LARGE CALCULUS OF URETER, REMOVED BY SUPRAPUBIC CYSTOTOMY.*

By RUSHTON PARKER, M.B., B.S., F.R.C.S.,

PROFESSOR OF SURGERY IN THE UNIVERSITY OF LIVERPOOL; SURGEON TO THE LIVERPOOL ROYAL INFIRMARY.

(Photographs by C. R. Woods, Electrician and Photographer to the Hospital. Drawing by Peter Nairn.)

The following case presents several points of medical as well as surgical interest:

B. G., aged 49, a collier, was sent by Dr. Richard Owen, of Brymbo, Wrexham, and admitted into the Liverpool Royal Infirmary on November 4th, 1904, complaining of pain in, and prolapse of, the rectum, with a tumour. He felt the pain in walking; the prolapse he said occurred at stool, and Dr. Owen stated that he felt a tumour on examining the rectum with his finger. The duration of the symptoms had been about six months, and on examination a rounded, hard tumour about the size of a walnut could be distinctly felt with the finger in the rectum. The tumour was movable, but apparently not in the bowel, being felt through the mucous membrane. In consequence of the extreme hardness of the lump, a radiograph of his pelvis was taken on November 7th, and a distinct shadow shown of an oval shape suggestive of a calculus (Fig. 1). On November 9th the bladder was sounded and nothing found there, while the finger in the rectum passed between the sound and the tumour.

No urinary symptoms of any kind had ever been noticed, and in order to exactly localize the supposed calculus, it was determined to commence by abdominal section. This was done by median hypogastric incision on November 10th, 1904, and the opportunity was then taken of feeling the right kidney at its lower end, where nothing unusual was perceived. Low down in the pelvis there was then felt what was clearly a calculus, of the size mentioned, but not in the rectum or bladder. From its position to the right of and behind the bladder, it was considered to be in the right ureter, close to the bladder. It was then decided to approach it through the bladder; so a second incision, transverse and curved with its convexity downwards, was made in the suprapubic region, the attachment of the recti muscles partly divided, and the bladder distended with chinosol solution 1 in 3,000 to push up the peritoneum out of the way. The bladder was opened transversely, and the stone felt close beneath the mucous membrane in the region of the right ureter. To bring it more within reach while cutting upon it, the hand of an assistant was passed into the peritoneum through the vertical abdominal incision, and so behind the calculus. After some difficulty on account of the rough surface of the calculus, the latter was got out by cutting directly upon it.

The upper, vertical, intraperitoneal wound was then carefully closed by separate suture of peritoneum, aponeurosis, and skin, while its dressings were covered with mackintosh cloth and fixed below by a broad piece of strapping. To avoid wetting by urine, if possible, the transverse, suprapubic wound was left open, with a wide glass tube in the bladder, and dressed with pads of wood-wool frequently changed. The upper wound healed quickly by first intention, and its dressings happened not to get wet by the urine-soaked dressings below. The bladder and lower wound were irrigated daily with chinosol solution through the tube. After a fortnight the tube was removed, and a catheter tied in by the urethra, the daily irrigations being continued by this route.

* Read before the South Carnarvon and Merioneth Division, North Wales Branch, Dolgelly.

Two days later the catheter was removed, but passed when required for micturition and irrigation.

On the twenty-third day he first passed urine of his own accord by the proper route, and three days later he was able to do this several times a day. At the end of six and a half weeks he passed all by this route, of his own accord, but could only hold it a couple of hours.

The temperature remained normal for the first fortnight, but rose to 100° F. and 101° F. on several evenings of the third week. At the end of the fourth week—on December 6th—he had a rigor, with a temperature of 102° F.; a similar rise on the 15th, 22nd, and 23rd; also on January 1st, 4th, 5th, 6th, 11th, and 16th the temperature went up to 101° F. or 102° F., and on one occasion—January 11th—it was between 103° F. and 104° F. all day. On all other days the temperature remained normal.

