TWO CASES OF STONE IN GIRLS: WITH
REMARKS.

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FROM the comparative infrequency of stone among women, it comes about that there is some difference among surgeons as to the best plan of treatment for vesical calculus, and but few generally recognised or settled principles to guide us in our choice of an operation when the patient is a female. If this be true of stone in women, it is even still more so in girls, among whom calculous affections are even less frequently met with. Since the opening of the Children's Hospital in 1852, but three cases of girls with stone in the bladder have come under observation. In all, the disease had, up to the time of admission, remained quite unrecognised; in one case, so long that the child died of her complaint (without operation) three days after admission; and, in another case, long enough to give rise to the suspicion of disease of the spine, and to have secured the patient a bed in a hospital for some months, whence she was discharged unrelieved.

In selecting the method of cure for any particular case, undoubtedly the first and most weighty consideration is the safety of the patient, and next the preservation of the power of retaining urine. Thus, of the different means of cure—viz., lithotripsy, the various modifications of lithotomy, simple dilatation of the urethra, and dilatation combined with incision—there is no plan so generally suited to womanhood as lithotripsy, since by it the stone can be removed with inconsiderable danger to life, and without risk of permanent urinary incontinence. While in all cases the size of the stone must in a great measure determine the plan of operating, the choice of an operation in children is still further restricted by their local peculiarities—namely, the small size of the vagina, the presence of the hymen, the irritability of the urethra and bladder, and by the want of self-control shown by the patient. On these accounts, the operation of lithotripsy is unsuited to girls. Vesico-vaginal lithotomy also cannot well be practised—that is, the extraction of a stone through an incision in the vesico-vaginal septum behind the neck of the bladder; for this would inevitably destroy the hymen; and the small size of the vagina would embarrass the operator in his attempts to close the wound by suture.

Simple dilatation, dilatation combined with incision, and lateral lithotomy* (as performed by Dr. Buchanan), have each their advantages in particular cases, and are the only methods of cure suitable for children.† Though in girls the dilatability of the urethra and neck of the bladder is proportionately greater than in women, it can never be worth while to risk a permanent incontinence by overstretching the sphincter vesicæ; and this is no imaginary danger, since cases are recorded, even in children, where incurable incontinence has resulted from overstretching the neck of the bladder. The incontinence resulting from paralysis of these muscular fibres is too apt to be permanent. On the other hand, incontinence resulting from incision either of the vesico-vaginal septum or of the muscular fibres surrounding the neck of the bladder and urethra, if not recovered from spontaneously, is curable by surgical operation. Mr. Lane has suggested that, in adults, dilatation should not be employed when the stone is larger than an acorn; nor in a child when larger than a horse-bean. In children, the exact size of a stone, and the amount of stretching necessary or justifiable for its extraction, can be determined while the operation is in progress.

For children, dilatation is conveniently carried out during extraction by the blades of the forceps which hold the stone. If a well-shaped pair of forceps be used, very long in the blades, and slender; such an instrument forms an excellent dilator. It will be found that the exit of the stone can be much facilitated by a push from behind, with the point of the forefinger in the rectum. When, also, during extraction, the stone has advanced some distance into the urethra, room may be gained, and the tension relaxed, by removing the forceps altogether, and pushing the stone from behind through the meatus urinarius with the forefinger from the rectum. By the same agency, also, the position of the stone in the blades of the forceps can be altered, if desirable.

During extraction, if the stretching seem too great for the sphincter vesicæ to bear without risk to its integrity, the meatus and neck of the bladder can be divided to the required extent as they lie stretched over

the stone. The tension being sufficiently relaxed, sutures of horsehair or fine wire can very easily be introduced through the divided edges while the stone is *in transitu* and the wound in full view. These may be fastened up when the stone has been extracted. It is almost impossible to introduce sutures after the stone has been extracted, and when the wound has fallen back in the recesses of the child's vagina.

