A C A S E
OF
SUPRA-PUBIC LITHOTOMY,
WITH
REMARKS ON THE OPERATION.

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A. F—, æt. 19, an Essex labourer, was sent to the writer at Guy's by Dr. Day, of Harlow, January 21st, 1886, for stone in the bladder. Irritability of the bladder, day and night alike, had been present all his life; symptoms of stone had been well marked for over five years, and for the last twelve months cystitis had been present. A stone was readily felt at the neck of the bladder; so closely did it fit here, and so readily did it return after being pushed away, that considerable elevation of the pelvis was required before a lithotrite could be made use of. Both this and the sound gave evidence of more than one stone.

It was decided to perform lithotomy rather than lithotripsy on account of the multiple calculi, the hardness of

one calculus, and its constant position at the neck of the bladder. As to the size of the stone, this, as appeared later, had been twice correctly gauged as a very moderate one, one and a quarter inches in its long diameter. With regard to this the writer was inclined to think that this was the short diameter owing to the rectal examination giving the impression of a larger stone. Both in this case and in one in which Prof. Humphry performed supra-pubic lithotomy for a stone which actually weighed about $1\frac{1}{2}$ oz., the coats of the bladder, no doubt thickened, somewhat closely embraced the stone, and thus gave an impression that the latter was larger than it really was.

Lithotomy being decided on, the supra-pubic operation was preferred on account of the age of the patient, the fact that the symptoms of calculus had certainly lasted over five years, and perhaps throughout life, that thus it was not improbable that the structure of the kidneys was impaired, and if so, it seemed reasonable to think that an incision made into the anterior surface of a bladder distended with antiseptic fluid and brought safely into reach would be more successful, in the long run, than one into the neck of the bladder, with its complicated surroundings and far more abundant vascular and nervous supply.

January 30th.—The operation was performed on the lines laid down by Sir H. Thompson in his recently published book. The patient being under ether, one of Sir H. Thompson's bags was introduced well coated with eucalyptus and vaseline, pushed quite above the sphincters and then distended with 10 oz. of warm water; 8 oz. of warm carbolic acid, 1 in 100, were then introduced into the bladder, the catheter withdrawn, and a Jaques' india-rubber catheter tied round the penis. The bladder could now be both seen and felt distended for two thirds of the distance between the umbilicus and pubes. An incision, three inches long, was then made in the middle line down to the symphysis. After division of the linea alba and fascia transversalis, an abundant layer of fat with veins bulged up into the lower angle of the

wound ; this being carefully torn through with a director, the anterior surface of the bladder, pink-red and showing clearly detrusor fibres, came into view. The peritoneum was never seen, and could only be very indistinctly felt. A tenaculum being passed into the bladder, and a scalpel introduced at this spot, the left index was inserted and at once felt a stone ; the opening being dilated with the other index finger the stone was removed between them. In this dilatation the bladder was felt to tear readily, but without hæmorrhage. Careful and repeated search, including the parts of the bladder behind the pubes and behind the prostate, failed to detect the other calculi whose existence was suspected. While it appeared at the time that the bladder cavity was immediately under reach, and that every part had been explored, the writer thinks that his failure to detect the two other calculi, which were, after all, present, arose from the bladder being full of the antiseptic fluid. The writer being desirous that, as the bladder emptied itself over the recently cut tissues, the first flow should be of antiseptic fluid, he allowed too little fluid to escape during the exploration. The weight of the two smaller calculi, when in fluid, must have been very slight, and stones so small and so light may have been easily displaced in currents set up in so much fluid, and thus rendered very difficult to find and seize. The only other explanation which occurs to the writer is that 10 oz. of fluid in the rectal bag may not have been sufficient to raise the bladder evenly and completely, and thus some depression or pouch may have been temporarily formed, and not reached by the finger.

No attempt was made to unite the wound in the bladder owing to the previous cystitis and the somewhat prolonged examination ; two deep stitches (carbolicised silk) were placed in the linea alba and two more superficially.

There was never the slightest sign of extravasation or cellulitis, but the healing was retarded by an attack of pneumonia following the operation, and due, in part, to

the ether, and, in part, to the bitter weather of this winter.

On the fourth day the wound and urine were ammoniacal, and this lasted for thirty-six hours, but yielded at once to washing out the bladder with Thompson's fluid.

Two weeks after the operation and when the wound was rapidly granulating up the patient felt as if he was passing water per urethram. It was then found that considerable hæmorrhage had taken place both from urethra and wound. It was venous in character and was readily stopped by the introduction of a small bit of sponge, well powdered with iodoform and steel sulphate, pushed firmly down into the wound. A few hours later, on the removal of the sponge, a small smooth calculus was found in the lower angle of the wound.

Two days later a second but much smaller hæmorrhage took place—yielding at once to ice—and a second small calculus came away.

Three weeks after the operation 5 or 6 oz. of urine were passed naturally, this quantity gradually increasing till the fifth week, when all the urine was passed the right way.

