under the impression, because there was none when he died, that there never had been one in it at all.

Transactions of Branches.

SOUTH-MIDLAND BRANCH.

CASES OF STRANGULATED HERNIA, AND OPERATIONS: WITH REMARKS.

By T. HERBERT BARKER, M.D., F.R.C.S., Bedford.

[Read September 30th, 1858.]

THE cases of hernia now about to be recorded, are offered to the attention of the members, from the circumstance that certain peculiarities were presented which have not been noticed in the surgical works of those British writers who may be considered as our best and as our most accessible authorities in surgical science. The exceptional occurrences in these cases are also more worthy of record, from the fact that the exceptions, such as will be described, call forth the application of prompt and determinate treatment.

CASE I. *Strangulated Inguinal Hernia in an Elderly Female; Operation; Peritoneal Coat of Intestine in a state of Sphacelus; Large quantity of Omentum removed by Incision; Recovery.* The first case which I have to mention is one in which the patient was a lady, aged 68. She had for some years been subject to inguinal hernia on the right side, for which she had worn a truss. Occasionally, the hernia had come down to a considerable extent, through a severe cough, to which she was subject; and on two occasions she had found some difficulty in reducing it.

The day before I was called to this patient, the hernia had descended, and she could not return it. The swelling had become tender, and the symptoms of strangulation were strongly presented. I found her labouring under incessant vomiting and hiccup. The vomited matters were not stercoraceous, but what is commonly called bilious, and contained a dirty coffee-ground kind of sediment. The pulse was 90, and feeble; the countenance anxious. On examining the swelling, I found it tender, very tense, and large as a full sized orange. The taxis was applied, but with much gentleness, on account of the tenderness; and a bladder of ice was afterwards placed over the tumour. Finding that no impression was made upon the size of the swelling by these measures, and the symptoms

of strangulation becoming still more urgent, I determined upon operating; and, with the kind assistance of Dr. Witt, at once proceeded.

Dr. Witt saw her for the first time at ten o'clock P.M., and coincided with me that it would not be safe to leave our patient until the morning.

OPERATION AT 11½ P.M. The operation was performed in the usual manner. On opening the hernial sac, a large quantity of omentum presented itself; behind which was observed a large loop of intestine, of dark appearance. The stricture was divided, and the intestine was attempted to be returned. In making the attempt, about two square inches of the peritoneal coat of the intestine was peeled off by the pressure of the finger and thumb. The abraded surface was of a dark colour, and the structure was somewhat softened. Having decided to return the intestine to the abdomen, and to run the risk of having its peristaltic action restored, we carried out the intention without much difficulty. Our attention was then directed to the omentum, which was protruding in considerable quantity. We attempted several times to return it to the cavity of the abdomen, but were foiled in consequence of the mass which had fallen down, and the tension of the abdomen. Having repeatedly failed to return the omentum, we decided upon passing a strong silk ligature around the neck of the projecting substance at the highest point to which we could carry it; one end of the ligature we cut through near to the knot, and there we removed the portion of membrane *en masse*. The loose end of the ligature was brought out at the wound, and carefully secured by a strap of adhesive plaster. The neck of the omental mass formed an admirable plug for the inguinal canal. The edges of the wound were brought together and dressed in the ordinary way.

At nine o'clock on the first day after the operation, I found the patient still vomiting; but the vomit was not stercoraceous. The pulse was 110; the hiccup still troublesome; the abdomen tense and painful on pressure. A dirty looking thin fluid was oozing from the wound. I administered a pill of calomel and opium every three hours, and prescribed a free enema of gruel with castor oil.

At eight o'clock P.M., the report ran that the enema had been retained two hours, when it came away deeply tinged with feculent matter. The bowels were afterwards freely moved three times, and the sickness and hiccup had considerably subsided. The abdomen was still tense and tender; the pulse 114; the skin moist. Wine had been freely administered.

At nine o'clock on the second day, she had not had sickness for the previous four hours, nor had the hiccup returned. The bowels had acted once; the abdomen was still tense and tender; and there was a free escape of thin brown fluid from the wound; the pulse was 112. She had slept two hours during the night.

The pill of calomel and opium was continued, and simple effervescing medicine added.

In the evening, the pulse was 116; the skin moist; the abdomen still tense and tender; the bowels had again acted; but no sickness or hiccup remained. She slept a little during the day; and the pill and medicine were continued.

After this date, she gradually improved. The pills were continued until the gums were slightly tender.

Some years afterwards, I was called to a distance to see this patient, then aged 78, and found her labouring under a slight hernial protrusion at the site of the operation. A truss was adjusted, and nothing more occurred to her to the time of her death, which took place a year or two afterwards.

REMARKS. The omentum removed in this case weighed five ounces and a half. The two circumstances which deserve attention in the case, are—first, the fact of recovery after the existence of so much mischief in the intestinal wall; and, secondly, the removal of so large a portion of protruded omentum.

In this case, while there was undoubtedly incipient disorganisation of the peritoneal covering of the intestine, the muscular and mucous coats were, fortunately, not so much injured as to prevent the restoration of the intestinal action.

With regard to the omental mass, so large was it, and so great was the difficulty of returning it into the abdomen, that we at once decided upon removing it entirely. The vascularity of it indicated the propriety of placing one strong ligature around the root of the mass, in lieu of dividing and securing the vessels one by one. I perceive that this latter plan is recommended by Sir Astley Cooper, in his admirable monograph, *The Anatomy and Surgical Treatment of Abdominal Hernia*. The plan of applying the ligature round the whole