CASE I. *Stone in a Girl aged seven.*—E. McM., aged 7, was admitted into the Children's Hospital, under Mr. Thomas Smith's care, on October 18th, 1865. She had suffered from symptoms of urinary irritation for twelve months; on admission she was pale, haggard, and fretful; she had severe pain on micturition, and almost complete incontinence of urine; there was no blood in the urine. A stone could easily be felt from the rectum, or on introducing a probe through the urinary meatus. The child had for some months previously been treated for disease of the spine, with no relief to the symptoms. On October 21st, the stone was grasped laterally by forceps, which were slid over its surface with some difficulty, as the walls of the bladder closely grasped the calculus, and were at one spot adherent to it. As traction was made upon the stone, it became evident that the external orifice of the vagina was too small to admit of its passage. The fourchette was therefore divided posteriorly towards the anus to some extent. This allowed the lower wall of the bladder to come into view. The vesico-vaginal septum was now divided longitudinally, beginning at the meatus urinarius, for about half-an-inch towards the os uteri. When it was evident that the stone could be extracted without further division of the soft parts, two silver sutures were passed; the one through the divided perineum, and the other through the wound made in the neck of the bladder. This was easily accomplished while the stone was *in transitu*, and while the edges of the two wounds were stretched tightly over the stone so as to be within easy reach of the finger. The extraction of the stone was materially assisted by pressure made from behind on the back of the stone by means of the forefinger in the rectum. During the operation the tension of the soft parts was considerable. The stone was adherent to the bladder at its distal end, and came away as if broken off, and afterwards there was found on the fundus of the bladder a piece of calculous matter very difficult to separate; so soon as the stone had been removed, the sutures were brought together. No symptoms followed the operation, and in a day or two the child began to hold her urine for a few minutes; a week later she could hold it for half-an-hour. A fortnight after the operation she was up and about, and could retain the urine for an hour at a time. The sutures were at this time removed. The wound in the perineum was found to be soundly healed, while that in the bladder was still ununited. Three weeks after the operation she was discharged, being able to retain her urine for three hours at a time during the day. At night the urine escaped involuntarily. Three months afterwards, the child was again admitted, suffering from complete incontinence, the wound in the vesico-vaginal septum was just as when first made. The edges were pared, and two silver sutures, introduced by means of a needle, shaped like a cork-screw, and having an eye near its point; a fortnight afterwards these sutures were withdrawn, and the wound was found closed to the extent that it had been brought together. A month later, the remainder of the wound was closed with three silver sutures, and in a fortnight afterwards the child was discharged, being able to hold her urine naturally by day, but occasionally wetting her bed by night. The stone was somewhat of an hour-glass shape, being pointed at the end which lay against the urethral orifice of the bladder and constricted about its middle; its posterior extremity was rough and broken, where it was adherent to the bladder; it weighed 215 grains, and measured an inch and three-quarters by three-quarters of an inch.

CASE II. *Stone in a Girl aged five.*—Mary Ann B., aged 5, was admitted into the Children's Hospital, under Mr. Thomas Smith's care, on April 22nd, 1865. She had suffered from pain and difficulty in micturition for six months. When passing urine, she kept one finger pressed against the roof of the vagina. A calculus was easily struck by a probe through the urethra, and it could be felt from the rectum. On April 22nd, the stone was extracted by means of forceps through the urethra; the fourchette of the vagina, and the neck of the bladder being divided to the necessary extent during the passage of the stone. The parts being very small, and the stone escaping rather suddenly at last, no attempt was made to close the wound in the bladder; indeed had such an attempt been made, it would have been unsuccessful when once the stone had escaped. The hymen was not injured by the operation. The child in the course of a week recovered complete control over her bladder, and was shortly discharged cured. The stone was composed of uric acid coated with triple phosphate, it was oval in shape, weighed 116 grains, and measured an inch and a-quarter by seven-eighths of an inch.

* See *Lancet*, 1863, vol. i, p. 57, for a description of this operation.

† I have excluded the suprapubic or high operation from consideration, as too dangerous to life.