CLINICAL LECTURE

ON

URINARY FISTULA OF THE PENIS, TREATED BY URETHROPLASTY.

Delivered in King's College Hospital, May 10th, 1872.

By JOHN WOOD, F.R.S.,

Surgeon to the Hospital, and Professor of Surgery in the College; etc.

GENTLEMEN,—The kind of urinary fistula of which I propose to treat to-day is one which, by the admission of all surgeons of experience, is very difficult to cure; viz., a fistulous opening in the wall of the urethra, through the under surface of the penis in front of the scrotum. The most common point of opening of this kind of fistula is placed just at the junction of the scrotum with the penis, where an acute angle is formed in the usual pendant position of the latter, and it is at this part that it is most difficult to close the fistula. Frequently, it is the result of a stricture forming after repeated attacks of gonorrhoea in the anterior part of the urethra, and succeeded by inflammatory abscess, ulceration of the urethral wall, and infiltration of urine into the scrotum, and under the loose skin of the penis. Sometimes it forms in consequence of neglect in wearing a catheter too long and too constantly in the urethra, when treating stricture by what is called "vital dilatation", by a hard and unyielding silver catheter. Sometimes, as in the case now in the hospital upon which I have to remark to-day, it is the result of an injury to the penis, producing both a tough traumatic stricture and urinary infiltration, abscess, and sloughing of a considerable extent of the lower urethral wall. The resulting loss of substance in a narrow channel like the urethra, complicated with a very resisting organic stricture placed immediately in front of it, is a very serious and difficult condition of things, and one which requires all the resources and all the care and foresight, as well as all the patience and perseverance of the surgeon to remedy. I do not say that, even when he has done all that is possible, he can succeed in *curing*, in the proper sense of the word, either a traumatic or any other kind of permanent organic stricture. On the contrary, I believe that it is impossible by any system of treatment whatever, entirely to eradicate the tendency to reproduction of the urethral narrowing which, in a severe organic stricture, remains at the diseased part. But it may be so far remedied that by a careful avoidance of exciting causes, and the continued occasional use of the catheter or bougie, the canal may be kept sufficiently free to allow the natural and proper flow of urine. It is one among the many conditions of disease in which the physician or surgeon can only, in the nature of things, palliate and relieve, but cannot entirely take away.

I have practised and witnessed very many plans to close up such an opening, which have resulted sometimes in entire failure, sometimes in partially bettering the patient's condition, and sometimes, it must be said, in leaving him worse than it found him. First, dilating the stricture by a combination of section with the bougie treatment, up to the size of a No. 11 or 12, and then paring the edges all round and drawing them together with hare-lip or other sutures, with a large catheter kept in the bladder, is a plan which I have seen over and over again to fail utterly; and it was not until I had recourse to the method which has been entirely successful in the following case, that I obtained results which encouraged me to perseverance in a line of treatment deduced from the practice I have pursued with an unusual amount of success for some years, of transplanting tissue from adjacent parts to fill up voids in the part affected.

C. C., aged 25, from Warminster, in Dorset, is now under my care in a convalescent condition in the Victoria ward of the hospital. He was admitted on the 10th of April, last month. Last September, he sustained a violent blow or crush of the penis in hurriedly getting over a gate with the organ in a condition of erection. The injury was succeeded by great shock and prostration, extensive ecchymosis, enormous swelling, sloughing, and extravasation of the urine into the penis and scrotum. My friend, and former house-surgeon at this hospital, Mr. Wilcox of Warminster, was called in, and succeeded, after much difficulty, in passing a No. 7 catheter and drawing off the retained urine. After bringing the patient safely through this dangerous crisis, and

dilating carefully the stricture which followed upon it, Mr. Wilcox attempted, by the ordinary plan to which I have alluded, to close up the fistulous opening about one month before his admission into the hospital. Complete failure followed this attempt, and the patient was sent up to me with some valuable remarks from the surgeon in attendance, which guided me a good deal in the treatment which has proved successful.

