

THE INTERNAL SEMILUNAR CARTILAGE OF THE KNEE-JOINT SUTURED TO THE HEAD OF THE TIBIA.

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It is to add to the literature of this subject, and to try to increase in number the performances of this useful operation, that I bring before you this evening the following case. After reading Mr. Annandale's very interesting paper on this subject, and observing that he had opened the knee-joint with success in eight cases for synovial growth and slipped semilunar cartilage, I determined to follow his advice, and see if I could not assist in bringing this troublesome condition within the province of surgery.

As I am connected with the Surgical Aid Society, I constantly have the opportunity of seeing patients, who inform me that they have been cripples for many years from this malady, and that they have spent the greater part of that period in hospital, undergoing the usual *régime* for slipped cartilage—that is to say, rest, blistering, firing, pressure, etc. When, as often happens, they have derived little or no benefit from these modes of treatment, they are finally committed to the charge of the instrument makers, and a variety of splints tried. In some cases, great good is the result; but, should these appliances fail, the patient is compelled to suffer for the rest of his life from a weak and, at times, painful and useless knee.

Now I should say that, if a careful attempt has been made to remedy the displacement by one of the methods above enumerated, and this has failed, I do not see any good in waiting longer, or subjecting the patient to any further discomfort. On the contrary, I believe that, with strict cleanliness and attention to details, a slipped cartilage may be fixed, or a thickened synovial fringe removed, with no more danger than is caused by the extraction of a loose body from the joint; in both sets of cases, the need for active treatment is at times equally urgent. But before resorting to operative treatment, one should distinguish between two classes of cases—namely, the acute and the chronic. The acute are those in which the displacement has taken place at once, and the coronary ligaments been torn through; cases of this nature may be treated by rest, pressure, etc., with recovery as a not uncommon result. On the other hand, if the cartilage has been loosened by gradual stretching of the coronary ligaments, by no means rare, consequent on much kneeling, little time should be lost in adopting palliative measures. The same recommendation applies to those cases in which acute displacement often recurs, thus tending to become chronic.

With regard to the directions in which the internal and external cartilages may be dislocated, it seems that they may slip forwards, backwards, inwards, or outwards, and that these displacements may be either complete or incomplete; the internal chiefly is the most commonly affected. I may mention that, in a very elaborate paper on this subject, Dr. Scott Lang says that the internal cartilage is dislocated when the leg is rotated outwards; and that, when the external cartilage is displaced, it is from rotation of the leg inwards. He further advises, as an assistance to the treatment of this injury, that, when the internal cartilage is affected, the patient should keep the toes directed inwards, and, in the case of the external cartilage, that they should be kept outwards.

The following is the case I intend to put before you to-night:

In September, 1887, J. W., carman, aged 33, came to me at the Surgical Aid Society, and said that I had seen him some months back when he had applied for a knee-cap. He had stated on that occasion that, about one year previously, when carrying a heavy load, something had slipped in his right knee, and that he had to rest the joint, which was very painful and swollen, for some time; after the first accident he was constantly being laid up with the disordered knee, but rest was of no avail. Each time he returned to his work the old symptoms recurred within the space of a few days. At that time, he said, I had ordered him a strong knee-cap, which, unfortunately, had been of little use.

I then went carefully into his history, and found that he detailed all the symptoms of a slipped semilunar cartilage. Accordingly, as he was a young man and healthy, and as he had asserted that, unless something was done, he would have to give up his work, I proposed that the cartilage should be fixed, and explained

to him all the risks of the operation; these he readily consented to run. I therefore sent him to the Great Northern Hospital, and on September 28th performed the following operation: The right knee was thoroughly washed and enveloped in wet antiseptic bandages for some hours. A vertical incision, two inches long, was made over the internal aspect of the joint, the centre of the wound being over the internal cartilage. The joint being opened, I introduced my finger with some difficulty, and felt that the internal cartilage could be freely moved about over the head of the tibia, both forwards and outwards. Fixing it with my finger, I then passed a strong needle mounted on a handle through the periosteum at the head of the tibia, and through the semilunar cartilage. The needle was threaded with stout catgut, which was drawn through the cartilage and periosteum, and then tied up tightly, so as to fix the cartilage. After this the joint was disinfected with carbolic lotion, and the cut edges of the synovial membrane carefully brought together with buried catgut sutures. Superficial silver sutures were passed through the skin, no drainage-tube being used.

The leg was then fixed upon a back-splint with a foot-piece, which extended up the gluteal fold. Antiseptic dressings were applied, and the whole leg bandaged, so as to obtain firm equable pressure over the knee.

September 29th. Had a fair night. Vomited once, and complained of a little starting in the knee, so an ice-bag was applied. Temperature every six hours showed 97.6°, 98°, 99°, 99.6°.

September 30th. Pain had entirely gone. Ice still continued. Temperature 99.8°, 100.4°, 99.6°, 100.6°. His bowels were confined, and he had pain in the abdomen; accordingly he was purged.

