

AN  
 INAUGURAL DISSERTATION

ON

*The Lateral Operation of Lithotomy*

SUBMITTED TO THE

PRESIDENT, BOARD OF TRUSTEES, AND MEDICAL FACULTY

OF THE

University of Nashville,

FOR THE DEGREE OF

DOCTOR OF MEDICINE.

BY

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OF

*Kentucky*

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To

Paul. H. Cove M.D.

Professor of Surgery

in the

Medical Department

of the

University of Nashville,

In admiration of the high attainments which have justly placed him in the first rank of his profession, these pages are respectfully inscribed by

The Author

# The Lateral Operation of Lithotomy

Calculous Concretions are much more common in the urinary bladder than in any other organ of the body. Children are particularly prone to them, as are persons far advanced in life; and men are much more frequently affected than women; owing no doubt to the more complicated construction of the urethra, and their more intemperate mode of living.

We shal 1<sup>st</sup> notice a few of the causes. 2<sup>nd</sup> The Symptoms. 3<sup>rd</sup> Diagnosis. 4<sup>th</sup> The Treatment or mode of Lateral Operation.

1<sup>st</sup> Causes - We can come to no definite conclusion as to the true causes of this concretion; since we find that very young children

and even the newly born child is often a subject to the affection. It is contended that hard and impure waters are favourable to the production of this concretion. It is observable that the inhabitants of limestone regions, using the waters of those regions, are more prone to the formation of Calculi than are those who live in sections where this variety of water is not so abundant. Again, injuries received by certain organs of the body, may be enumerated as so many exciting causes of this disease, "Viz." Paralysis of the bladder, Stricture of the Urethra, Enlargement of the Prostate gland; Injuries of the back in the region of the Kidneys; may all prove as so many exciting causes.

2<sup>d</sup> Symptoms - The Symptoms are not uniformly severe, but are liable to remissions and exacerbations. - The desire to pass water is unusually frequent not only frequent but sudden, and irresistible, and with more or less pain. The pain which existed during micturition is aggravated when the bladder is empty; the spasmodic contraction of the middle coat, bringing the morbidly sensitive mucous membrane into direct contact with the Calculus. The pain is referred chiefly to the point of the penis, with a sensation as if something lodged there; and in consequence thereof, the prepuce and end of the gland, are liable to be pinched, and pulled by the patient

involuntarily. This especially takes place in children; and in them it is common to observe the fore finger and thumb pale, and swollen, on their points, as those of the washerwoman. Again in children we may notice their clothing continually wet; also the bed on which they sleep; owing to the incontinence of urine. A desire for micturition is induced, as well as pain by exercise. In the attempt at micturition the water may flow in a full stream at first, and may then stop suddenly; the stone having moved to the posterior orifice of the urethra, and thus temporarily occluded it. By change of posture the stone is dislodged and the flow restored.

The Stone acting constantly as a source of irritation to the lining membrane of the bladder, induces congestion there, Increase and change in the secretion result; Mucous comes in greater quantity, and more viscid than usual. Nature here endeavours to protect the parts, the tenacious mucous adheres to the membrane from which it was secreted, and protecting it to some extent from injurious contact with the calculus. What is redundant is thrown off with urine; and hence a common symptom of Stone is the presence of such mucous in the urine. It may be found by carefully pouring off the urine after it has stood for a time in a vessel.

If a chronic inflammatory process has been set up, in the lining membrane of the bladder, the mucus degenerates still farther, and resembles permanent matter. A variety in suffering and the pain produced, is found to depend very much on the nature of the Calculus. The mulberry, occasions more pain and uneasiness than the smooth or vic. Concretion. The rough and sharp nodules, of the former coming into frequent contact with the irritated membrane causes much pain and uneasiness.

3<sup>d</sup> Diagnosis - In enumerating the symptoms, most of the diagnostic signs have been mentioned. The most ordinary are, frequent,



Sudden; Irresistable; and unreliev'd  
desire to pass water. Pain at the  
point of the penis after the  
bladder is empty; mucous urine,  
occasionally bloody; occasional stop-  
-ping of the flow of urine, and  
restoration of the flow by change  
of posture. These fully warrant  
us in suspecting the existence of  
vesical Calculus, and of adopting  
the necessary means for its allevi-  
-ation. But of themselves, these Sym-  
-ptoms never prove positively the  
existence of Stones. They may be  
very closely simulated, by other  
affections; *viz.*, by organic diseas-  
-es of the Kidneys; Renal Calculus,  
disease of the coats of the Bladder,  
Prostatic affection; and Stricture

of the urethra. The only positive evidence of the existence of stone, is to be obtained by the use of this sound. This instrument should be of steel entire, and about the size of the ordinary catheter. It should be straight, till within some two inches of its extremity when it is smartly curved, so that when introduced the whole of the curvature may be within the bladder; that it may be readily turned in all directions. The bladder should be as much distended by retained urine as the patient can conveniently bear, so as to afford room for the instrument's free play. The patient should be placed recumbent during the process of

the examination, with the sound.  
After introducing the instrument  
carefully, it should be turned in  
the direction of the most dependent  
part of the bladder, where the stone  
is most apt to be found. On  
the instrument coming in con-  
-tact with it a grating sensati-  
-on will be conveyed to the hand  
through the medium of the steel  
sound. If the instrument be  
moved sharply, with a gentle stri-  
-king movement, against the hard  
body, an audible click is heard  
by the contact. Having by sound-  
-ing clearly ascertained the exis-  
-tence of the Calculi the next  
indication that presents is 4<sup>th</sup>  
the Treatment or Lateral Operation.