The man was young, vigorous, and in excellent robust country health, with a very hard resisting stricture, about three inches from the meatus urinarius, admitting with difficulty a No. 7 bougie, and behind it an oval fistulous opening showing plainly the interior of the urethra, about seven-eighths of an inch in the long diameter, and three quarters of an inch wide, and leaving only less than a quarter of an inch of the upper urethral wall intact. Now, here was evidently a hiatus which, like the deficient vesical and urethral wall in epispadias and "ectopia vesicæ", could only be filled up by transplantation of skin, arranged in such a manner that no contraction should be possible in the deeper surface put in to complete the urethral wall. I, therefore, determined to perform an operation on the same principle as that which I have frequently performed for the deformity just alluded to.

As a necessary preliminary, on the 18th of April, I divided the stricture with a probe pointed tenotomy knife, upon a director inserted through the fistulous opening and directed forwards, making a free section in two places towards the side and dorsal aspect of the penis, and then introduced and tied in a No. 12 silver catheter. This excited little irritation or suppuration; and accordingly, not wishing the man's health to become deteriorated by too long a previous residence in a London hospital, on the 20th of April I performed the following operation under chloroform. On the left side of the fistulous opening I traced out with a small scalpel an oval piece of skin adapted to fit the opening exactly, leaving its long side next to the fistula attached and uninjured by the knife. I next raised the oval flap, taking care to leave it sufficiently thick and bulky, pared carefully the right edge and ends of the opening, and turned over the flap of skin like the lid of a box, to fit in and adhere to the sides of the fistulous aperture. This I carefully stitched in by five points of thin silver-wire suture, leaving the twisted ends very long, so as to reach to the outer surface of the whole of the extensive wound which I next proceeded to make. This I did by dissecting off the skin all round the fistulous opening to the extent of an inch and a quarter on every side, so as to leave a broad raw surface for adhesion, taking away entirely the skin so dissected off, so as to prevent retraction and subsequent narrowing of the surface destined for adhesion. Then, from the anterior surface of the scrotum, immediately behind the fistula, I dissected a triangular flap of skin, leaving a broad base attached at the lower side, and a blunt truncated angle at the upper part. This, after the somewhat free bleeding had ceased entirely, and all the surfaces were carefully dried and cleansed, I brought forward by traction upon the whole scrotum, and placed upon the raw surface of the deeper reversed oval flap and upon the prepared and dissected margin, and secured the whole in its place by numerous points of silver-wire suture, permitting the passage between them, on the right side, of the long ends of the deeper wire sutures. The scrotum was kept in its forward position by means of a suture of thick silver wire which would not easily ulcerate through the skin, and was then placed upon a pad or cushion. The No. 12 catheter was retained in the bladder in the usual way, filling entirely the urethra, and permitting no urine to escape by the side of it. On the 23rd, it was found that some urine had escaped through the left posterior angle of the L-shaped wound, together with about an ounce of pus, which had evidently accumulated in the front part of the scrotum from which the superficial flap had been taken. A India-rubber tube was then attached to the end of the catheter, long enough to reach over the side of the bed to a vessel placed under it, so as to act like a syphon to keep the bladder clear of urine. This acted admirably throughout the treatment. The external wound had by this time become entirely united by adhesion, except at the points where the deep sutures emerged, and at the lower or posterior angles, which still discharged a small amount of pus from the side of the scrotal abscess. All the superficial wire sutures were now removed.

From this time to the 30th April, the discharge of urine and pus by the wound became daily less. The long deep wire sutures were removed one by one as they became loosened; and on May 3rd the report is, that no more urine passed through the wound, and scarcely an appearance of pus, and that the extreme angles of the wound were gradually closing, one of them being in fact actually closed. On the 10th of May, the catheter was left out for a few hours, and used only when the bladder required emptying. In consequence of the rapid return of contraction in the stricture it was found somewhat difficult to reintroduce it for the first few times, but this operation gradually became easier, and, on the 20th May, he was discharged with the wound entirely and soundly healed, and the No. 10 catheter passed only once a-day. The urine

passed freely in the normal manner, and the neighbourhood of the scar felt pliable, soft, and healthy.

