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ADDENBROOKE'S HOSPITAL, CAMBRIDGE.

CASES OF STRICTURE, IN WHICH SYME'S OPERATION WAS PERFORMED.

By GEORGE MURRAY HUMPHRY, Esq., Surgeon to the Hospital.

CASE I. Wm. Buck, aged 55, a strong healthy man, was received into the hospital on the morning of April 22nd, 1855, in extreme agony from retention of urine. Nearly forty years previously, he fell across a plank upon his perinæum. He was then admitted into the hospital; and Mr. Okes found it necessary to cut into the perinæum, for the purpose of emptying the bladder. He had experienced difficulty in making water ever since. In April 1846, I opened his bladder from the perinæum, in consequence of retention, with swelling in the perinæum, and impassable stricture at the bulb; and afterwards took much pains to treat the stricture in the usual manner. The wound healed; the stricture was gradually dilated; and he was discharged, with directions to pass No. 8 bougie at regular periods. This he neglected, and had been under my care two or three times subsequently for the relief of the stricture and its accompaniments. Lately, the difficulty of making water had been gradually increasing, and he had been unable to pass any urine at all since the morning of the 20th. The surgeon at his home and the house-surgeon at the hospital had failed in their attempts to introduce a catheter. He begged that those attempts might not be renewed; but that the operation, which had before relieved him, should be at once performed. There was no evidence of distension of the bladder; no unusual dulness on percussion above the pubes. Still pressure in that situation increased his pain and urgent desire to make water. There was some indurated swelling in the perinæum; and his agony was so great that I determined at once to yield to his solicitations. When he was under the influence of chloroform, I tried to pass a catheter. Not succeeding, I made an incision on the left side of the perinæum, as for lithotomy; and soon opened a cavity containing mucopurulent fluid, having a urinous odour. No urine followed; and I could discover no communication with the bladder. Accordingly, I carried on the incision in the direction of the membranous part of the urethra. When I had cut, as I thought, deep enough, I passed a straight silver catheter into the wound, which, under gentle pressure, went on several inches in the direction of the bladder; indeed, I was confident that it had entered the bladder; but no urine made its appearance. After a short time, some tenacious thick mucus oozed through it, followed by urine; the whole quantity being less than a pint. The man was relieved; and thick bloody urine continued to flow through the wound. On the 25th, I with much difficulty passed a small catheter through the stricture into the bladder, and secured it there. On the 27th, having substituted a small staff for the catheter, I extended the perinæal wound by means of a bistoury passed through it into the groove of the staff, and cut quite through the stricture, after the plan, though not quite in the exact manner, recommended by Mr. Syme. The staff was then withdrawn, and a large (No. 12) gum-elastic catheter, passed through the urethra

into the bladder without the slightest resistance, was secured there.

After this operation, he was much more comfortable. The urine flowed freely through the catheter, and quickly improved in character. In three days, the catheter was removed, and passed at intervals, which could always be done with perfect ease. Sometimes it was allowed to remain a few hours. He left the hospital June 8th. The wound was then quite healed. He could make water in a good stream, as well as ever in his life, better than he had done for many years.

Dec. 31st. Passing to-day through the village where he lived, I called upon him. He tells me that he is perfectly well, able to pass water better than he has done for forty years.

CASE II. David Saunders, aged 45, had for many years suffered greatly from stricture, consequent on gonorrhœa; and had been treated for it by other surgeons, and by myself in the hospital more than ten years ago. The orifice of the urethra was scarred by chancres. There were one or two slight strictures in the anterior part of the canal, and a very tight one at the bulb, admitting No. 1 catheter with difficulty. It was as tough as well as a tight stricture, which former treatment had failed to cure. Encouraged by the very successful result of the former case, I determined to perform Syme's operation. Accordingly, on May 18th, 1855, I passed through the stricture the small grooved staff employed by the professor, and made an incision in the median line of the perinæum. The groove of the staff was soon reached, and the bistoury carried along it for an inch or more through tissues which seemed to be indurated. A large gum catheter was without difficulty passed by the urethra into the bladder, and secured there. It was removed on the 21st, and passed again with ease on the 24th. After this he had an attack of ague, which did not seem to have any direct relation to the local malady, and yielded to treatment by quinine. On June 14th, the catheter not having been passed for several days, some resistance to its entrance was found at the seat of stricture. It yielded to slight pressure; and the catheter was allowed to remain a couple of days. The wound did not heal very quickly; indeed, to promote the closure of the sinus left by the operation, I directed him to pass a catheter frequently, for the purpose of drawing off the water. This object was attained before he left the hospital, in the middle of July. On December 4th, he told me that, though the stream of water was not quite free, it was better than it had been for years. He continued to pass a bougie occasionally.