After five and a half weeks he got up for several hours, and afterwards daily, except when feverish.

The stone weighs a little over $\frac{1}{4}$ oz., and measures $1\frac{1}{2}$ by $1\frac{5}{8}$ by 1 in. (3.8 by 3.1 by 2.5 cm.). Its exterior is blackish in colour, presumably due to oxalate of lime, and the surface is sharply serrated, roughened like a rasp in a way that is quite unusual in urinary calculi. The interior is in irregular alternate layers, of urate of ammonia and oxalate of lime, apparently. Both surfaces are shown in the accompanying photograph (Fig. 2).

As regards the operation, after the site of the calculus was made certain by exploring the abdomen, it seemed, in the absence of previous experience, that the easiest and safest route would be that followed. On referring afterwards to the great French treatise on surgery edited by Duplay and Reclus (second edition, 1899, vol. vii, p. 419), it appears that an even larger stone was similarly removed from the ureter by Tuffier, and is figured in that work. That is the only other instance of anything like the size that I have heard of.

A striking peculiarity of the case here related is the nature of the symptoms which led the patient to his medical adviser. The inconvenience suffered

was referred entirely to the rectum, through which viscous the stone was originally felt. There were no urinary symptoms, either noticed as such or traceable in the history, at any time.

Cystoscopic examination on January 19th, 1905, showed a dark recess in the region of the right ureter, evidently indicating the remains of the cut in the bladder wall and orifice of the ureter, through which the stone was removed more than two months before.

A not unimportant question is the probable condition of the kidney on the affected side, and this has been answered in part by a careful "separation of the urines," kindly made by Mr. Robert Bickersteth on February 15th and 22nd, 1905. The result was that no urine whatever came through the right ureter, while the discharge from the left was normal urine emitted in characteristic ejaculations. The quantity was on February 15th 12 c.cm. in sixteen minutes, and on February 22nd 3 c.cm. and 4 c.cm. in two periods of five minutes each.

In the words of Mr. Bickersteth's report: Although "no urine entered the right side of the bladder during the periods of observation, it does not follow that the right kidney never secretes any urine, but it seems likely that

Fig. 1.—Drawing of radiograph, too indistinct for reproduction, owing to blurred shadows.

its functions are seriously impaired." After this examination he went home.

Fig. 2.—Appearance of the stone.

A letter dated May 11th, 1905, was received from the patient, and another from Dr. Owen, saying that his water was right enough and passed without pain, but that he often had pain in his back when walking, so that for days at a time he sometimes could not go out. He had not yet begun work again. One cannot help suspecting stone in the kidney, and hoping for an opportunity of submitting him to x-ray photography to try and settle the point; but he is difficult to induce into hospital again, even for so harmless a purpose.

A Lecture

ON

PULMONARY TUBERCULOSIS IN CHILDREN.

DELIVERED AT THE MEDICAL GRADUATES' COLLEGE AND POLYCLINIC ON APRIL 3RD, 1906.

By J. EDWARD SQUIRE, C.B., M.D.,

PHYSICIAN TO THE MOUNT VERNON CONSUMPTION HOSPITAL;
LECTURER ON MEDICAL ANATOMY AND PHYSICAL DIAGNOSIS
TO THE MEDICAL GRADUATES' COLLEGE.

PULMONARY tuberculosis in children is interesting owing to its frequency, its mode of onset, and the indefinite signs by which in many cases it is accompanied.

FREQUENCY.

