

to determine what was best to be done, especially having in view the probability of his kidneys and ureters being also involved. A free median incision into the bladder, such as I have described, seemed to offer the best solution with the least risk. Further, should the strictured urethra prove such as to render a permanent median perineal opening desirable, this could be provided for by the median operation. On March 29th, Dr. Paul Rodet, of Vittel, and Dr. Wilson, of Boston, U.S.A., being present, the patient was etherised, and the stricture divulsed so as to allow the passage of a medium-sized grooved staff into the bladder. He was then placed in the lithotomy position, when I performed a median urethrotomy, and extracted a uric acid calculus about the size of a cobnut, which was wedged in behind the stricture. I then slit up the floor of the membranous urethra, including a mass of cicatricial tissue which constituted the stricture. Passing my finger on into the bladder, I then divided the somewhat large prostate directly backwards with a curved probe-pointed bistoury from within outwards, completing my incision to the utmost limits of the prostatic capsule by the pressure of my index finger. In this way I had made an opening into the bladder in the median line which would readily admit my three fingers. Forceps were then passed into the bladder, and I extracted two calculi, one uric acid and the other phosphatic, about the size of cobnuts, and in addition a considerable quantity of soft, putty-like phosphatic incrustation. No vessels were tied, and the patient certainly did not lose an ounce of blood, an object which I was desirous of obtaining. I could have removed through this opening, with ordinary lithotomy forceps, a hard stone of at least six ounces in weight. As a precaution against any bleeding following, a large double drainage tube was introduced, and the wound in the perineum above and below it closed with sutures so as to make the tube fit with some tightness. The patient was then removed to bed, the whole of the proceedings only occupying a few minutes. The patient's convalescence has been uninterrupted, and on April 10th he commenced to get up and move about. The urine for the first eight days was passed incontinently by the wound, the drainage tube being removed on the third day. On April 14th he was able to go out for exercise, as control over the urine, though almost entirely passed by the perineal wound, had in a great measure returned. I think it is extremely probable that the perineal opening will have to be retained as a permanent vent for the urine, as the condition of the urethra in front, from long-standing stricture, is unpromising. A medium-sized whip bougie is passed daily along the whole length of the urethra. Apart, however, from this consideration, the case may be taken as fairly illustrating this method of operating and the circumstances under which it might be undertaken. Here it was the only way of getting over the difficulties I had to face without exposing the patient to far more serious risk.

As already stated in the columns of THE LANCET,³ I have no reason whatever to find fault with the operation of lateral lithotomy. I have now practised it considerably over one hundred times, with no mortality in children, and with a death-rate in adults of about one in twelve. On the other hand, understanding why lateral lithotomy can never be regarded as universally acceptable, I think it is desirable that we should be provided with efficient alternatives.

Liverpool.

THREE CASES OF SUPRAPUBIC LITHOTOMY.

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FOR the purpose of contributing to the number of modern cases of suprapubic lithotomy, I have written out the following notes, and added a few remarks suggested by my experience.

CASE 1.—J. H —, aged fifty-one, a publican from Oldham, was sent to me in June, 1884, by Dr. Lacey, suffering from stone in the bladder. He declined operation. The following month he again called and produced a small calculus which had been expelled per urethram, stating that all his symptoms had immediately disappeared. Albumen,