I may now speak of the difficulties with which the surgeon meets in producing such a favourable result as this, and of the causes of the frequent failure to obtain it. The most influential cause is the constant escape of urine, and its presence between the surfaces which we wish to adhere. Behind the stricture and the fistula the urethral canal is frequently somewhat dilated, and the urine will at this point pass by a catheter that completely fills and distends the strictured part. It then percolates into the wound, passing between and irritating the raw opposing surfaces, and preventing their union. This is to be prevented, first, by having a full-sized catheter in the urethra, and previously inuring the patient to its constant presence, and wearing out, as it were, the irritability of the bladder; secondly, by producing a primary and effective obstacle to the escape of the urine, by an accurately adapted and well-fitting under flap to fill up the fistulous opening completely; thirdly, by having very broad surfaces of adhesion, accurately adjusted, and which can be kept by pressure in close approximation, to the exclusion of any urine that may accidentally get into the neighbourhood of the wound; fourthly, by preventing any strain upon the stitches, supporting the weights of the scrotum and testes by the arrangement of a thick suture and a supporting cushion or pad such as I have described. In these cases I have found the use of a broad strap, placed across the upper part of the thighs and behind the scrotum after the manner of Ricord's yoke, very useful; and I employ it also after the operation for the radical cure of rupture, with a like intent. In conclusion, I should say that it is of the highest importance to have the patient's general health good, his urine normal, and his bladder and kidneys quiet and not irritable, before attempting such an operation as the foregoing. He must also be patient, and, if possible, hopeful enough to aid the efforts of the surgeon for his recovery; it is of no use attempting these operations in broken-down constitutions, with diseased kidneys, albuminous urine, and irritable nerves.

ABSTRACT OF LECTURES

ON THE

SURGICAL TREATMENT OF ANEURISM IN ITS VARIOUS FORMS.

Delivered before the Royal College of Surgeons of England.

By T. HOLMES, F.R.C.S.,
Professor of Pathology and Surgery.

LECTURE V.—June 12th, 1872.

SUBCLAVIAN ANEURISM (*concluded*).—ABDOMINAL ANEURISM.

THE following points were proved regarding subclavian aneurism in the last lecture; viz., that such aneurisms are usually of small size, of tubular form, and connected with extensive disease of the artery on the proximal side; that the Hunterian operation rarely succeeds even on the third part of the artery, and has never been successful on the first, and that some more profitable treatment must therefore be sought for; that, in some of the cases where the first part of the artery has been tied, the second part might possibly have been secured; and that compression, which has been occasionally used with success, deserves a more extensive trial. It remained now to consider the more dangerous plans of galvano-puncture and manipulation. The history of manipulation since its introduction by Sir William Fergusson was given; showing that in seven cases in which it has been used, five of them being cases of subclavian aneurism, a cure was effected in one of the subclavian and one popliteal, and in none was there proof of any serious mischief; from which the inference was drawn that the method was one which may be rationally used in the cases not amenable to the ordinary resources of surgery. The same may be said about galvano-puncture, which also has been used with success, although in the majority of cases the clot has proved unstable and has broken down again, and in one recent case death has occurred from embolism. Amputation at the shoulder-joint, it was considered, ought, in the present state of our experience, to be reserved for cases in which gangrene is either imminent or has set in.

