CASE OF
PHOSPHATIC CALCULUS IN THE MALE
BLADDER, WITH A NUCLEUS
OF BONE:

PROBABLY A SEQUESTRUM DETACHED FROM THE
INNOMINATE BONE.*

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I DESIRE to place on record a brief account of the following case, because, as far as I am able to ascertain, there is no precisely similar example described among those annals of surgery which are familiarly known and consulted for rare or remarkable cases. It is quite possible that, in some of the less frequented portions of our libraries, such a history as that which is to be detailed may exist, because it is probable that a similar occurrence has now and then taken place. Nevertheless, I must confess that my researches have not succeeded in bringing any account of it to light. It is right to say that the existence of such cases is here and there spoken of, although I have found nothing more than the affirmation, unaccompanied by any reference to the facts from which such inference was, or might have been, drawn.

The history is as follows.

F. B., aged 40, a muscular and healthy-looking man, was sent to my care at University College Hospital by Dr. R. Uvedale West, of Alford, Lincolnshire, in the end of June 1865, for some urinary affection of two years' standing.

He was in bed at my first visit to him on the 27th of June, and I commenced by examining the urethra. I found, situated at three-quarters of an inch from the external meatus, some narrowing of the canal, apparently congenital, which prevented the passing of a middle-sized bougie. The narrowed point was at once divided by a short *bistouri caché*, and a sound introduced into the bladder. I instantly struck a stone; and, substituting a flat-bladed lithotrite for the sound, crushed two or three times a phosphatic calculus, about three-quarters of an inch or so in diameter. At my next visit on the 30th of June, three days afterwards, finding the patient perfectly comfortable, and that he had passed a fair quantity of fine *débris*, I again introduced the lithotrite, and was conscious of grasping a substance unlike, in the sensation it communicated to my hand, to stone, since it made the two blades adhere to each other in an unusual degree. I mentioned the circumstance at the moment to the surrounding students; and, during the process of withdrawing the lithotrite, felt that some rough matter was adhering to its blades, which could not be detached, and which rendered it necessary to draw out the instrument with extreme care and slowness. Having done so, I remarked to the bystanders that the contents of the blades were much more tenacious than stone, and that the material should be hereafter analysed; but I did not then see anything to lead to the supposition that it was anything more than some form of calculus matter.

The next two days, he passed phosphatic *débris* freely. On the fourth day, I found him with partial inability to void urine; and, recognising the presence of a fragment in his urethra, I introduced a pair of long straight forceps, and slowly but easily extracted

a fragment, which was instantly recognised by those around, as well as by myself, as a fragment of bone. On now examining for the first time carefully the unusual-looking *débris* withdrawn at the previous sitting, we identified other bony fragments, but of smaller size. (See figure). Happily, the detention of this one in

Fragments of bone, drawn of the natural size.

the urethra saved it from the demolition which certainly awaited it from the jaws of the lithotrite, had it remained in the bladder. I now questioned the patient closely as to his habits and history, supposing it possible that a piece of bone might have been purposely introduced, perhaps as treatment of the above mentioned stricture at the orifice of the urethra; but, after sufficient investigation, I could entertain no such suspicion. Turning the patient on his left side, I then saw, for the first time, large cicatrices of former wounds or abscesses about the situation of the right innominate bone; and we learned the following history.

He had first suffered severely in the right hip seventeen years ago; he was lame for more than a year, and experienced much severe pain about the right hip, groin, and thigh. After this, an abscess broke externally. He was then confined to his bed some weeks, but afterwards walked about, and was tolerably well. A similar attack took place three or four years after the preceding one, and during a few years subsequently he was subject to the formation of abscesses, and to the pain and lameness resulting. After that, he was tolerably free for some time. Two years ago, he was laid up again for several weeks with pain and lameness, but without the formation of abscesses. He was confined to his room for eight or nine weeks, and gradually recovered; but was then attacked for the first time with severe pain and frequency in passing urine, shortly after experiencing the ordinary symptoms of stone in the bladder, which continued up to the present moment. About a year ago, however, a small stone, which obstructed the urethra, was removed by Dr. West at the time.

I think, after this detail, it will be difficult to come to any other conclusion than that the origin of the calculus formation was the existence of disease in a part of the os innominatum, resulting in the necrosis of a small portion; that this portion ultimately exfoliated and detached itself, to be extruded, not externally by the surface of the body, not by means of abscess which should follow the usual course along the tracks of muscles or vessels, but by one which communicated directly with the bladder; so that the sequestrum made its way into that cavity, and formed the nucleus of the phosphatic stone for which, about two years subsequently, I operated upon the patient. If so—and I cannot see any reason to doubt it, nor can I readily account for the occurrence of bone in the bladder on any other theory—the case is one not only of great rarity, but of extreme interest in regard of the possible course which a sequestrum, and the pus which in greater or less quantity must attend its progress, may take, and be safely eliminated from the body. In cases of diseased spine and hip, the attendant matter has been known to find its exit by the bowel, and also by the bladder. Bullets and splinters of bone have entered the male bladder, as the result of gunshot

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injury; and this not unfrequently. Again, in the female sex, but much more rarely, the bones of an extrauterine fetus have gradually made their way into the bladder, and have been removed from it by the surgeon. The present instance, however, of safe elimination of bone by the way of the male bladder, adds one more to the many examples of successful issue to those natural processes, extremely slow in their action, through which the human organism accomplishes results which from any surgical proceeding, however skilfully conducted, would be impossible.