## Lateral Operation.

This mode of operation as performed by modern Surgeons is by far the most common and successful of the present age. It is necessary that the patient's bowels be cleared prior to the performance of the operation.

The bladder should be moderately full and if the patient has recently emptied it a few ounces of water may be injected.

The patient is now placed on a firm table of proper height and bound securely hand to foot by stout Tapes. He should then be put fully under the influence of Chloroform. A Staff is then passed of as large size as the urethra

will admit, grooved deeply on its convexity, a little to the left side. It is essential that the Stone be felt immediately before the operation is commenced. When the Staff is satisfactorily passed the patient's knees are brought to project a short distance over the edge, or end, of the table, and there he is to be securely held by assistants, one placed on either side by holding the thighs apart, with the knees flexed, and pressing the femurs firmly down into the acetabulum so as to fix the pelvis and also fully expose the perineum. By another assistant the scrotum is to be drawn up; and to him also is entrusted the Staff, which is to be firmly and

securely held against the Pubis,  
thus making as much space as  
possible between the urethra and  
rectum. The Surgeon now taking  
his seat in front at such a hei-  
ght and distance as is best suit-  
ed to his convenience; with all the  
necessary instruments at hand.

The finger or some suitable instru-  
ment should be introduced into the  
rectum, to make sure that it is  
empty, and stimulate it to contract.  
The knife is then passed in, about  
one inch in front of the anus on  
the left side, and carried downward  
beyond the anus, passing midway be-  
tween that orifice and the tuber-  
osity of the ischium through the  
skin, adipose tissue, and superficial  
fascia.

The fore finger is then placed in the wound and directed upwards and onwards for dilating the space by pushing aside the severed parts. we then divide such of the fibers of the Transverse muscle and the levator ani, as are found in the passage onwards. The groove of the Staff, is now sought for and the finger is moved freely, so as to dilate the outward wound sufficiently. In front of the prostate gland, the groove in the Staff is felt, and the point of the knife is to be passed into it, and is then pushed onwards in the groove downwards and backwards so as to divide the portion of the urethra which intervenes between the point of the knife's entrance and the prostate

glands, and also the anterior part of the prostatic portion of the urethra. Sufficient space having been made the finger is introduced and moved freely, which increases the space considerably; the substance of the prostate being very dilatible. By dilatation of such a wound as now described ample space is afforded for the introduction of Forceps, and extraction of ordinary Calculi. During the dilatation of the wound, urine, or water which may have been injected, escapes more or less rapidly, and the stone may descend and be readily felt by the finger. Having now sufficient space the Forceps are introduced by which the stone is grasped and extracted.



If however the Stone is not so readily found, we proceed to search for it by first elevating the handles of the forceps, and depressing their blades to the most dependent portion of the bladder, where it will generally be found without further search; unless it be encysted, or lodged above the Pubis. cases of rare occurrence.

After having found the Stone's situation - by contact of the instrument with it - the blades of the forceps are expanded sufficiently for grasping. In so doing a portion of the bladder may be included along with the Stone. This, we may test by turning the forceps round; freedom of movement implying freedom of the parts.

The finger must be again introduced for the purpose of ascertaining the position of Stone as to whether it has been seized in its transverse or long diameter. If it be not round and has been seized transversely, it will not pass through the opening without violence to the soft structure, if at all. The jaws of the instrument should be slightly relaxed, and with the fingers point the Stone should be gradually shifted, until its long diameter presents to the wound. Extracting force should now be applied. The handles of the instrument being pressed to each other sufficient to prevent slipping of the Stone, and not so hard as to endanger its being broken.

The extracting force should be directed according to the axis of the Pelvis. Too great force should not be exerted for fear of lacerating the parts. After extracting one Stone, we should examine ~~it~~ carefully to see if no more existed. By examining the one extracted we can form a tolerably correct idea as to whether it was solitary, or not. If it be found smooth and hollowed at one or more points, this will indicate to us the existence of one or more, yet behind. On the other hand, if it be found rough and unrudded at all points we may very reasonably conclude that it was solitary. Still we should examine notwithstanding its aspect.

Should the Stone be fractured - by  
the great pressure of the forceps or  
its insufficiency in hardness to with-  
stand the force necessary for its ext-  
raction, - the scoop should be used  
for removing the fragments. The  
Bladder must then be thoroughly  
washed out, in order to remove the  
small particles. This may be done  
by means of an ordinary syringe  
and catheter, the latter passed by  
the urethra and a strong current  
sent through by means of the  
syringe; or by passing a tube throu-  
gh the wound and using the  
syringe. A gumelastic tube is to  
be placed through the wound into  
the bladder of sufficient caliber to  
admit the passage of blood and urine.

Should Hemorrhage ensue, and the bleeding vessel can not be ligated, Compression can be employed, either with the finger or by wrapping the tube with lint or soft linen. The patient is now placed in bed with the head and shoulders elevated so that the blood and urine may pass by the tube as it accumulates.

The knees should be drawn up and placed slightly apart supported under the ham by pillows.

Should the patient complain of much pain, an anodyne may be given; and Hyoscyamus, is preferable to Opium being less likely to interfere with the secretion of urine.

The patient should be watched, for

for a time, in order that he  
may not suffer from Hemorrhage,  
which may ensue. The regimen is  
antiphlogistic for several days. Dilu-  
ents are given freely. The State  
of the bowels should be attended  
to and gentle laxatives given if  
necessary. The tube may be rem-  
oved in three or four days. After  
its withdrawal the wound contracts  
by the ordinary process of healing, and  
once more, all is well.

R. D. Alexander