which had been present in the urine formerly, was now absent. I neither saw nor heard anything of him again until Jan. 29th of this year, when he was again sent to me by Dr. Lacey. I observed a very marked change in his appearance. From being a fine, stout, and powerful man, he had become flabby and feeble, short of breath, and affected with a hacking troublesome cough. He had all the characteristic symptoms of stone in the bladder, with almost constant desire to micturate. He was admitted into the Surgical Home, Greenheys, on Feb. 3rd, 1886, and three days afterwards an unsuccessful attempt was made to crush the stone; for although the calculus was easily and frequently grasped by the largest and most powerful lithotrite, it was evident that the instrument was not constructed for so large a stone, as the screw gear did not come into action when the blades were fully separated. It was decided to postpone any further operation for some days, and in the meantime decide between the merits of perineal and suprapubic lithotomy. On the evening of Feb. 9th, he contracted a chill whilst returning to bed after a hot bath, and on the following morning when we (Mr. Southam, Dr. Lacey, Dr. Thorburn, and myself) assembled to operate, his temperature registering 102°4', a further postponement of the operation was naturally our first determination, but this was finally abandoned. Suprapubic lithotomy having been decided upon, the operation was conducted in the following manner:—The patient was placed on the table in a horizontal position and the A.C.E. mixture administered. The pubes were shaved. A No. 12 silver catheter was introduced into the bladder and the urine withdrawn; twelve ounces of a weak solution of boracic acid were injected into the bladder and the catheter withdrawn, and the base of the penis ligatured with a soft No. 8 elastic indiarubber catheter. An indiarubber bag, capable of holding sixteen ounces of fluid, well lubricated with vaseline, was introduced into the rectum above the sphincters and injected with twelve ounces of water. An incision was made in the median line of the abdomen, commencing three inches above and terminating at the upper border of the symphysis pubis. A dissection was made between the recti, and through the transversalis fascia down to the perivesical fat, and this separated, the handle of a scalpel being principally used for this purpose. At this stage of the operation some doubt was entertained as to the identity of what was supposed to be the bladder, which had in reality ascended into the wound and overlapped the symphysis; this, however, was immediately corrected by the reintroduction of the catheter, without allowing any fluid to escape, and by projecting the beak above the symphysis. The catheter was removed, and the ligature again tightened. The bladder was then punctured, without, unfortunately, first taking the precaution of securing it, either with a pair of forceps, or, still better perhaps, with two ligatures passed at suitable intervals through the entire thickness of the presenting surface. This was an oversight which ought never to have taken place, as all the fluid commenced to stream out and the bladder to collapse and sink out of sight, and it was with no little uncertainty the bladder was again picked up and the puncture found. Had the finger instead of the eye been relied upon under the circumstances, it is conceivable that lamentable results might have ultimately followed through detaching the cellular tissue surrounding the neck of the bladder in the endeavour to recover the lost opening, which would have afforded every facility for the infiltration of urine. Having recovered the bladder and secured the opening with artery forceps, scissors were introduced, and by expanding the blades the incision was enlarged longitudinally, sufficiently to admit one and then a second finger. The stone was at once felt and easily removed by means of an ordinary pair of lithotomy forceps. After the bag in the rectum had been removed the operation was completed. Nothing further was done or required, in a surgical sense, during the nine days the man lived. The urine, which was copious, escaped through the wound and was absorbed by pads of absorbent wool conveniently arranged below the wound. No excoriation followed or threatened. No urine passed by the penis, and neither catheter nor drainage tube was used after the first few hours. The patient, who was almost doomed to succumb from the commencement, died from double pneumonia, which was evidently in the incipient stage prior to the operation. The stone was composed of uric acid. It weighed 3½ oz., and measured 2½ in. by 2 in., or 7½ in. in circumference.

CASE 2.—J. W —, male, aged forty-two, was admitted to

³ April 10th, 1886.

