immediately follow exercise, but only shows itself after some hours or even days.

CASE 9. *Renal uric acid calculus; exercise causing immediate pain and hæmaturia the following day; no blood-clots in the urine.*—The patient, a woman, aged fifty-eight years, in 1888 consulted Professor (now Sir) William T. Gairdner, who sent her to me. She had suffered from violent colicky pain in the right renal region for the previous six years. At first the attacks were slight, and were always brought on by some active exercise. They did not recur oftener than once in six or eight months, but latterly the recurrences of pain were more frequent, and were accompanied by hæmaturia; usually, however, the quantity of blood was small in amount and the urine cleared up very soon after the patient procured complete rest in bed. So long as she remained at rest the pain did not trouble her and the urine remained clear; but if she took active exercise it was certain to bring on an attack of pain, which was followed by hæmaturia in from eighteen to twenty-four hours. This delay in the appearance of blood was frequently observed. No blood-clots were seen in the urine at any time, and the urine passed at the onset of the attack and for several hours following was clear and of low specific gravity, from 1006 to 1008.

The circumstance that no blood-clots were seen in the urine seems to indicate that the non-appearance of blood in the urine till the day following the onset of pain was not due to obstruction of the ureter by coagulum. The most reasonable explanation of such cases seems to be that the irritation of the calculus in the pelvis or at the entrance of the ureter induced a reflex inhibition of the function of the affected kidney only, either by producing a spasm of the walls of the ureter, or contraction of the small renal arteries, and that this spasm passing off was followed by an undue relaxation of the capillaries, a passive hyperæmia and transitory hæmorrhage following. Most usually, unilateral obstruction, such as is produced by the presence of a calculus in one ureter causes reflex inhibition of both kidneys and complete anuria. Irritation of the uinary bladder, as manifested by frequent and sometimes painful micturition, is not an uncommon accompaniment of renal calculus—so much so that I have seen this disease mistaken for cystitis or suspected to be vesical calculus. This mistake is, however, more apt to occur when the renal stone has caused suppuration. On account of the intimate relationship which exists between the nerve-supply of the kidneys and that of the alimentary canal, hæmaturia and renal pain, especially if intense, are accompanied by more or less gastric disturbance, varying in degree from the mildest attacks of nausea to the most violent vomiting of bilious matter, flatulence, and gastrodynia. When the renal calculus has given rise to or is associated with suppuration the symptoms are generally distressing and persistent. The amount of irritation in the kidney, in the renal pelvis, and in the ureters caused by a concretion depends largely upon its nature and situation. The rougher, heavier, and more freely moveable a calculus is, the higher will be the degree of irritation, as manifested by symptoms of pyelitis or pyonephrosis superadded to those of calculus. On the other hand, the effect of prolonged rest in the treatment of renal calculus is well recognised. The following case is a good illustration of it.

CASE 10. *Constant dull pain of four years' duration, occasional attacks of hæmaturia from the right kidney, sometimes very profuse after exercise; nephro-lithotomy advised but refused; the symptoms cured by rest in bed.*—A man, aged thirty-five years, consulted me at the Glasgow Infirmary and was admitted on Nov. 15th, 1892. Two and a half years prior to admission the patient was playing lawn-tennis, when he suddenly strained himself, and within a few hours he passed a large quantity of dark, mahogany-coloured urine, but this was not accompanied by any pain. Six months after this he had a recurrence of the hæmaturia, associated with an acute attack of renal colic, which, however, only lasted for a short time, but after the first attack he had recurrences both of the hæmaturia and pain every five or six weeks. On admission physical examination elicited no abnormal conditions beyond increased resistance in the right lumbar region. The urine was highly coloured, of specific gravity 1028, acid, containing a deposit of mucus and a slight trace of albumin, but no blood or pus. Four days after admission the patient had an acute attack of hæmaturia and of severe pain which lasted from 6 A.M. till 9.30 A.M., when he was placed under chloroform and the bladder was explored with the cystoscope. The examination revealed blood issuing from the right ureter in small quantity, and the orifice of the ureter was occupied by a clot. The circumstances of the case seemed to warrant a diagnosis of renal calculus and the patient was advised to have it removed by operation. This, however, he refused, and so complete rest in bed was ordered. The patient was kept at absolute rest for four weeks, and during that time he had no recurrence of the pain or of the hæmaturia. He remained in bed for other six weeks after leaving the infirmary, and on March 21st, 1897, he reported that he had had no recurrence of the pain or the bleeding since he left the hospital on Dec. 16th, 1892.

(To be continued.)

TWO CASES OF OBSTRUCTION BY BAND; THE ONE CHRONIC, THE OTHER ACUTE.