CASE III. George Brittan, aged 30, had suffered under stricture, consequent on gonorrhœa, above ten years; had been under my care in the hospital four years ago, but soon got bad again after his return home. Latterly, his sufferings had been very great. His difficulty in making water was always extreme, and often he was for hours quite unable to void a drop. Hearing of an operation for the cure of the disease, he came into the hospital, anxious to undergo it. The stricture at the bulb was so tight that, although he had rested in the house for a couple of days, it took me nearly an hour to insert No. 1 catheter into the bladder. After two days I withdrew it, and immediately passed Syme's staff through the stricture, and cut through the perinæum upon it, carrying the bistoury along it some distance through the stricture. Finding, however, that a large gum-elastic catheter would not easily traverse the urethra, I concluded that the stricture was not completely divided. Accordingly, the staff was reintroduced, and the

incision extended so as to make sure of attaining the object. The catheter now entered easily, and was secured. For several days there was a good deal of venous bleeding from the wound, as well as from the urethra; and some trouble from clots forming in the bladder. I suppose that it proceeded from the vessels of the bulb. It weakened the man, and resisted the ordinary measures; but stopped at last under the influence of gallic acid and opium. The catheter was removed after two days, and introduced again occasionally without difficulty. The wound having quite healed, the patient was discharged Sept. 25th, a month after the performance of the operation. He came to the hospital Oct. 27th, and told us that he could make water as well as ever in his life, in a full stream, with force enough to go some yards. He had not passed an instrument since he left.

The result of these three cases is so entirely satisfactory, that I shall have no hesitation in resorting to the operation in other suitable instances; and recommend those surgeons who are prejudiced against it to give it a trial. In each of these cases the stricture was very bad; and the ordinary treatment, perseveringly employed for some time, had failed to afford a cure. In two, life was imperilled by the disease; and in one of the two, it had twice been necessary to cut into the bladder to give vent to the urine. In these two, the cure is quite complete; and there is every probability of its being permanent. In the other case, great improvement has been effected.

This operation, which deserves to be ranked as one of the great improvements in modern surgery, has been received with mistrust, and has encountered great opposition; chiefly, I think, because the theory of it has not been well understood. It has generally been supposed that, if a stricture be cut, the new medium, which unites the divided edges—the cicatrix in other words—will have such a tendency to contract, that, even though they be held apart for a time, it will soon draw them together, and close up the canal as narrowly and as firmly as before. In short, the contractile tendency of cicatrices has been overestimated and too much dreaded. The notions of its force, and the apprehensions of its ill effects, have been derived from the too exclusive examination of those scarcely normal examples of cicatrices—the cicatrices after burns, for instance—where, owing to some particular cause, such as a damaged state of the tissue or slow healing, a large amount of coarse, imperfect, contractile, fibrous tissue, has formed in the cicatrix. A little observation of the product of the healing processes conducted under more favourable circumstances would have corrected these views, and shown that, commonly, the contraction of cicatrices is, by no means, so great as usually represented. Thus, the scar of a simple wound does not often cause any puckering of the adjacent skin; the scar of an issue is as large, or nearly so, as the portion of skin destroyed by the caustic; the cicatrix, which fills up the gap left by the removal of the flap transplanted by a taliaiotian operation, is, if nothing has interfered with the healing, soft, supple, without marked contractile propensities, and its area is about equal to that of the flap whose place it supplies. It is well known that when a portion of skin is removed, either by caustic or the knife, the elasticity of the surrounding tissues draws them apart, and widens the breach; and it would seem that the contractile property of the repairing medium, provided it be formed in a natural manner, is about sufficient to counterbalance this elasticity, and restore the parts to their proper relative position. If the surrounding parts offer little resistance, as in the case of the scrotum, or eyelids, the contracting force of the newly forming medium is often sufficient to draw them together, and may even cause deformity. But where the contraction does more than this, where it goes on after the healing is completed, and is able to overcome much resistance, it will, as a general rule, be found that there has been some difficulty in the reparative process, and that the cicatrix is, in consequence, tougher, coarser, and thicker than natural; in fact, more or less nearly allied to the plastic products of inflammation in

other qualities, as well as in that of possessing a contractile tendency.

We know well, also, that extensive incisions and lacerations of the urethral canal in lithotomy, the extraction of calculi, and other operations, are very rarely followed by any contraction of the passage. That contusions of the urethra, by falls upon the perineum, are so followed, in many instances, is probably explained by the inflammation and effusion of contractile lymph in and around the urethra, consequent on the bruising, rather than by the mere cicatrization of the torn parts.