October 1st. Had a comfortable night. Bowels acted well, and the temperature fell from 101°, 100°, 98.4°, and never rose again above normal.

October 2nd. I dressed the wound; there was no pus, no effusion into the joint. Antiseptics were reapplied; ice discontinued; and the leg not so firmly bandaged, as it was slightly œdematous.

October 3rd. Notes report patient very comfortable.

October 7th. Removed the dressings; all the wound was healed; the superficial stitches were removed. No effusion. A pad of cotton-wool applied to the wound, antiseptics being left off.

October 19th. On the leg being removed from the splint, the patient could bend it nearly to a right angle under the thigh; but, as it was still a little stiff, and as I did not wish him to use it until the adhesions were sound and firm, I did not let him stand upon the leg until November 1st.

November 26th. He returned from the Convalescent Home at Bognor, saying that his knee was perfectly well. I then advised him to walk about a little, but not to return to hard work for another month. He is now at work, and you will see that, since the operation, he has not been troubled with any discomfort in the joint, which is now perfect. With reference to the operation, I must say that I made a vertical incision instead of the transverse one recommended by Mr. Annandale. I did so, because at that time I was under the impression that he had employed this mode; but shall certainly at a future operation follow his advice, and make a transverse cut, for, by that means, a better view of the interior of the joint may be obtained. There are one or two details in the operation which I think most important.

I regarded the synovial cavity of the knee-joint as I do the peritoneum; that is to say, took great care that no blood should run into the joint, or at least should be cleaned out before being closed up. As we do when suturing the peritoneum, I was particularly careful to bring the two cut synovial edges together, in order that in a few hours the joint might be shut off by lymph thrown out between the edges from the rest of the wound. This point I consider to be of great moment, and must ask my hearers to try a similar plan in any case they may operate upon, for the synovial membrane is a serous sac, like the peritoneum; and therefore, to my mind, should be treated in a like manner. If this is done, I do not think there is much to fear from opening the knee-joint. There is another reason why I do not think there is so much danger, as is generally apprehended, in this operation of opening the knee-joint affected with a dislocated semilunar cartilage or growths. When attacks of synovitis have frequently occurred, the synovial membrane is not nearly so likely to take on acute inflammation as it is when the serous sac is opened without any preliminary inflammatory attacks. Abdominal disorders furnish us with another parallel to these. This is shown in peritonitis, which, I think, is much more likely to ensue when one operates on a patient whose abdomen has not undergone the preparatory

changes which, I think, take place when the abdominal cavity has been filled with fluid or an ovarian tumour.

The result of my treatment in this case will encourage me to attempt, at some future date, a repetition of the operation. I may mention that I have under my care several patients who are troubled with symptoms of displaced cartilage or growth in the joint, which are constantly slipping or getting pinched between the ends of the bone, thus causing pain and crippling them. I intend, therefore, if I find no improvement after a fair trial, say six months, to open their joints, and remove a fringe or fix a cartilage; and, by so doing, I shall hope to rid them of pain, discomfort, and inability to use the limb.

P.S.—The patient wrote to me on April 16th, 1888 (seven months after the operation), saying he continued quite well.

AN UNUSUAL CASE OF HÆMATURIA.

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THE following case is so unique in my experience that I venture to place it before the profession.

On September 11th, 1887, I was asked to see, in consultation with Dr. Campbell, of Newcastle-upon-Tyne, Miss L. B., aged 11, a pale, emaciated young lady, who for a month had been suffering from hæmaturia, accompanied by high temperature. I was told that when an infant she had suffered from some illness, which had been followed by general desquamation, but whether it was scarlet fever the parents could not say. A few years after this she had measles, and soon after this whooping-cough. A year ago she had a slight attack of hæmaturia, the cause of which was never properly understood. Her recovery was slow, and although the temperature was not taken by the medical gentleman then in attendance, the mother states that the patient was decidedly feverish, particularly towards evening. Ultimately she made a good recovery.

Whilst spending last summer at Cullercoats along with her family, her brother took ill and was brought home only to develop and pass through a very severe attack of typhoid fever. When Dr. Campbell and I met in consultation the boy was convalescent; it was the thirty-second day of the fever. Five days after the illness of this brother was distinctly recognised as typhoid fever our patient had become feverish, and hæmaturia suddenly made its appearance. The temperature ranged from 101° to 103°. Hæmaturia had persisted without any intermission from the commencement of the feverish attack. At times the urine was deep black in colour; it was always plentiful, had a specific gravity about the normal, and was acid in reaction. It was passed without pain, never contained clot, never pus cells or tube casts, but numerous blood cells. A few days before I saw her, vomiting had set in, always coming on immediately after eating, and without pain. Bowels were natural; there was slight cough, no expectoration.

