

Two cases of stone in the bladder of the female, treated by rapid urethral dilatation : with remarks on the operation / by Thomas Bryant.

Contributors

Bryant, Thomas, 1828-1914.
Royal College of Surgeons of England

Publication/Creation

London : Printed by J.E. Adlard, 1864.

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TWO CASES
OF
STONE IN THE BLADDER
OF
THE FEMALE,
TREATED BY
RAPID URETHRAL DILATATION;

WITH REMARKS ON THE OPERATION.

BY
THOMAS BRYANT, F.R.C.S.,
ASSISTANT-SURGEON TO GUY'S HOSPITAL.

*[From Volume XLVII of the 'Medico-Chirurgical Transactions,'
published by the Royal Medical and Chirurgical Society of
London.]*

LONDON:
PRINTED BY
J. E. ADLARD, BARTHOLOMEW CLOSE.
1864.

1857

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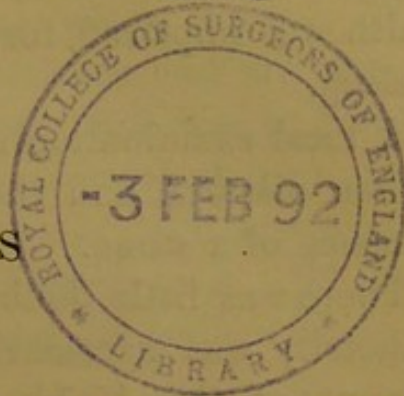
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Received Feb. 8th.—Read April 26th, 1864.

HANNAH C—, æt. 52, a fat but healthy married woman, was admitted, under my care, into Guy's Hospital, on October 23rd, 1862.

For eight months she had been suffering severely from vesical irritation, and for the last three she had been unable to hold her urine.

A few days before her admission she had passed two small calculi, but these had, unfortunately, been thrown away.

When admitted she was suffering intensely from bladder symptoms; she was in constant pain, which at times became much aggravated, particularly by walking or maintaining

the erect posture. She had also complete incontinence of urine, which dribbled away as fast as secreted. Her general health was impaired, for she was worn out by pain and want of sleep.

A local examination at once revealed the true cause of all her distress, and the passage of a sound detected the presence of a stone.

There was little doubt, in this case, what was to be done. Lithotripsy was necessarily excluded from consideration, on account of the highly inflamed and contracted condition of the bladder, and neither vaginal lithotomy nor urethral seemed to me suitable. The removal of the calculus by urethral dilatation was consequently determined on, and on November 19th the operation was performed. Chloroform was administered, and Weiss's dilator introduced into the urethra; with a few rapid revolutions of the screw the parts were readily dilated, so as to admit my finger; the forceps were then introduced, and the stone seized, but little force being needed for its extraction.

The calculus measured one and a quarter by one inch in diameter, and, with the lithotomy forceps, occupied a considerable space.

The operation was followed by immediate and marked relief. The day following she was able to hold her urine for twenty minutes without pain, and in a week she could hold it for many hours. The urine soon became clear and healthy; and, although her convalescence was retarded by a bronchitic attack, she left the hospital on December 7th, three weeks after the operation, quite well.

CASE 2.—Reported by Dr. BEEBY.

Ann C—, æt. 35, a married woman, the mother of seven children, was admitted into Guy's Hospital, under the care of Dr. Oldham and Mr. Bryant, on February 17th, 1864.

She stated that she had always enjoyed good health, and that her first symptoms of illness appeared, fifteen months ago, as pain in the loins. At this time, however, her urine

was natural, and she had no bladder symptoms, for these had only made their appearance during the last six or seven months, and had gradually become much worse. When admitted her general aspect was careworn and anxious, her countenance denoting great suffering. She was in constant pain, and unable to retain her urine for more than a quarter of an hour. The act of passing it was both accompanied and followed by severe straining and great pain. The urine was intensely fetid, containing pus and mucus in abundance, with some blood.

The passage of a sound at once detected the presence of a calculus, but any examination caused her great distress. She was kept in bed for two or three weeks, alkalines being administered, and by March 5th her general and local symptoms had so much improved that Mr. Bryant determined to remove the stone.