the Manchester Royal Infirmary on Dec. 8th, 1884. He is a healthy-looking but slightly made man, and gives a good account of his family history and general health up to twelve years ago. Since then he had frequent attacks of renal colic, which had, however, usually yielded to ordinary methods of treatment. Eighteen months ago he first experienced pain at the end of the penis, and he passed some gravel. Since then there have been occasional attacks of renal colic, and he has passed gravel on several occasions. He has also been troubled by frequency of micturition, which often disturbed him six or seven times in the night. His pain has always been aggravated by any shaking. During the last nine months he has often had hæmaturia. There have been no symptoms of cystitis. On admission, he complained of the above symptoms. The urine was acid; sp. gr. 1015; it contained no albumen and no deposits. The bladder was explored by a Thompson's sound, and a stone was found, the longest diameter of which appeared to be about three-quarters of an inch. On Dec. 12th, 1884, the operation of left lateral lithotomy was performed in the usual manner, the only difficulty encountered being in the extraction of the stone, which was oblong in shape, being about $\frac{3}{4}$ in. long and $\frac{1}{2}$ in. broad. No tube was introduced into the wound. The only incident in the progress of the case was that the wound became filled with blood clot, remaining in this condition for some forty-eight hours, and necessitating the use of the catheter to relieve the bladder. On the second day urine commenced to flow through the wound, and thereafter continued to do so. The wound healed well, and when the patient went home on Jan. 5th, 1885, was almost healed, although a small quantity of urine still came through it. This soon ceased after his return home, and he remained well. He was readmitted on March 31st, 1886, complaining of shooting pains in the glans penis and perineum, especially at night or during exercise, this pain being most intense for about five minutes after micturition. During the act of passing urine there was frequently sudden stoppage with pain, but the flow soon recommenced. Exploration of the bladder showed the presence of a stone, and on rectal examination there was found considerable enlargement of the prostate. The patient was much weaker than when last admitted, and looked thin and worn. On April 2nd I attempted to perform the operation of suprapubic lithotomy, in the presence of Mr. Chiene of Edinburgh, Mr. Lund, and the members of the surgical staff of the Manchester Infirmary. On attempting to pass a catheter into the bladder with a view to injecting it, the instrument entered a false passage, and all attempts to introduce it proved futile. Being unwilling to abandon the operation, I placed one of Sir H. Thompson's bags in the rectum, which was distended with ten ounces of water. A vertical incision, three inches long, was now made in the linea alba, over the pubes, and the structures being dissected down to and through the fascia between the recti, the bladder was sought for. As, however, it was found impossible to define this organ without running a great risk of injuring the peritoneum, the completion of the operation was postponed, the wound being thoroughly dusted with iodoform and left open. The wound continued healthy, but the patient suffered much from pain in the bladder, owing to his cystitis, for which was prescribed a mixture of hyoscyamus, buchu, and liq. potassæ. The pulse was very rapid, irregular, and so weak as to be at times scarcely perceptible. On April 10th, eight days after the first attempt, the patient was again placed under chloroform, and an attempt made to introduce a catheter into the bladder. This again failed, but after some trouble a ferret was passed, and a catheter, having an eye at the extremity, was slipped in over it. The bladder was then injected with six ounces of boracic lotion, and the rectum distended as before. The divided structures being held aside, the bladder was now, without difficulty, seen presenting in the wound, and was secured by passing through it on each side a ligature held in a handled needle. Between these the bladder was opened with a knife and a director, and the finger and then a pair of lithotomy forceps introduced, and the stone grasped and extracted without difficulty. The wound was left open, dusted with iodoform, and plugged with absorbent cotton wool, which was changed every half hour. No catheter was placed in the urethra, nor a tube in the wound. The wound remained absolutely healthy-looking, the urine which came through it being absorbed by the cotton wool. The patient's weakness, however, increased, the pulse being always rapid, weak, and irregular, often imperceptible. Stimulants were administered a week after the

operation; then a low form of delirium set in, with much restlessness. This delirium continued almost constantly for a month, but eventually passed off entirely. Urine came away entirely by the wound until May 1st, three weeks after the operation, when, for the first time, some passed per urethram. After this the wound began to close up rapidly, and was entirely closed by May 16th. On the 27th the patient was discharged well, and has since reported himself as in good health.

CASE 3.—J. M.—, male, aged fifty-three, came under my care about the end of April, 1886, giving the following history. In August of last year he had several rigors, followed by the discharge of dark brown urine with frequent micturition and pain at the umbilicus. He was then attended by Mr. Cartmel. Occasional hæmaturia continued, and especially after any jolting there was pain at the umbilicus and passage of blood in the urine, but never any pain in the bladder or penis. On one or two occasions there was, during micturition, a sudden stoppage in the flow, causing much straining and pain. When I saw the patient I found a stone in the bladder, and attempted to perform lateral perineal lithotomy, but without success, owing to the depth of the perineum rendering it impossible to reach the calculus. With a view to performing suprapubic lithotomy, I admitted him to the Manchester Royal Infirmary on May 22nd. On admission he presented the same symptoms as before the first operation a week previously, and he had, of course, an opening from the perineum into the urethra. The general condition was very good. The operation was performed on May 23rd. On examination the bladder was found to be unusually large, dulness extending to within two inches of the umbilicus. Neither the bladder nor the rectum was distended. A staff was introduced into the bladder (through the perineal wound) and its point rendered prominent just above the pubes. An incision $2\frac{1}{2}$ in. long was then made in the middle line above the pubes, and carried down until the bladder was exposed on the end of the staff. It was here torn open, and the small opening thus made enlarged by stretching with the fingers. There was then no difficulty in introducing two fingers and seizing and extracting the calculus, which was encysted in a pouch in the anterior wall. The stone was uric acid, oval in shape, flattened on the sides, and about $1\frac{1}{2}$ in. long by $\frac{3}{4}$ in. wide. The wound, which gaped considerably, was left open and painted with a mixture of compound tincture of benzoin and an ethereal solution of iodoform, then dusted with iodoform and stuffed with iodoform gauze. The patient was allowed to lie on his back, the whole of the lower part of the abdomen being covered with absorbent cotton wool, which effectually soaked up the urine as fast as it came through the wound, so that no irritation of the skin was caused. On June 4th urine ceased to flow through the perineal opening, but still came freely from that above the pubes. On June 9th the urine was found to be alkaline, and there was a phosphatic deposit on the surfaces of the wound, which gave some trouble, and which was met by the internal administration of ammon. benzoas, with local use of dilute hydrochloric acid. From this date the patient's condition became gradually worse. The urine remained alkaline, and he developed the "typhoid" symptoms of surgical kidney. During August he complained of pain in the left shoulder, probably pyæmic. The temperature was high and irregular. To the end all urine passed by the wound, the flow per urethram never being re-established. The patient died on August 31st.

