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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W. T. Berry & Co., Booksellers and Stationers, Nashville, Tenn.
To
Paul. H. Bow 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 shall first notice a few of the causes. 2nd The Symptoms. 3rd Diagnosis. 4th The Treatment or mode of Lateral Operation.

1st Causes. We can come to no definite conclusion as to the true causes of this condition; since we find that very young children
and even the newly born child
is often a subject to this affection.
It is contended that hard and impure
waters are favourable to the production
of this complaint. It is observable
that the inhabitants of limestone
regions, using the waters of those
regions, are more prone to the forma-
tion of calculi than are those
who live in districts where this var-
iosity of water is not so abundant.
Again, injuries received by certain
organs of the body, may be enumer-
ated, as so many exciting causes of
this disease. "Viy." 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.
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 calculi. 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 forefinger and thumb pale, and sodden, on their points, as those of the mushroomman. 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 orifices 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; mucus comes in greater quantity, and more viscid than usual. Nature, her endeavours to protect the parts, the tenacious mucus adheres to the membrane from which it was secreted, and protecting it to some extent from injurious contact with the calculus. What is abundant is thrown off with urine, and hence a common symptom of stone is the presence of such mucus 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 mucous degenerates still further, and resembles pelment matter. A variety in suffering and the pain produced, is found to depend very much on the nature of the Calculus. The calculi, occasions more pain and uneasiness than the smooth mucous Concretion. The rough and sharp nodules of the former coming into frequent contact with the irritated membrane causes much pain and uneasiness.

3\textsuperscript{rd} Diagnosis. In enumerating the symptoms, most of the diagnoses have been mentioned. The most ordinary are, frequent,
Sudden; irresistible; and unrelieved desire to pass water. Pain at the point of the penis after the bladder is empty; mucous urine, occasionally bloody; occasional stopping 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 detection. But of themselves, these symptoms never prove positively the existence of stone. They may be very closely simulated by other affections; viz., by organic disease of the kidneys; renal calculus, disease of the coats of the bladder, prostatic affections; and strictur
of the urethra. The only positive evidence of the existence of stones is to be obtained by the use of the 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 curve 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 instruments free play. The patient should be placed very comfortable 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 contact with it a grating sensa-
tion will be conveyed to the hand through the medium of the steel sound. If the instrument be moved sharply, with a gentle striking movement, against the hard body, an audible click is heard by the contact. Having by sounding clearly ascertained the exis-
tence of the Calculi the next indication that presents is 4 £/.
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 nates are brought to project a short distance over the edge, or end, of the table, and then he is to be securely held by assistants, one placed on either side by closing the thighs apart, with the knees flexed, and pressing the femur firmly down into the acetabulum so as to fit 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 section. The Surgeon now taking his seat in front at such a height and distance as is best suited to his convenience; with all the necessary instruments at hand. The finger or some suitable instrument should be introduced into the section, to make sure that it is empty, and stimulate it to contract. The knife is then pressed in, about one inch in front of the anus on the left side, and carried downward beyond the anus, passing midway between that orifice and the Tuberosity of the ischium through the skin, adipose tissue, and superficial fascia.
The tip of the finger is then placed in
the wound and directed upwards and
outwards for dilating the space by push-
ing aside the second parts. We then
divide such of the fibers of the Trans-
cverse 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;
doing to dilate the outward wound
sufficiently. In front of the pros-
state 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, down-
wards and backwards so as to divide
the portion of the urethra which in-
tervened 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 prostatic being very dilatable. 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, or 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, when 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 stones situates 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 pressed into the stone should be gradually shifted, until its long diameter presents to the mouth. 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, one should examine 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 exist-
ence of one or more, yet behind. On the other hand, if it be found rough and unpolished at all points we may very reasonably conclude that it was solitary. Still one should examine notwithstanding its aspect.
Should the stone be fractured—by the great pressure of the forceps or its insufficiency in hardenp to withstand the force necessary for its extraction, the scoops 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 through 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 cannot 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 bands 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 evacuation of urine.

The patient should be watched, for
for a time in order that he may not suffer from hemorage, which may ensue. The regimen is antilogaistic for several days. Diluents are given freely. The state of the bowels should be attended to and gentle laxatives given if necessary. The tube may be removed 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