The patient was first placed upon her back, and brought completely under the influence of chloroform. Weiss's dilator was then introduced, each arm of which had been previously covered with a piece of india-rubber tubing, and with a few rapid revolutions of the screw the urethra and neck of the bladder were readily dilated. The forceps were then inserted, and the stone seized, but little traction being required for its removal. The stone was caught in one of its narrow diameters, but it measured with the forceps exactly two inches.

It weighed, after removal and washing, 3ij 3ij, and measured five and a quarter by four and a half inches in circumference, and two by one and a half inches in diameter.

It had evidently been resting at the base of the bladder for many weeks, the deposition of the phosphates having only taken place upon its upper surface and circumference.

The operation was attended by the discharge of a little blood, but there was no other point worthy of record beyond the fact that the stone was extracted with great facility, and when passing from the urethra it was rapidly expelled.

The woman passed a good night after the operation, and

the next day she was nearly free from pain; she had recovered the power over her bladder, being able to retain her urine as long as she could before the removal of the stone—a period of fifteen minutes.

On the second day she could hold her water for forty minutes, on the third for two and a half hours, and on the fifth for five hours. The urine also rapidly improved in character. On March 12th, or the sixth day, Mr. Bryant made a careful examination, and found a small slough had separated in the urethra. Into the opening thus made his finger passed, and the neck of the bladder was consequently again dilated. The next day some incontinence of urine reappeared, and it was several days before the patient had recovered control over her bladder.

In one week she could retain her urine for three hours, and on April 5th for five hours; but when walking with a full bladder some little escape took place. Perfect rest was consequently reinforced, and a tonic, in the form of iron, given, the patient, at that time, having full power over her bladder for three or four hours.

Remarks.—The two cases just recorded are good examples of an affection not very common among women; and the complete and rapid recovery after the removal of the stone by urethral dilatation in both instances may well serve as a text to the following remarks, in which I trust to be able to show that the fear of a permanent incontinence of urine—which has been generally associated with the operation of urethral dilatation—is comparatively groundless, and that, within certain limits, the removal of a calculus by *rapid* dilatation is the best and most expeditious practice.

I believe I shall also prove this incontinence of urine to be a common result of urethral lithotomy, and that such an operation should not, therefore, be performed.

Some few remarks on lithotrity in the female will also follow, and the subject of vaginal lithotomy will be touched upon if only to demonstrate the fallacy of the asser-

tion which a great authority is stated to have made—"that it is the only justifiable operation for stone in the female bladder."¹

On the Dilatability of the Female Urethra.

To prove the great dilatability of the female urethra, it is only necessary for us to recall the details of the few cases which have from time to time been published, in which large vesical calculi have been expelled by natural efforts (see Table A, at the end), and from the early numbers of the 'Philosophical Transactions' some interesting examples may be extracted.

Dr. Molyneux relates an instance in which a stone nearly eight by six inches in circumference was passed from a female æt. 60, "by the help of nature alone."

Dr. Beards relates another in which a calculus of nearly the same size was passed by a woman æt. 63; and he adds, "that it came away with a noise which very much surprised the whole company."

Dr. Leprotti quotes a third, in which a woman æt. 50 passed a stone three and a quarter by one and a half inches in circumference, "its escape being preceded by a discharge of three pints of blood."

Mr. Samuel Cooper, in his 'Surgical Dictionary,' related a case, by a Mr. Middleton, in which a stone four ounces in weight was passed in a fit of coughing, after lodging in the urethra one week; and another by M. Colot, in which a calculus the size of a goose's egg was voided in a paroxysm of pain after a fit of retention of urine.

In all of these instances we are made acquainted with the fact that the calculus was passed; but it is not related whether the bladder regained its natural functions in any, or whether a permanent incontinence of urine was the result, although in all it was added that a recovery followed.

¹ 'Lancet,' Jan. 23rd, 1864. Dr. Marion Sims.

In the following examples the history of the cases is more perfect, and therefore more satisfactory.