A careful examination of the calculi preserved in the metropolitan pathological museums has been made, and I find that all the examples in any way related to the case before us are as follows.

In the museum of the Royal College of Surgeons is one example, numbered "H. a. 11," of a calculus having for its nucleus a fragment of bone; but it was removed from the bladder of a woman, and is without history. It was presented by Sir Wm. Blizard, and forms one of the illustrations in the published catalogue of calculi.

In the museum of Guy's Hospital there is an example, numbered 2150, of a light-coloured calculus, composed of phosphate of lime. It has a spongy cancellated structure. Dr. Babington has remarked in the printed catalogue respecting it: "This is unlike any calculus I have seen; it seems like a bony concretion, and not a deposit."

In the museum of University College is "a sequestrum from the pubes, covered with calcareous deposit." It was taken, however, not from the bladder itself, but "from a cyst which communicated with the urethra close to the neck of the bladder, and opened into the perineum." The sequestrum was removed from this cyst by operation.

No similar specimens were found in the museums of St. Bartholomew's, Middlesex, St. George's, King's College, and St. Mary's Hospitals.

In reference to my patient, I have only further to add, that the remainder of the stone was very soon removed, and that he was discharged from the hospital cured on the 15th of July. I have recently heard from Dr. West that he is now perfectly well.

AMPUTATION AT THE KNEE-JOINT IN MILITARY PRACTICE.

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IN the BRITISH MEDICAL JOURNAL of December 8th 1866, page 627, a table is quoted by Mr. Swain in his excellent essay on Diseased Conditions of the Knee-Joint, to show the rate of mortality following amputation of the thigh in various parts during the Crimean war; among other parts, at the knee-joint. The table, as mentioned, is extracted from Dr. Macleod's valuable *Notes on the Surgery of the War in the Crimea*; its original source having been the Director-General's official surgical report of the war. It seems well to call attention to the fact, however, that the number of cases in which amputation at the knee-joint was performed in the British army was so limited, that hardly any fair statistical deductions can be made from their results. The columns in the Return of Amputations, and their ratios of mortality, in the official report, show there were only 6 primary amputations at the knee, of which 3 proved fatal, or 50 per cent.; and 1 secondary, which proved fatal, or 100 per cent. With such small numbers,

statistics are of little use. Nothing could better prove this, than the circumstance that, if this secondary case had survived, the recoveries after secondary operations would have appeared as 100 per cent. in the official return.

In the French army, amputation at the knee was resorted to much more frequently than in the English army. Dr. Chenu, of the French military medical service (who undertook, and has admirably executed, the herculean task of compiling the statistics of upwards of 400,000 admissions into the French hospitals during the Crimean war), has traced the results of 69 amputations of the knee-joint in a special table. Of these, he shows that 63 proved fatal; a ratio of mortality of 91 per cent. Dr. Legouest, in his *Traité de Chirurgie d'Armée* (p. 735), refers to 78 cases of amputation at the knee-joint in the French army during the Crimean war; but Dr. Chenu's returns have been so carefully elaborated, that his numbers are doubtless the more correct. It is of no importance, however, as regards statistical reference, which number is right; for in each the ratio of mortality is the same. Dr. Legouest's table records that of the 78 cases, 71 died; showing, therefore, a mortality of 91 per cent., the same as Dr. Chenu. Hence, Dr. Legouest affirms, amputation at the knee should be abandoned, and amputation of the thigh employed instead.

The United States army surgeons do not appear to have been deterred by the results of the Crimean experience from practising amputation at the knee-joint during the late civil war. On the contrary, the most recent report from the Surgeon-General's office at Washington, states that this operation "has found numerous advocates during the war, and has been frequently performed. The returns to October 1864 give 132 cases. Of these, 52 recovered and 64 died; in 6 cases, amputation of the thigh was subsequently performed, with 3 recoveries and 3 deaths; in 10 cases, the result is undetermined. These figures are encouraging; and, if we look at the primary operations alone, the result is still more gratifying. Of 49 cases of primary amputation at the knee-joint, 31 recovered and 16 died; while 2 underwent re-amputation, of whom 1 recovered, and 1 (a tuberculous subject) died. This gives a percentage of mortality in primary amputations at the knee-joint of only 34.9."*

I have a very strong hope that in any future war amputation at the knee-joint will be performed more frequently than it has hitherto been performed by surgeons in our own army, and with results at least as favourable as those recorded in the United States army reports. Mr. Syme has recently pointed out so fully the safety and the excellent results of Mr. Carden's single skin-flap amputation at the knee, and the operation avoids so many of the difficulties and untowards circumstances which attend the ordinary mode of performing the operation, especially under the conditions of campaigning, that I trust Mr. Carden's operation will not be forgotten in our future field surgery. There are so many kinds of gunshot injury to which it is applicable, and for which amputation of the thigh is now practised—cases of laceration at the upper part of the leg on its posterior aspect preventing the formation of an underflap cut from the calf on the old plan; penetrating wounds of the articulation by bullets when the end of the femur has only received superficial injury; fractures at the upper part of the tibia complicated with lesion of the principal blood-vessels or involving its articular surface—that, if it be adopted,

* Circular No. 6, Surgeon-General's Office, Washington, Nov. 1st, 1865, page 47.