Tuberculosis is, of all diseases, the most common and the most fatal in infancy and childhood. In the Registrar-General's returns for 1903 the deaths of children from tuberculosis in its various forms are shown as follows:

0—5 Years.	5—10 Years.	10—15 Years.	Total.
12,172	2,439	2,039	16,650

This, however, does not represent the full extent to which tuberculosis affects children, for some, at least, recover, some linger on till they are over 15, and many children who die of some other complaint (and are therefore not included amongst the tuberculous in the Registrar-General's returns) show evidence of the disease on *post-mortem* examination. The proportion of this latter class is considerable, as is evidenced by the returns of autopsies of the various children's hospitals in Europe and America. Even when we have taken into account all the cases indicated above it would seem that we have not included all the possible cases of tuberculosis in children, for it has been found that in many cases where ordinary pathological examination—macroscopic and microscopic—has afforded no evidence of tuberculosis, inoculation experiments prove

the presence of latent tuberculosis. (Ganghofner,¹ Harbitz.²)

It is, however, to tuberculosis of the lungs that I propose to direct your attention, and the figures I have quoted include tuberculosis of all organs. In infancy tuberculosis, whatever be the seat of the primary infection, tends to become quickly generalized, and tuberculosis in the lung, even if this organ is the primary seat of the disease, is almost always associated with tuberculosis of other organs—a part only of a generalized tuberculosis. When tuberculosis attacks a young child, the lungs are almost always affected sooner or later. This is well shown in the records of autopsies. Of 72 cases of tuberculosis in the first two years of life, Holt³ found the lungs were involved in all; and in 119 autopsies on tuberculous children of various ages, 66 per cent. being 2 years old or less, the same observer found the lungs affected in 99 per cent. In the reports of the Children's Hospital at Pendlebury, Manchester, for 1885 and 1886,⁴ out of 54 fatal cases of tuberculosis in children from 9 months to 13 years of age, 52 had the lungs affected, giving a percentage of 96. With older children the proportion becomes somewhat smaller. In Still's⁵ 269 cases of tuberculosis in children under 12 years of age the lungs were affected in 210, or 78 per cent.

It is said (Holt) that during the first two years of life tuberculosis, with great uniformity, involves first the bronchial lymphatic glands and the lungs; generally it is the lung mischief which kills, though not infrequently it is meningitis.

Beginning with the third year, tuberculosis of bones, cervical glands, peritoneum, and intestines becomes more frequent, though the lungs are usually involved as well. In these young children the lung mischief is, as a rule, widely diffused and not, as so generally occurs in adults, localized to one portion of the lung.

After the sixth or seventh year—the period of the second dentition—the pathological processes tend to resemble those of adults. Generally speaking, the younger the child the more diffuse is the tuberculous mischief in the lungs. In infants and young children the physical signs of tuberculosis in the lungs resemble those produced by bronchopneumonia, and a differential diagnosis has to be arrived at by the prolonged course of the illness and the persistence of the physical signs or by the signs of tuberculosis in other parts.

Though I may occasionally refer again to pulmonary tuberculosis in infants, I think it will be most useful to the majority of those in practice to confine my remarks chiefly to the cases occurring in older children; this is also the more desirable, since my personal experience of pulmonary tuberculosis in children over 5 years of age is much larger than that of the disease in infants.

It will be seen from the following table which I have drawn up from the Registrar-General's returns that the deaths from phthisis fall after the fifth year until the tenth year and then again rise. This increase shows itself earlier in the case of females, and swells the number of deaths in girls from 10 to 15 years of age. In males the increase comes later (when they get out to work) and is not marked until childhood is past.

Total Deaths (England and Wales) from Phthisis and Pulmonary Tuberculosis, 66th Report of the Registrar-General (1903).

	Under 1 Year.	1 to 5 Years.	5 to 10 Years.	10 to 15 Years.	Total under 15 Years.
Males ...	213	494	279	290	1,276
Females ...	201	409	343	702	1,655
Total ...	414	903	622	992	2,931

Pulmonary tuberculosis in children shows certain clinical points of difference from consumption in adults in the path of entry of the infective bacillus into the lung; in the mode of development of the disease; and in the signs by which its presence is manifested.

PATH OF INFECTION.

The source and path of entry of the infection of tuberculosis in children demands consideration, since on a