In the operation at present under consideration, the divided edges of the stricture are held apart by the presence of a full sized catheter retained in the bladder. The reparative medium connecting the divided edges, and restoring the canal, is formed around the catheter, and, provided the healing goes on favourably, analogy would lead us to expect that the cicatrix will be soft and supple. Any contractile tendency which it may possess, being overcome by the pressure of the urine, will, we may hope, be insufficient to restore the stricture.

The successful result of the operation depends, therefore, if these views be correct, upon the proper constitution of the newly formed cicatrix, and is likely to be marred by any causes which, interfering with the healing processes, induce inflammation, lead to a surplus formation of lymph, and engender a cicatrix more tough and contractile than natural. For this reason the operation should be done carefully, with as little bruising of the passage as possible; and unnecessary disturbance of the parts with catheters afterwards should be avoided.

It is essential, of course, that the stricture should be completely divided. It is generally at or near the bulb; still it is not always easy to tell its exact situation; so the incisions should be made sufficiently free to leave no doubt of their having been effectual. The easy passage of a large catheter into the bladder is a good test of this. If any obstruction be felt, it should be withdrawn, the staff again introduced with care, and the division of the stricture completed, as in case III.

The operation has been objected to for three chief reasons, besides the dangers attendant upon it, which, in a moderately healthy subject, cannot be great. First, the passage of an instrument through the stricture is essential to its performance; and this cannot always be done. Secondly, when this has been done, the great difficulty has been overcome, and a cure may be effected without an operation. Thirdly, there is the fear that the contraction of the cicatrix, consequent on the operation, will reproduce the stricture.

The last objection, which is a theoretical one, I have already endeavoured to answer theoretically. The more important argument from experience is, I believe, in favour of the radical nature of the cure, if the operation be thoroughly and properly performed.

With regard to the first objection, I confess that I am disposed to agree with the statement of Mr. Syme, that, provided the stricture permits a flow of urine, it almost always admits of being permeated by a small catheter, cautiously and perseveringly used; especially if the patient be allowed to rest in bed for a day or two before the attempt is made. In case III, which was of the worst kind, I was nearly an hour in overcoming the difficulty, and reaching the bladder. It might probably have been done quicker, but I prefer, in such cases, to give time; and endeavour gently to insinuate and press on the instrument, rather than use much force.

The second objection has the most weight; because there is no doubt that, by the persevering use of bougies, most, if not all, bad strictures may be cured. Only a short time ago I met a man, aged 66 years, whose bladder I had been obliged to puncture above the pubes two years before, on account of retention, caused by an impermeable stricture of many years standing. Subsequent dilatation of the stricture by bougies had been effected, and he told me that he was quite well, and could pass water as well as ever in his

life. He still continued to follow the directions I had given him to introduce the bougie once a week; which, on former occasions he had neglected. Nevertheless, we know practically that, owing perhaps to the inattention of the patient, the bougie often fails to afford more than temporary relief, and that, in hospital practice particularly, the real cures bear but a small proportion to the cases treated.

I think that Mr. Syme has conferred a great boon upon the public by forcing this operation upon the notice of the profession, and believe that its merits will ensure its more general adoption.

In conclusion, I cannot forbear just directing attention to a fact of extreme practical importance in Case 1. It is this: although the retention was most urgent and agonising, and would probably have proved fatal, there was no evidence of distension of the bladder, and less than a pint of fluid escaped when that viscus was opened. I have met with the same thing in other similar cases, when the bladder was thickened and inflamed, and, consequently, did not admit of dilatation.

BRISTOL ROYAL INFIRMARY.

CASE OF MELANOTIC DEPOSIT IN THE LUNGS, WITH PURPURIC SPOTS UPON THE PART, AND MALIGNANT DISEASE.

By F. BRITTAN, M.D., Physician to the Infirmary.

CASE. J. G., aged 32, a potter by trade, was admitted Nov. 5th. He was a slightly formed man, with debilitated appearance; pale and feeble, with large head and prominent features. Had been working in a room heated to a high temperature, and exposed much to draught. His breathing has been somewhat shorter than usual for three months, so that he has been unable to walk fast, or run. Three weeks since, his illness began with cough, soreness over the sternum, and stitches in different parts of the thorax. After lasting three days thus, the pains increased in severity, "catching" him suddenly in the back; and he had a white frothy expectoration. His cough is now, he says, the same, but the expectoration is yellow. The pains in the chest have decreased; that in the back is worse.

On examination, small crepitation is heard over the posterior part of the right thorax, larger on the corresponding part of the left. The left side is somewhat bulged; there is also rough breathing and crepitation over the front of thorax, and especially in right pectoral region. His bowels are costive; tongue slightly coated; pulse 85. Urine 1033; no albumen, but copious red deposit.