In the third volume of the 'Guy's Hospital Reports' a case will be found recorded by Sir A. Cooper, in which a young woman æt. 18, after suffering from symptoms of stone for eight years, passed a calculus two and five eighths inches by one and three eighths of an inch in diameter, "with force, after ten minutes' straining," and *no* incontinence of urine followed.

In the 'Lancet' for January 4th, 1851, a second case will be found, by Mr. Forget, in which a stone three inches long was passed by a woman æt. 50, by a "rapid expulsion," without the slightest evil result; and Dr. Beatty relates an example, in the 'Dublin Quarterly Journal' for May, 1863, in which a woman æt. 40 suddenly passed a stone one and a half by one inch in diameter, accompanied with blood, and no incontinence of urine ensued.

From these cases it is clearly evident that the female urethra may be dilated by natural processes to an extreme degree, and that incontinence of urine need not necessarily be the result.

In the next series I purpose to show the effect of an artificial dilatation of the urethra, or rather the results of a practice founded on the facts which the former cases have furnished.

On the removal of a Calculus by Dilatation of the Female Urethra.

It is always a difficult task to fix the time when any new practice was first introduced; but it can be stated, on the authority of Sir A. Cooper, that it was from the success which followed the practice of Mr. Thomas, in the year 1809, that he was led to dilate the female urethra for the removal of a calculus or foreign body.

Mr. Thomas, however, employed the sponge-tent as the dilating medium; and after its application, which was continued at intervals for three days, he succeeded in dilating

the urethra sufficiently to introduce the forceps, and remove an ivory toothpick from the bladder of his patient.

In the year 1822 Sir A. Cooper had occasion to remove a stone from a female bladder; and, guided by the experience which Mr. Thomas's case had afforded, he recognised the practice of dilating the urethra, adding, "It only remains that it should be considered if better means cannot be devised to produce its dilatation than the introduction of sponge-tents into the urethra."

It was at this date, therefore, that Sir A. Cooper first suggested, and Mr. Weiss devised, the well-known urethral dilator which has been since employed.

Sir A. Cooper, in the twelfth volume of the 'Transactions' of this Society, gives the details of four cases in which this instrument was used with marked and complete success, and in *none* of which did any incontinence of urine result, and states his opinion, "that the greatest advantage of the removal by dilatation over other forms of practice is in the preservation of the powers of retention."

Since that period just mentioned upwards of forty years have elapsed, and during this interval many cases of calculus vesicæ in women have passed under treatment; but it can hardly be stated that there are now any definite rules to guide the surgeon in his treatment of these rare but interesting cases; the fear of a permanent incontinence of urine, after nearly every form of operation, so haunting the mind of the practitioner as to leave him undecided which method to adopt.

Some time since I was, therefore, led to collect all the published cases of stone in the female bladder which I could find, with the view of seeing what light *cumulative* evidence would throw upon this subject, for the experience of any individual surgeon on such a point is necessarily very limited; and as the results are of some interest, I have thought them worthy of being brought before your notice.

In the table marked B, at the end of this paper,

there are tabulated twenty-eight cases of vesical calculus, in all of which the stone was successfully removed by urethral dilatation; and in only four was there any subsequent incontinence of urine, or in about one case in seven.

But if we analyse these cases more carefully, it will be seen that in each of the four unsuccessful cases the urethra had been *slowly* dilated, whilst in most of the twenty-four successful cases the dilatation had been *rapid*.

So far, therefore, as the analysis of the cases which have been tabulated goes, the practice of rapid urethral dilatation appears a sound one.

If we examine the cases more in detail, the same conclusion comes out with equal clearness, for it will be seen that, amongst the completely successful cases, it is recorded that Mr. Simon removed a calculus the size of a gherkin from a woman æt. 35 by rapid dilatation.

Mr. Erichsen took away a stone the size of a shilling from a child three and a half years old.

Mr. Howard extracted from a woman æt. 23, a calculus two and a quarter by one and a half inches in *diameter* with complete success; and Dr. Crisp, from a woman æt. 40, a stone nearly as large, with a like result.

Sir A. Cooper removed from an adult two large calculi, without any unfavorable result.

And in the two cases I have to-day brought before your notice the stones were respectively one and a quarter by one inch in diameter, and two by one and a half inches.