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EACH of these cases had special features of interest which seem to make them worthy of record—the first by reason of the position, strength, and exceeding tenuity of the obstructing band, and the second because of the unusual amount of blood-stained peritoneal effusion and the acutely dangerous condition of toxæmia from which the patient was rescued. I am indebted to Mr. F. W. Summer for the notes of the first case which was that of a married woman without children, who was admitted to St. Mary's Hospital on Jan. 15th, 1896. She had previously been treated by Mr. Archer Wood, of Dulwich, from whom it was learned that four years before she had been under his care for a month suffering from some difficulty in the action of her bowels, with occasional passing of a small quantity of blood. The attack, however, ceased, and until within three months of her coming to the hospital she had continued well. The same symptoms then returned. She had through life been healthy and had never to her recollection been laid up with any abdominal disorder. A well-nourished woman, thirty-eight years of age, as far as appearances went she had nothing the matter with her and her aspect was altogether unlike that of a person suffering from malignant disease. There was no abdominal distension, but invariably before action of the bowels she suffered somewhat severe pain to the left of the umbilicus which was relieved by firm pressure with her hand, a manœuvre which experience had taught her was of use in securing action of the bowels. Evacuation of the bowels was thus always a matter of pain and difficulty, but she had no vomiting and beyond a little mucous discharge and slight laxity of the motions there was nothing to call for special remark. Nothing was to be felt *per rectum* and the result of abdominal examination on Feb. 1st under an anæsthetic was equally negative. Anxious herself to be quit of the trouble and in the belief that there must be some cause of partial obstruction in the lower bowel which could in all probability be relieved, exploration was resorted to on Feb. 5th. The abdomen was opened in the left linea semilunaris and an inch or so above the termination of the descending colon there was seen to be a deep sulcus which on closer investigation was found to be produced by a band running transversely across the gut. The finger-nail was passed under it with the object of tearing it, but this proved impossible, for the band was stretched across the bowel with the tightness of a violin string and the knife was necessary for its division, when it snapped with a distinct twang. There were no other bands or adhesions in the neighbourhood and no light was thrown on the origin of this peculiarly tense, unyielding cord. It must, however, have been a thing of old formation and in all probability had its beginning at the time of her first short illness four years before. The affected region of the gut was free from congestion or structural change. It had no mesocolon. The result of the operation was to rid the patient immediately of all her symptoms, and from inquiry in the course of the present year we learned that she had enjoyed good health since leaving the hospital on March 10th, 1896, the

wound having then soundly healed. It is difficult to surmise what may have been the precise origin of this unusual band, for there had been no history of pelvic trouble and the band itself lay entirely outside the pelvis. I have never seen an abdominal band at all as firm as this, and it was a fortunate event for the woman that it was divided before the bowel had been itself damaged. The history shows how indefinite and obscure were the symptoms and how operation alone could have relieved them. So fine, however, was the band, that had it not been for the sulcus in the bowel it might perchance have been missed—an accident which I know to have occurred in another case with somewhat like symptoms, unfortunately postponing thereby a second operation for the relief of complete obstruction until it was too late. The practical lesson to be learned from the case is thus sufficiently obvious.

CASE 2.—This case was one of the most acute obstruction with symptoms of extreme urgency. A man, aged fifty-nine years, was admitted to St. Mary's Hospital on March 8th, 1898. On the early morning of the 7th he was seized with great pain at the umbilicus while at stool—pain which rapidly became so much worse that he was obliged to leave his work and send for a medical man. In the afternoon he vomited frequently. After 10 A.M. he passed neither fæces nor flatus. On admission to the hospital at midday of the 8th he had a most anxious, ghastly expression; his face and lips were blue, his mouth was parched, he had intense griping pains all over the abdomen, he was well-nigh pulseless, and was almost continuously sick. The abdominal wall was rigid, but there was no marked distension. Nothing could be felt on palpation. The nature of his symptoms admitted of no doubt and he was taken at once to the theatre. The abdomen having been opened in the middle line, systematic examination of the bowel from below upwards ultimately led to the discovery of a coil of jejunum some six inches in length, of a deep plum colour, constricted by a fine band three or four inches long, and running from omentum to omentum. It was easily torn through with the finger and did not bleed. Flatus immediately passed onwards into the empty gut below. The coil of ensnared bowel was smooth and free from lymph—there was indeed no effusion of lymph anywhere—and there was no fear that it would not perfectly recover itself. So much and no more would have been necessary in the way of operation had not the peritoneal cavity contained a large quantity of blood-stained serum—so much, in fact, that it was deemed absolutely essential to remove it, and this was forthwith done by washing out the cavity with a saline solution. Just as a hernial sac is sometimes found to contain blood-stained serum when bowel has been strangulated within it, so here the peritoneum took the place of a hernial sac into which unusual quantities of blood-stained serum had been effused. The wound was closed in the usual way, and thereafter the patient made steady progress to recovery. His course throughout gave little or no anxiety; the vomiting soon ceased and his bowels were in due time moved, his only trouble being the most intense thirst for three or four days after the operation, due in no small measure, it may be conceived, to the loss of fluids both by the vomiting and the peritoneal effusion. He was discharged on May 5th. For the notes of this case I have to thank Mr. Hussey.