ABDOMINAL ANEURISMS were divided into those which affect the abdominal aorta or its branches as high as the pancreas, those of the

lower part of the abdominal aorta, and those of the iliac arteries. It was remarked that all these aneurisms are susceptible of spontaneous cure; and that in other cases such aneurisms progress very slowly, a remarkable instance of which was related in the person of a well known Irish surgeon. An instance was also related of the consolidation of an iliac aneurism during confinement to bed, published by Mr. Joliffe Tuftell. Such instances show that surgeons should not be too eager to resort to dangerous methods of treatment, but should try first to effect the cure of the aneurism by internal treatment. This having failed, we must consider the surgical treatment of the above three classes of tumours. First, aneurism situated as high as the pancreas involves either the trunk of the aorta or one of its branches, usually the superior mesenteric. Those situated on the trunk of the aorta are inaccessible to any surgical measure except distal pressure or ligature. Distal pressure was used lately by Mr. Bryant in a case of aneurism at the root of the coeliac axis. The pressure produced death by contusion of the small intestine, setting up enteritis and peritonitis. A considerable amount of coagulum was found in the aneurismal sac. Still the ultimate cure of the aneurism, if the patient had survived, seems very doubtful; and the propriety of using this method can hardly be said to be established. Theoretically, there seems little probability of cure, since the collateral circulation must go on through the portion of artery involved in the disease. Nor does distal ligature hold out any hopes of cure.

The subject of mesenteric aneurism was next discussed. This is less uncommon than is generally supposed; and some examples of it were brought forward—one in a patient still under observation at St. George's Hospital, and others from pathological collections, etc. In some of these cases, the aneurism during life appears limited, rounded, and movable; and the idea might occur of treating it by the old operation of laying the sac open, the circulation being commanded by a tourniquet on the abdominal aorta. The specimens, however, showed that very commonly the tumour runs up by a flask-like prolongation under the pancreas into the trunk of the aorta, rendering such an operation impracticable, and rendering the application of pressure also very dangerous, from the probability of contusing the upper portion of the thin sac. There are, however, a few cases of mesenteric aneurism in which the tumour is more limited, and which would probably be curable by pressure; which plan of treatment ought, therefore, to be cautiously applied in any appropriate case.

The second class of abdominal aneurisms are those affecting the lower part of the abdominal aorta, and it was an aneurism of this sort which was cured by Dr. Murray of Newcastle in his original trial of compression. This is the only case in which it has been proved by dissection that an aneurism seated above the bifurcation of the aorta has been cured. Mr. Durham has published a case in which he believes that he has effected the same thing; but the patient is still living. A preparation and diagram from Dr. Murray's case were exhibited.

These cases show the feasibility of curing abdominal aneurism by rapid pressure under chloroform; but the propriety of attempting its cure by gradual pressure without chloroform ought not to be lost sight of, as originally suggested by Mr. Holmes, before the occurrence of Dr. Murray's case. This plan is free from the dangers of rapid compression, and might be trusted to succeed, though not very frequently.

The third class of aneurisms are *iliac*. It was in reference to these that Mr. Syme proposed to revive the old operation in the abdomen. The history of this proposal was given; and it was shown that some older surgeons—viz., Velpeau, Scarpa, Desault, and Roux—had proposed or applied the old operation in the axilla and in the groin. And Mr. Skey and Sir James Paget had operated in this way in rupture of the axillary artery. Mr. Syme, however, was no doubt original in his proposal to treat an iliac aneurism in this way; and his partial success in the operation which he performed was rendered possible by his employing the aortic tourniquet. Sir Astley Cooper had, it is true, attempted to carry out the same operation, having the aorta compressed by two assistants; but he failed to find the artery. The reasoning on which Mr. Syme based his proposal assumes that in every aneurism there is a definite point at which the artery opens into the aneurism, that the sac travels along the arterial wall, and that the portion of the wall of the artery thus included in the aneurismal sac is healthy. On the other hand, Mr. Henry Lee asserts that in the majority of aneurisms there is no such definite point of communication, and that an attempt to operate in the manner prescribed by Mr. Syme would usually terminate in a failure such as occurred to Sir Astley Cooper from that very cause. This question has to be discussed in the next lecture.