In the remaining cases the calculi were all smaller than those to which I have specially alluded, or were foreign bodies of a smaller diameter.

As a conclusion, therefore, it appears tolerably clear—

That the evidence furnished by the cases of artificial dilatation of the urethra well bears out the conclusions drawn from the former cases in which a calculus had been naturally expelled, and that the following practical deductions may be confidently made:

That the female urethra may be dilated to a considerable

extent with perfect safety, and that rapid dilatation is preferable to slow ;

That all small calculi and foreign bodies may be readily removed by this method ; and

That in children calculi one inch in diameter, and in adults two inches, may be safely removed by these means.

The operation.—It seems to be advisable that the operation should be performed upon a patient under the influence of chloroform, for the process of dilatation is thus rendered comparatively easy ; and it should be rapidly performed. In the two cases I have recorded, this practice was followed, and the dilatation was effected with the greatest ease.

In median lithotomy in the male subject rapid and extreme dilatation of the neck of the bladder has been proved to be not only practicable, but unattended with danger ; and, by analogy, therefore, this practice tends to support the one I am now advocating, for most surgeons will admit that elastic tissues recover their tone more readily when rapidly stretched than when subjected to a slow and tedious process of extension.

Weiss's instrument is all that is required for this purpose, although, as originally invented, the edges of the arms, when expanded, are prone to cut the mucous membrane, but, to prevent this taking place in the second case recorded, I adopted the simple expedient of covering each arm with a thin india-rubber coating, this covering fitting into a groove upon the surface of the instrument.

Dilatation by the india-rubber dilator, as employed for obstetrical purposes, or by the modification of Arnott's dilator, as suggested by Mr. Spencer Wells, may also be employed ; but I give the preference to the instrument I have just noticed. The surgeon obtains all he requires by its use, and it is very simple.

On the removal of a Calculus by Urethral Lithotomy.

Under the above heading I propose to include all the forms of lithotomy in which the urethra is incised for the removal of a calculus, whether the incision be made upwards or laterally, or whether it be associated or not with some urethral dilatation.

On referring to the analysis of the cases arranged in Table C, it will be seen that out of twenty examples nine were left with some incontinence of urine, or nearly one half of the cases; and when this proportion is compared with that resulting from the analysis of the cases treated by dilatation alone, the result appears still worse, for in the latter, it will be remembered, there were but four instances out of twenty-eight in which incontinence ensued.

If we look to the cases in detail for some explanation of this difference in the results, none can be found beyond that which belongs to the operation itself, for in only one case was the calculus very large.

As a conclusion, it appears tolerably clear that the operation of incising the urethra is one of danger; for incontinence of urine is a very frequent result of such a practice, and, as a consequence, the practice of removing a calculus by such means is not to be recommended.

On the removal of a Calculus by Lithotomy.

It has been already demonstrated with some certainty that the practice of removing a calculus from the female bladder by urethral dilatation is by no means so dangerous as surgeons have been led to believe, and it has been fairly concluded that it is by such means all calculi of moderate, if not of tolerable, dimensions, should be extracted.

It has also been shown that the operation for the removal of a stone by cutting the urethra and neck of the bladder is one of danger, for incontinence of urine is a very frequent result of such a practice.

When we come to consider the results of the removal of a calculus by lithotomy, we have but poor material from which any conclusions can be drawn; although it must be added that the evidence we possess by no means militates against the practice. (See Table D, p. 167.)

In the three cases by Messrs. Fergusson, Birkett, and Cutler, the operation was a simple one, and in all a good recovery was obtained.

In four instances the urethra was also incised, and in one of these some incontinence of urine was left.

In four others the urethra was at the same time dilated, and in one an incontinence of urine was the result, but in this case the dilatation had been prolonged.

It has been already shown, however, for the removal of moderately large stones, that rapid urethral dilatation is a safe and speedy practice, and, as a consequence, it may be fairly assumed that in such cases the operation of lithotripsy is not required; but in certain others, nevertheless, it is of great value. When the stone is large and the bladder healthy, lithotripsy is, without doubt, the best and most satisfactory operation, the portions of broken stone being subsequently taken away with the lithotomy forceps.