The operation was in this case singularly free from difficulty because of the fact that the constricted bowel was high up and the greater portion of small intestine was flaccid and empty. But the site of the strangulation no doubt determined the initial severity of the symptoms, which in their turn contributed to that which was the most prominent feature in the case—the extraordinary amount of peritoneal effusion. This, again, in turn conduced to the serious condition of the patient, which was clearly one of acute toxæmia from which death was imminent. The peritoneum presented none of the grosser visible signs of peritonitis, but the man was nevertheless dying, surely not from the mere fact that a short length of bowel was ensnared by a band but because doses of poison developed in his own peritoneum—and in all probability of the most virulent kind—were being rapidly absorbed into his system. There was never a more striking case. "There is about the patient who is dying of peritonitis every suggestion of a poisoned man. He lies in bed prostrate, with gaunt cheeks and sunken eyes. There is a look of unceasing anxiousness in his face and a sense of hopeless unquiet in his movements. The hands, which wander with pathetic restlessness over the bedclothes, are cold and damp. The tongue is that of a man who is dying of thirst. There is constant vomiting. The breathing is laboured and accompanied with faint sighs and groans, and the countenance is ashen and livid." This is the picture drawn by Treves in his lectures on Peritonitis,[1] and it is eminently suggestive of death by poison. To clear away the source of the poison in the peritoneum must, then, be the surgeon's aim, and it may with truth be said that there is probably no condition in which it is so essential to wash and cleanse the peritoneal cavity of any effusion there may be in it, or in which it is so necessary to disregard, and not be misled by, the absence of the grosser indications of "peritonitis" if the best is to be done for the patient in a case like this at the time of operation.

THE VALUE OF ANTI-STREPTOCOCCIC SERUM IN THE TREATMENT OF SOME PATHOGENIC INFECTIONS.

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SO many conflicting statements have been made in the medical journals of late regarding the efficacy and real value of anti-streptococcic serum that I determined to give it an extended and thorough trial in those diseases which were found on examination to be due to infection by the streptococci. In THE LANCET of Feb. 19th, 1898, I recorded a case of puerperal septicæmia in which the patient's life was, in my opinion, saved by this treatment and I then sounded a note of warning against the indiscriminate practice of injecting all cases of septic infection with this powerful remedy. From the very nature of things the serum can only be of service in streptococcal infections and ought never to be used until either the microscope or bacteriological examination has shown streptococci to be present in the blood or discharge. The cases under my care in which the serum has been used are 11 in number—namely, 4 cases of puerperal septicæmia, 2 cases of septic cellulitis, 2 cases of mastoid disease with septicæmia, 2 cases of erysipelas, and 1 case of puerperal sapræmia.

CASE 1.—A married woman, aged twenty-two years, a primipara, was admitted to the infirmary on Oct. 31st, 1897, suffering from puerperal septicæmia. She had been delivered 15 days previously, having been attended by a midwife. The patient's temperature was 106° F. and the pulse was 146. She was quite unconscious and wildly delirious. I curetted the uterus, removing a large quantity of placenta and stinking débris. On examination of this it was found to be swarming with streptococci which were also found in the blood. Injections of serum (20 c.c. as a dose) were given at intervals with marked effect. The temperature was reduced, the delirium abated, the patient became conscious, and the pulse was reduced in rate and altogether much improved. In all she had 60 c.c. of serum in four injections and made an excellent recovery.

CASE 2.—A woman, aged thirty years, was admitted to the infirmary on Nov. 8th. She had been confined of a stillborn child on Oct. 28th, having been attended by a midwife The labour was prolonged, lasting a week; 3 days later she became delirious. On admission the temperature was 103° F. and the patient had all the symptoms of puerperal septicæmia. Microscopic examination showed that streptococci were present both in the blood and in the discharge from the uterus. On Nov. 25th the patient was put under chloroform and the uterus was scraped out and 10 c.c. of serum were injected; the temperature dropped to 101° and she felt much better. She, however, developed septic pleurisy and died on Dec. 5th.

CASE 3.—A girl, aged fifteen years, was admitted to the infirmary on Dec. 30th, 1897, with a high temperature (105° F.), loss of consciousness, and acute delirium. She had a purulent discharge from the left ear and all the symptoms of mastoid abscess with meningitis. On the 31st the mastoid antrum was cleared of a lot of offensive pus and I made a free communication between the middle-ear and external

[1] Lettsomian Lectures, 1894, p. 8.