When I saw her she was very ill, much reduced from the fever and vomiting; her tongue was moist and creamy; she was sleepy and seemed heavy and apathetic; pulse from 120 to 124, and it had remained at this all through her illness. Small moist musical râles were heard all over the lower part of the chest; the base of the right lung was rather dull on percussion. The heart's sounds were healthy; liver dulness normal; splenic dulness slightly increased. There was no tumour or increased dulness detected over the region of either kidney, but a degree of pain was experienced when the right kidney was tilted forward. The abdomen was flat, no spots were seen in the skin, no fluid was detected in the peritoneal cavity, no œdema of face, feet, or hands existed. A record of the temperature was unfortunately not kept at first, but on the evening before I saw her it was 104°. From September 2nd to the 18th, the evening temperature generally registered 1° to 3° higher than the morning; the evening temperature being 103° or 104°, whilst the morning was 101° or 102°.

On September 19th the morning temperature suddenly fell from 103° to 99.2°, and whilst on this evening the temperature rose to 100.2°, it never again did so. The morning and evening temperatures were for the future pretty nearly equal, never being higher than 99°.

All sorts of medicines had been tried, iron, gallic acid, quinine, ergot, ergotin, in the view that the hæmaturia might be in some

way or other associated with a specific fever. Sulphur, carbonate of soda, and quinine were given, but all without avail.

After the sudden fall of the temperature on September 19th, blood never appeared in the urine, and the patient had a convalescence which was quite uninterrupted.

Now here was a case of hæmaturia which began with high temperature quite suddenly; both continued for thirty-five days, the high temperature and the hæmaturia each being quite uninfluenced by drugs; then a sudden fall of the temperature occurred, also a cessation of the hæmorrhage, both followed by cure. What was the hæmaturia symptomatic of? There was nothing to suggest stone in the kidney or in the bladder, no enlargement of the kidney pointing to cancer, no history of hæmophilia, no purpura hæmorrhagica, no Bright's disease. The diagnosis, in my opinion, lay between tubercular disease and some peculiar blood condition; and we eliminated the former partly by the good family history we obtained, and the absence of any diseased condition of the lung which we could definitely regard as tubercular; the few râles which we heard in the chest had not been of two days' duration. From the sudden onset of the illness and the high temperature, the continuation of the high temperature and hæmaturia as associated conditions of thirty-five days, the distinct evening exacerbations, their refusal to be influenced by medicines, the enlargement of the spleen, the contemporaneous illness of the brother, and that illness unmistakably typhoid fever, and the fact that brother and sister had been living under identical conditions at Cullercoats, the one taking ill five days before the other; all these led us to regard the hæmaturia as specific, or, in other words, that our patient was also suffering from typhoid fever. Am I right in even suggesting this? All our textbooks speak of the relationship. In scarlet fever we have an illustration of how a poison known to act principally upon the skin and the tonsils may yet attack the glands in the wall of the intestine and the kidney; for as early as the second or third day of the fever the kidney *post mortem* has been found to be the seat of an interstitial or a glomerulo-nephritis. Besides, in typhoid fever itself, is it not the case that while the glands in the lower part of the wall of the ileum are the seats usually selected by the poison, there yet occurs every now and then an inflammation of the lungs with all the physical signs of a pneumonia, a pneumonia difficult to explain as regards its causation and relationship to the typhoid fever, and yet at other times so acute and so severe as to mask the other signs of typhoid fever, of which it is after all but the local expression? I am inclined to think that in our case the kidneys had to bear the brunt of the poison, or as the result of the poisoned condition of the blood, the walls of the renal vessels allowed the blood to escape. If so, then I trust I have made good my claim to this case of hæmaturia being regarded as quite an unusual one.

WOLFFBERG'S COLOUR-TEST.

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By the employment of this test Dr. Wolffberg (*Klin. Monatsbl.*, p. 359, 1886) claims to have discovered a simple method of telling in a given case whether defective vision is caused by refractive errors or by defect of the light-sense. He employs two discs placed on a background of black velvet; the one is red, 2 millimètres in diameter (R²), and the other blue, and 7 millimètres in diameter (Bl⁷); if the vision is less than $\frac{1}{3}$ larger, red and blue discs are used. By comparing the distances at which these discs are recognised by the eye under examination, with the degree of visual defect, as ascertained by Snellen's types, Wolffberg believes that he is able to tell whether the defective vision is due to an error of refraction. An eye which reads $\frac{1}{3}$ should see the discs at 5.5 metres; if this be not the case, he concludes that it is suffering from some affection, other than a refractive error, which is likely to affect the light-sense.

If vision be impaired by simple ametropia, the discs should be seen with each degree of vision at a certain constant distance from the eye. Wolffberg believes that he has ascertained these distances by experiment, and he has constructed a table from which can be seen at a glance the distance at which the discs ought to be recognised with each degree of vision. If the defective vision be caused by defect of the light-sense—which is supposed to influence colour-vision more than form-sense—the distances at which the discs will be seen will correspond to constant distances,