Upon the removal of a Calculus by Vaginal Lithotomy.

It has been reported in one of our periodicals that Dr. Marion Sims, the well-known American surgeon, has expressed a very positive opinion that vaginal lithotomy is the only justifiable operation for the removal of a calculus from the female bladder, and within the last few years several surgeons in this metropolis have revived the practice. Dr. J. H. Aveling, of Sheffield, in an admirable paper which was read before a sister society early last year, has collected from all available sources some very interesting cases in which success was secured by such a practice, but he has failed to prove the truth of the remark made by Dr. Sims.

It is hardly necessary for me to enter more fully into

this subject on the present occasion, for I believe the facts I have brought before you relative to the success which has attended other forms of practice are amply sufficient to prove that vaginal lithotomy is not a necessary operation in the treatment of the majority of cases of stone in the female bladder; although, perhaps, we may endorse the opinion of Dr. Aveling, that, "*when* lithotomy has to be performed in the female, the vaginal method will be the one invariably adopted;" for in cases of very large calculi, in which removal by urethral dilatation is evidently unsuited, and in others, in which lithotrity cannot be performed on account of the condition of the bladder, vaginal lithotomy recommends itself to our consideration.

By way of summary, the following conclusions may be drawn up:

Conclusions.

1. That the female urethra may be dilated to a considerable extent with facility and without danger.

2. That *slow* and tedious dilatation of the urethra by sponge-tents or other means appears to be injurious.

3. That *rapid* urethral dilatation, with the patient under the influence of chloroform, is the safest and more expeditious method of removing all average-sized calculi and foreign bodies from the female bladder; for calculi one inch in diameter in children, and even two inches in adults, have been safely extracted by this practice.

4. That the operation of incising the neck of the bladder and urethra is one of danger, and should be laid aside.

5. That *lithotrity* is a valuable operation in cases in which a stone cannot be safely removed by rapid urethral dilatation, that is, when the stone is large and when the bladder is healthy; and that it is the best practice to remove the broken fragments by the forceps as speedily as possible.

6. That *vaginal lithotomy* is an operation of value when the other modes of operation are inapplicable, but that as a general practice it is not required.

A.—Cases of Stone in the Bladder of the Female.—EXPULSED BY NATURAL EFFORTS.

No.	Reference.	Surgeon.	Patient's		Size of Calculus.	Incontinence or not.
			Name.	Age.		
1	'Guy's Hospital Reports,' 1838.	Sir A. Cooper and Mr. Harris.	M. B.	18	2½ by 1½ of an inch in diameter.	None.
2	'Lancet,' Jan. 4, 1851.	M. Forget.	—	50	3 inches long.	None.
3	'Medical Gazette,' Feb. 7, 1840.	Roberts.	J. J.	56	6½ by 6 inches in circumference.	—
4	Ditto, Aug. 24, 1861.	—	—	5½	1 inch 7 lines by 9 lines in diameter.	Not stated.
5	'Dublin Quarterly,' May, 1863.	Beatty.	E. G.	40	1½ by 1 inch in diameter.	None.
6	'Cooper's Surgical Dictionary.'	Middleton.	—	Adult.	4 ounces in weight.	—
7	Ditto.	M. Collot.	—	Adult.	Size of goose egg.	—
8	'Philosophical Transactions,' vol. xii.	G. Gardin.	—	—	5 by 4 inches in circumference.	—
9	Ditto, vol. xv.	Dr. Wilks.	—	63	5½ by 4½ inches in circumference.	—
10	Ditto, vol. xvii.	Dr. Molyneux.	—	60	7¾ by 5¾ inches in circumference.	—
11	Ditto, vol. xxxiv.	Dr. Beard.	—	63	7½ by 4¾ inches in circumference.	—
12	Ditto, vol. xlii.	Dr. Leprotti.	—	50	3¼ by 1½ inches in circumference.	—
13	Ditto, vol. lv.	Dr. Heberden.	—	67	3¼ by 4¾ inches in circumference.	—

B.—Stone in the Bladder of the Female.—REMOVAL BY DILATATION.