Remarks.—While the above case cannot be considered such a good test of the value of the operation as one in which a larger stone and an older patient are dealt with, it yet presents some features of interest. The immunity from any symptom of cellulitis or extravasation from first to last was absolute; in fact, local inflammatory symptoms were never present; there was a little tenderness the first night around the wound, but this was all.

The ammoniacal condition of the wound on the fourth day was due, in part, to the previous cystitis, and, in part, to the fact that just at this time the patient was suffering from pneumonia; he was dull and apathetic, and when turned on to his side sank as far as possible on to his back again. The way in which this ammoniacal condition yielded at once as soon as the fluid which bears

Sir H. Thompson's name was used, saturated boracic acid solution having been used for thirty-six hours without good result, was very noteworthy.

The hæmorrhage which occurred can in no way be put down to the operation. It was due entirely to the writer having failed to find the two smaller calculi. As these made their way out through tender granulations, still at that time bathed in urine, they easily caused considerable bleeding.

A few of the most important points connected with the operation will now be considered.

The distension of the rectum.—Care should be taken that the bag used for this purpose be of sufficient strength. M. Guyon¹ mentions one case in which the bag being of thin india rubber did not support the bladder sufficiently firmly, and in which the organ, yielding on this account to the pressure of the fingers, was difficult to open. In other words a thin india-rubber bag will raise the bladder but not support it steadily when it is cut down upon.

The bag, well coated with eucalyptus and vaseline, and introduced in a folded state above the sphincters, is slowly distended by means of its tube and a syringe with about 12 oz. of tepid water. Sir H. Thompson gives the amount as "12 or 14 oz."² The writer would advise operators to be content with the smaller amount in most cases, unless the rectum be extremely capacious or it be desirable, in case of a large stone, to give extra elevation and steadiness to the bladder. Even after distension of the bag with 12 oz. thrown in steadily and gently, a little blood-stained mucus followed its withdrawal at the close of the operation. No subsequent trouble followed, but it is evident that in injection of larger amounts some risk is run of damaging the rectal mucous membrane.

Injection of the bladder.—By means of a full-sized, soft catheter, an india-rubber bottle or a good-sized syringe

¹ 'Annales des Maladies des Organes Genito-urinaires,' Tom. i

² M. Guyon, loc. supr. cit., gives 450 to 500 cc., or 15½ oz. to 17½ oz.

8 or 10 oz.¹ of some antiseptic fluid are gently thrown in. By this double distension of rectum and bladder the latter will probably be both seen and felt reaching two thirds of the way between the umbilicus and pubes. The catheter should now be withdrawn from the bladder and a Jaques' india-rubber catheter tied round the penis. If the bladder does not seem to be sufficiently prominent a little more fluid may be thrown into the rectal bag and into the bladder.

The writer would conclude with the following propositions :

1. That supra-pubic lithotomy, as recently modified, has a future of revived usefulness before it, and that while, as an operation, it can never contrast with the rapid brilliancy of the lateral operation, it will be found of great value by those who only have to deal with stone occasionally, and who find themselves face to face with calculi of considerable size in adults.

2. That, to give other and more individual instances, the operation will be found useful in (a) many cases of hard stones of one and a half inches in diameter ; (b) in multiple hard stones ; (c) in cases of calculus not phosphatic, occurring with enlarged prostate ; (d) in some cases of foreign body in the female bladder with abundant calculous deposit (Sir H. Thompson).²

In the rarer cases of (e) a state of urethra which will not admit of the use of a lithotrite ; (f) in a very deep perineum ; (g) in a child with deformed pelvic outlet ; (h) in a patient with ankylosed hip-joint not admitting of his being placed in the usual lateral lithotomy position (Sir H. Thompson).³

3. That at present, till a larger number of cases of the improved operation have been collected, it will be wiser not to attempt to close the bladder with sutures.

¹ M. Guyon, loc. supr. cit. gives 250 to 300 cc., or 8½ oz. to 10½ oz. These amounts given here and in a preceding note for bladder and rectum correspond to those of Dr. Fehleisen (Berlin), 'Arch. für klin. Chir.,' Bd. xxxii, Hft. iii.

² Loc. supr. cit., p. 12.

³ Loc. supr. cit.

4. That in reviving an abandoned operation these two questions call for an answer:

A. Do we stand in a better position towards the operation than did our predecessors?

This question can only be answered in the affirmative after the work done by Dr. Garson, Prof. Petersen, and Sir H. Thompson.

B. On what grounds was the operation abandoned? The chief of these appear to have been: (1) The absence of any means of certainly avoiding the peritoneum. (2) The difficulty of sufficiently and painlessly distending the bladder in pre-anæsthetic days. (3) The absence of anti-septic fluids. (4) The fact that the operation was usually reserved for very large stones, and that it was often performed for such stones after lateral lithotomy had been recently attempted either on the same or the preceding day.

(For report of the discussion on this paper, see 'Proceedings of the Royal Medical and Chirurgical Society,' New Series, vol. ii, p. 94.)