There was nothing peculiar in the progress of the case, which was at first regarded as an obscure form of pneumonia. After two or three days, however, his general condition led me to think it more probably a case of phthisis, with extensive deposit diffused throughout the lungs. He was allowed generous diet and stimulants, but progressively sunk, without any alteration of symptoms; and died on the 23rd.

POST MORTEM EXAMINATION, twenty-six hours after death. Body generally very pale. Blood quite fluid throughout the body. Brain excessively anæmic, with slight serous effusion at the base. Vessels healthy. On removing the parietes of the chest, malignant disease was found at the seat of pain in the sternum, and about an inch of the seventh rib was similarly diseased; the entire texture having given place to soft cancer. The lungs, both slightly adherent, had a peculiar black mottled appearance, caused by black spots, generally with a small clear spot in the centre, about one-eighth to one-fourth of an inch in diameter, mostly running into each other, so as to cause patches of considerable size, and occupying two-thirds of the surface. Between these patches and spots were to be seen here and there white irregular lines, just as if the blood-vessels had been filled with soft white paint. On cutting into the lungs, the internal aspect was found to

accord with the external, and to be studded with solid hard aggregations of black matter, surrounded by lung condensed by exudation. Microscopic examination showed these black nodules to consist of small dark granules, with peculiar molecular motion, like pigment granules, which no doubt they were. Bronchial glands enlarged and black, but no cancer. There was no effusion into the pleural cavity: there was slight effusion into the pericardium; not, however, much more than usual. The heart, natural in every other respect, had the appearance exactly as if it had been sprinkled with carmine, so thickly was it covered with bright red spots and patches. The pericardium was not similarly mottled. The blood-vessels on the surface of the heart had a peculiar sodden and flaccid empty appearance. The heart, examined microscopically, was found to be undergoing fatty degeneration of the muscular fibres; in many fibres, with complete destruction of structure. The intestine was healthy, as also all the other abdominal viscera, except the pancreas, which was somewhat indurated at its duodenal extremity, in connexion with a gland about the size of a walnut, filled with soft cancer, and possessing the same microscopic characters as that of the diseased portion of the rib and sternum; viz., that of a mass of cells and granules, with glomeruli; the cells being about four times the size of the blood-discs, and enclosing two or three large nuclei, with contained nucleoli.

REMARKS. I have reported this case as offering many points of interest, both as regards its semeiology and pathology. It will be observed that there was no external manifestation of any purpuric condition, nothing to suggest the state of the internal organs. I did fancy he might have inhaled some noxious matters in the course of his labour, and made inquiries of him, but learnt no more than that he occasionally used lead.

In regard to the pathology of the case, I am satisfied the black matter was not of extraneous origin: and the question arises, What was its nature? Was it tubercle, attended by pigmentary deposit; or malignant disease; or simple pneumonia, with pigmentary deposit? The nearest description of such a condition I remember to have seen is by Dr. C. J. B. Williams, in his article "Malignant Growths in the Lungs," in the *Library of Medicine*. He there states: "We have met with several cases of *melanosis* or *black tubercle* affecting the lungs." Although, however, Dr. Williams thus treats of melanosis of the lung under the head of malignant growths, he is clearly of opinion, with Andral and with Dr. Handfield Jones (in his excellent *Manual of Pathological Anatomy*), that the melanotic deposit is only a modification of the colouring matter of the blood; and, as such, a mere accident, whether occurring in connexion with malignant disease or tubercle, etc. Fully concurring in this opinion, I regard the presence of malignant disease in other organs as a coincidence only, and discard the idea of the affection of the lungs being malignant at all. Falling back, then, upon the tubercular or pneumonic origin of the disease, the discrimination must be one of great difficulty; for the history of the case, with the three months shortness of breathing, will apply to either. I am led, however, by the microscopic characters of the lung, and the general circumstances, to prefer the latter view, and suppose that the purpuric deposit, which had been taking place for three months before his admission, then began to cause pneumonia by its presence, probably in conjunction with some other accidental circumstances. At all events, the nature of the deposit, and the view that such deposit is derived from the blood, receives the strongest confirmation from the condition of the blood itself and the purpuric state of the heart.

I may mention, as bearing upon the same view, that I have now in the same ward a patient suffering from pyrosis in a very severe form, for which, some months since, he was ordered to rub in a stimulating liniment, and apply a blister. The space covered by the blister is now a large dark patch in the epigastrium, like the skin of a negro; whilst the side where the liniment was employed is covered with black spots, a quarter of an inch in diameter, with