Remarks.—The fact that two out of the three cases of suprapubic lithotomy recorded proved fatal must not be regarded with undue prejudice against the operation. I am satisfied that in Cases 1 and 2 the patients would have died whichever operation had been selected. The size of the stone in the first case left no alternative, and in the third case suprapubic lithotomy was only resorted to after perineal lithotomy had failed. A practical lesson can be learned from Case 2. The man had undergone perineal lithotomy two years previously, and his recovery was complete in nineteen days, whereas after suprapubic lithotomy forty-eight days were required to gain convalescence. The three cases illustrate three conditions which render suprapubic lithotomy the only operation available: the large size of the stone in one case, an impediment to the introduction of a staff in another, and an encysted calculus in the third. During the last two years I have had an unusually large number of patients suffering from stone in the bladder, and these are only instances in which I have felt warranted in adopting the suprapubic operation, as I am

at present quite satisfied with the success which I have had during twenty years' practice from perineal lithotomy and litholapaxy. I regard rectal distension as quite unnecessary, and not unattended with danger; in Case 1 the use of the rectal bag was followed by profuse hæmorrhage and subsequent muco-purulent discharge. Pending much stronger evidence than that which has hitherto been advanced in favour of the high operation, I shall continue to crush all stones capable of being crushed both in males and females, either in youth or adult life. I shall perform perineal lithotomy in cases not amenable to crushing, unless associated with some complication rendering it impossible to complete that operation, and I shall reserve suprapubic lithotomy for such cases, and for stones estimated to exceed three ounces in weight. These conclusions will, I believe, be generally shared by surgeons who have had large experiences in the various operations for the removal of vesical calculi.

Manchester.

RESULTS OF CICATRISING PROCESSES IN THE NEIGHBOURHOOD OF THE PORTAL FISSURE.

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It is well known that structures which derive their blood supply from vessels that pass through a cicatrix, or that traverse the area of a cicatrising process, are liable to undergo atrophy, and that this is due to the contractile property of the cicatricial tissue causing narrowing and diminution of calibre of the supplying vessels. The facts have been observed on the surface of the body, and, indeed, have been turned to good account in some instances in the practice of surgery. But it is not so generally recognised that similar secondary results may under certain circumstances follow cicatrification occurring in internal parts, and prove serious drawbacks to the healing process. The events that take place here, and their relation to one another, are out of the sphere of direct observation, and the opportunity of tracing them by other methods is comparatively rare. Conceiving that the two cases about to be related afford such opportunity, I propose in this paper to invite attention to the subject, and to submit some pathological considerations in connexion therewith.

In the case of a small superficial ulcer of the stomach, the loss of mucous membrane at the spot with a trifling scar remaining is about the worst evil that can ensue. But it is far otherwise with a large, deep, and long-standing ulcer occupying the usual situation of the "chronic ulcer of the stomach." Besides stenosis of orifices, deformity of the organ is commonly noticed by writers as resulting from the cicatrification of such an ulcer; it is rather with indirect, but not less important, results of the same that we are now concerned. It has happened to me in the course of my hospital practice to have a case of the latter class repeatedly under my care during a period of nine years extending from the first commencement of symptoms to the fatal termination, and then inspection of the anatomical condition was obtained. The following is a summary of the clinical history.