No.	Reference.	Surgeon.	Patient's			Size of Calculus.	Incontinence or not.
			Name.	Age.			
1	'Med.-Chir. Transactions,' vol. iii.	Dr. Yelloly.	J. M.	Adult.	Slow dilatation.	7 $\frac{3}{4}$ by 5 $\frac{1}{2}$ inches in circumference.	Yes.
2	Ditto, vol. viii.	Sir A. Cooper.	P. K.	Adult.	Slow dilatation for 25 hours, by spongetents.	1 by $\frac{3}{4}$ inch in diameter.	Yes.
3	'Lancet,' Aug., 1831.	Foster.	Mrs. B.	45	Dilatation for 4 hours.	3 $\frac{1}{4}$ by 2 $\frac{1}{2}$ inches in circumference.	Yes.
4	Ditto, July, 1832.	Brougham.	E. W.	19	Dilatation for 7 $\frac{1}{2}$ hours.	7 by 6 inches in circumference.	Yes.
5	Ditto, vol. ii, 1855.	Erichsen.	—	3 $\frac{1}{2}$	Dilatation by sponge-tent.	Size of a shilling.	None.
6	Ditto, 1855.	Howard.	—	23	Dilatation for 2 hours.	2 $\frac{1}{4}$ by 1 $\frac{1}{2}$ in. in diameter.	None.
7	Ditto, July 26, 1856.	Crisp.	—	40	Dilatation for 2 $\frac{1}{2}$ hours.	5 $\frac{1}{2}$ by 3 $\frac{1}{4}$ inches in circumference.	None.
8	'Guy's Reports,' vol. viii.	Steel.	—	26	Dilatation for 3 days.	Bone bodkin.	None.
9	'Med.-Chir. Transactions,' vol. xii.	Sir A. Cooper.	M. C.	Adult.	Dilatation for 8 hours.	—	None.
10	Ditto, vol. viii.	Ditto.	E. N.	11	Dilatation for 3 days by sponge-tent.	3 $\frac{1}{2}$ by 3 inches in circumference.	None.
11	Ditto, vol. i.	Thomas.	—	35	Dilatation for 3 days by tent at intervals.	Toothpick.	None.
12	'Cooper's Surgical Dictionary.'	S. Cooper.	—	8	Slow dilatation.	3iss in weight.	None after a few days.
13	'Dublin Journal,' Nov., 1863.	Porter.	—	Adult.	Slow, by sponge-tent for 4 days.	Hairpin.	None.

14	'Lancet,' Nov., 1852.	Simon.	35	Rapid dilatation.	Size of gherkin.	None.
15	Ditto, Oct., 1857.	Hillman.	46	Ditto.	2½ by 1½ inches in circumference.	None.
16	Ditto, ditto.	Ditto.	5½	Ditto.	2 by 1½ inches in circumference.	None.
17	'Med. Times and Gazette,' July, 1859.	Le Gros Clark.	57	Ditto.	2½ inches in circumference.	None.
18	Ditto.	Moore.	30	Ditto.	One ounce in weight.	None.
19	Ditto.	Stanley.	41	Ditto.	Size of damson.	None.
20	Ditto.	Teale.	48	Ditto.	5vj in weight.	None.
21	Ditto.	Cadge.	50	Ditto.	—	None.
22	Ditto, 1850.	G. Gwynne.	8½	Ditto.	5iss in weight.	None.
23	Ditto, 1851.	Davey.	3	Ditto.	5viss in weight.	None.
24	'Med.-Chir. Transactions,' vol. xii.	Sir A. Cooper.	Adult.	Ditto.	Catheter.	None.
25	Ditto.	Chapman.	Adult.	Ditto.	Catheter.	None.
26	Ditto.	Sir A. Cooper.	45	Ditto.	Two large calculi.	None.
27	—	Bryant.	52	Ditto.	1½ by 1 inch in diameter.	None.
28	—	Bryant.	35	Ditto.	2 by 1½ inches in diameter; 5¼ by 4½ inches in circumference.	None.

13 cases of slow dilatation { 4 with incontinence,
9 without.
15 „ rapid „ all without.

C.—Stone in the Bladder of the Female.—REMOVAL AFTER INCISING URETHRA.

No.	Reference.	Surgeon.	Patient's		Incision upwards.	Size of Calculus.	Incontinence or not.
			Name.	Age.			
1	'Lancet,' Sept. 13, 1839.	Chevasse.	Mrs. M.	45	Incision upwards.	Pigeon's egg.	Yes.
2	'Lancet,' June, 1852.	J. Adams.	—	47	Incision.	—	Partial.
3	'Lancet,' 1853.	B. Cooper.	E. R.	6	Incision on left side.	150 grains.	Yes.
4	'Med. Times and Gazette,' July, 1859.	Ditto.	—	10	Incision.	Small.	Yes.
5	Ditto.	King's College.	—	28	Lateral incision.	Pin as nucleus.	Yes.
6	Ditto.	Bristol Infirmary.	—	10	Incision upwards.	Size of walnut.	Yes.
7	Ditto.	Ditto.	—	15	Ditto.	Size of bantam's egg.	Yes.
8	Ditto.	Shaw.	—	30	Lateral incision.	3v in weight.	Yes.
9	Ditto, July, 1859.	Hilton.	—	18	Incision.	Hairpin as nucleus.	Yes.
10	'Lancet,' November, 1852.	Partridge.	J. P.	42	Incision upwards.	2 inches in diameter.	None.
11	Ditto, 1853.	Hawkins.	A. S.	17	Ditto.	Pin as nucleus.	None.
12	Ditto, October, 1857.	Hillman.	—	5	Ditto.	3 by 2½ inches in circumference.	None.
13	'Med. Times and Gazette,' July, 1859.	Hilton.	—	3½	Lateral incision.	Small.	None.
14	Ditto.	Cock.	—	6	Ditto.	Size of damson.	None.
15	Ditto, 1861.	Stubbs.	E. B.	16	Incision upwards.	5v in weight.	None.
16	Ditto, March, 1860.	Stanley.	—	13	Ditto.	Size of pigeon's egg.	None.
17	Ditto, August, 1860.	Atkins.	—	54	Lateral incision.	6 by 4½ inches in circumference.	None.
18	Ditto, May, 1861.	Stubbs.	E. C.	16	Incision upwards.	5v in weight.	None.
19	'Dublin Journal,' vol. xiii.	Steward.	Mrs. G.	50	Incision.	Size of nutmeg.	None.
20	Ditto, vol. xv.	Smyley.	—	76	Incision upwards.	Large oval.	None.
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D.—Stone in the Bladder of the Female.—REMOVAL BY LITHOTRITY.

No.	Reference.	Surgeon.	Patient's		Size of Calculus.	Incontinence or not.	
			Name.	Age.			
1	'Lancet,' 1853.	Cutler. Birkett.	S. T.	30	—	None.	—
2	Unpublished.		C.	12	(Cystine.) $\frac{3}{4}$ of an inch in diameter.	None.	—
3	Ditto.	Ditto.	G.	45	Innumerable calculi.	None.	Prolapsus uteri.
4	Ditto.	Perrochaud, of Boulogne.	—	Adult.	Ditto.	None.	Prolapsus uteri.
5	'Lancet,' 1859.		—	10	—	None.	—
6	'Lancet,' 1852.	Fergusson. Poland.	E. R.	2 $\frac{1}{2}$	—	None.	—
7	Ditto, 1852.	J. Adams. Fergusson.	—	7	—	None.	—
8	Ditto, 1854.		E. C.	21	Two operations. Urethra incised upwards. Ditto.	Yes.	—
9	Ditto, 1861.	Hall.	—	Child.	One operation. Urethra incised laterally. Ditto.	None.	—
10	Ditto, 1852.	Ward.	—	10	Urethra incised upwards. One operation after dilating urethra at intervals for 3 weeks.	Yes.	—
11	Ditto, 1854.	H. Thompson.	C. T.	9	After dilating urethra for 3 hours one day, and for 4 hours on a second day. Lithotripsy, with dilatation.	None.	—
12	'Med. Times and Gazette,' 1859.	Cock.	—	48	$\frac{3}{8}$ of an inch in diameter.	None.	—
13	Ditto.	Humphrey.	—	6	—	None.	—