The patient, A. M.—, was a lady's maid, aged thirty in January, 1866, when she was first admitted into hospital. She was moderately tall, of slender figure, and of pale complexion; she had two phthisical brothers, but said that her own health previously had been good. She had been suffering for three weeks from constant and severe vomiting after food, and from pain at the epigastrium, which was relieved, but not removed, by the vomiting; there was tenderness on pressure in the same locality. Her pulse was small and weak, her tongue pale and moist, her bowels sluggish, and her catamenia scanty. Under absolute rest, restricted diet, and nitrate of silver in half-grain doses, with a blister to the epigastrium, and an occasional enema, the symptoms speedily subsided; and with the substitution of iron and hydrocyanic acid, and a more liberal but still regulated diet, she made good progress, so that in the April following she was discharged "convalescent." In September, 1868, she was readmitted. She stated that shortly after she left the hospital she had a return of the symptoms, had to give up her situation in consequence, and had not been

well since. The epigastric pain was very severe, and disturbed her sleep. Her catamenia had been absent for three months. She was put upon similar treatment. She vomited only two or three times during her stay, the pain subsided, the catamenia reappeared, and she was discharged convalescent in the ensuing December. She now had some months of comparative, though not entire, freedom from complaint, and resumed domestic service. In the autumn of 1869 she caught cold at a catamenial period, whereupon this function became completely suppressed. The epigastric pain returned, and she soon began to lose flesh and strength. She attended as an out-patient, but, no benefit accruing, she was admitted into the wards again in May, 1871. She was now in a much more pronounced state of anæmia than heretofore. Epigastric pain, increased after food and disturbing her nights, was still her chief trouble, and there was the local tenderness on pressure as before. Omitting on this occasion the nitrate of silver, she had iron given her at once, and solution of sulphate of atropine was used hypodermically as an anodyne. She soon responded to this treatment, gained nearly a stone in weight in six weeks, and went out convalescent in July following. In February, 1872, she returned, stating that three weeks previously she had vomited blood to the amount of one pint. She was very anæmic, and there was marked exacerbation of the old symptoms. Her catamenia had now been absent for sixteen months. The sickness increasing, in spite of the treatment which succeeded on the preceding occasion, she was given nitrate of silver again in half-grain doses, and with good result. On resuming the iron, flying blisters were applied to the epigastrium and dressed with morphia ointment. Although bad fits of epigastric pain not unfrequently recurred, and she had now and then sickness, her appetite increased, she began to get up a little, she improved considerably in looks, and in April following was discharged relieved. Her history for the next two years and upwards was one of attendance off and on as an out-patient. She was admitted into hospital for the fifth time in September, 1874. Her condition at this date was urgent; her pallor and emaciation were both alike conspicuous. She had had a short time previously a recurrence of vomiting of blood; her pain in the epigastrium, increased after food as before, went right through to her back and interfered greatly with her sleep; she generally vomited after her meals, though at various intervals, and this brought a little ease. The existence of considerable dilatation of the stomach was now detected, and the vomited matters were found to contain sarcinæ. There was no response to treatment that formerly succeeded, nor to some other that was tried. Hypodermic morphia as an anodyne, with or without atropine combined, gave but very temporary relief. She was almost incessantly harassed with pain and sickness. On Oct. 16th she vomited dark grumous matter in which red blood discs were abundant. There were some little fluctuations in her condition afterwards, but on Oct. 30th she had similar hæmorrhagic vomit with melænic stools, and, this persisting, she gradually became exhausted, and died on Nov. 1st.

Necropsy, thirty-three hours after death.—The stomach was found occupying the area traced out upon the abdominal parietes during life. It had several adhesions. First, it was inseparably adherent at the small curvature to the under surface of the right lobe of the liver by dense opaque neoplastic tissue, which occupied for the most part the small omentum. Another adhesion was to the pancreas and duodenum in its inferior transverse portion; and a third was to the left kidney, where also a very dense fibro-cartilage-like layer was present. There were slight adhesions to the spleen and to the diaphragm. The stomach at the same time exhibited a well-marked hour-glass contraction. The effect of the latter, as appeared on laying open the interior, was to convert the pyloric segment into a separate sac, which was entered by a quasi-orifice of about the size of a crown-piece. A large irregular stellate cicatrix was discovered at the spot near the small curvature where externally was the dense adhesion to the liver; two or three small superficial ulcers were present near it. The mucous lining of this part was much puckered. At the fundus corresponding to the kidney adhesion was a large somewhat oval-shaped ulcer; it was between four and five inches in length; its floor was constituted of the peritoneal coat, shreddy debris of muscular fibre, and some vessels traversing it. Its margin showed no trace of any reparative action, nor did that of any of the smaller ulcers present. There were several little deposits of melanic pigment in the vicinity