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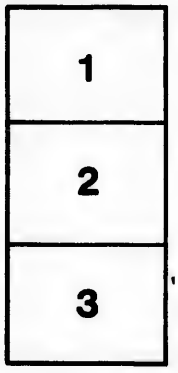

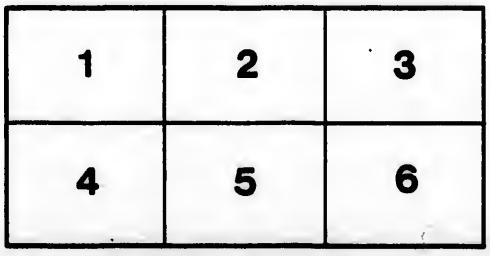

Rare Bell. J.

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RARE FORMS OF URINARY EXTRAVASATION.

By James Bell, M.D.,
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(*Read before the Medico-Chirurgical Society of Montreal.*)

Mr. President and Gentlemen—I wish to bring before you to-night the reports of two cases in which urine became extravasated in unusual situations, and in each of which it pursued an unusual course. (These cases have nothing in common beyond the occurrence of this accidental condition.)

Case I.—H. R., aged 32, was admitted to hospital on the 3rd of September last suffering from retention of urine. He was a sailor and had suffered from stricture for fifteen years, and had received treatment for it at different times in marine hospitals in all parts of the world. For years he had carried with him a No. 2 silver catheter and an ordinary wire stilette, with which he relieved himself when retention occurred. When he appeared at the hospital he stated that he had been four weeks in port and had been drinking heavily all the time, and that he had been obliged to relieve himself with his No. 2 catheter several times, but that for twenty-four hours he had not been able to pass any water, and had also failed to introduce either the catheter or the stilette, both of which he had tried. The house surgeon, after some difficulty, succeeded in passing a No. 2 catheter (English) through a stricture situated in the penile urethra, just in front of the scrotum, and emptied his bladder. The patient was very ill at the time, however, and had a temperature of about 105°F. On this account I postponed operating upon his stricture until the 6th—three days later—and then, although his condition was unchanged, I performed an internal urethrotomy and dilated the

urethra to 34 (French). There was only the one stricture—that at the root of the penis—and no difficulty was experienced in the operation. As the stricture was so far forward, the rectum was not examined before nor at the time of the operation, although the patient complained of uneasiness about the neck of the bladder, which was at the time attributed to the prolonged retention. On the following day (the 7th) he was somewhat better, but complained more of pain about the anus. From the perineum there was considerable tenderness on pressure over the region of the prostate, but no swelling nor sign of infiltration. Urine passing freely. Temperature 102°F.

Sept. 8th.—Patient complained of diarrhœa; pain and fever persisting. No further examination was made until the 12th, six days after operation, when the rectum was explored, the patient being anæsthetized for this purpose. The anus was red and swollen, and on introducing the finger the rectum was found to be surrounded by suppuration, which separated it from the bony pelvis as far as the finger could reach and also from the sphincter ani posteriorly and laterally, so that the finger could be introduced between the bowel and the sacrum and ischia. The sphincter was then cut through posteriorly so as to allow a freer escape of inflammatory products and the cavity washed out with a warm sublimated solution. The washing was continued daily, and three days later a large piece of the rectum was found lying loose and completely separated, and was easily withdrawn. This piece of gut measured four inches in length and from an inch and three-quarters to two and a half in width, and consisted of the posterior and lateral walls of the gut from close upon the prostate on the left side around to the right side, but not reaching to the prostate on the right. Much sloughy cellular tissue also came away, and from this time the patient's condition rapidly improved until the 24th of October, when he left the hospital to join one of the outgoing vessels as an able seaman. The wound seemed to be quite healed at this time, the deficiency in the rectum being filled with cicatricial tissue. Defecation and micturition were normally performed, and the urethra admitted a No. 34 sound without difficulty.

There can be little doubt, I think, but that this patient, in passing the No. 2 catheter or stilette while drunk, must have wounded the neck of the bladder in or about the point of the prostate and behind the triangular ligament, and that the subsequent distension of the bladder forced a few drops of urine into the peri-rectal cellular tissue, which produced the ordinary results of urinary infiltration.

Case II.—In this case extravasation occurred into the pelvis from the reopening of a wound in the bladder which had been accidentally inflicted during the performance of an ovariotomy.

Mrs. L., aged 42, was admitted to the Montreal General Hospital on the 20th of September last suffering from an abdominal tumor which had been growing for twelve years, but which had increased rapidly in size during the last four months. Her general health was excellent. She had never had any pain, and suffered only from the inconvenience of the rapidly enlarging growth. Menstruation was regular and normal. On examination, the abdomen was seen to be enlarged to about the size of a full-term pregnancy. The tumor had evidently grown from the left side, and was round, smooth, painless on pressure, and only very indistinctly fluctuating at its most prominent point. Per vaginam, the uterus was freely movable. The diagnosis was a left parovarian tumor. The operation was performed in the usual way four days after admission, the patient being catheterized by the nurse before being brought into the operating-room. On tapping the tumor only a few ounces of fluid could be withdrawn, and it was seen to be a dermoid cyst containing the usual semi-solid sebaceous-looking material. The abdominal wound was enlarged and the tumor delivered entire. There were no adhesions except about the left broad ligament, from between the layers of which it had to be enucleated. When this process was being accomplished a broad vascular mass of adhesion was encountered, which it was thought wise to ligature in sections and cut with the scissors. This mass was to the left and partly in front of the tumor, and, unknown to the operator, contained a portion of the fundus of the bladder, which had been

carried high up into the abdomen by the growth of the tumor. In this way, therefore, the bladder was wounded, an incision about an inch long having been made into its upper and posterior surface with the scissors. This was immediately sutured with catgut after Lembert's method and the tumor removed. The operation was concluded, the wound closed and a dressing applied, and the patient made uninterrupted progress until the twelfth day. For the first four days a soft rubber catheter was tied into the urethra; from this time it was removed and passed every two hours. On the twelfth day the nurse (a new one) complained that she "could not get the catheter in far enough," and that the urine withdrawn had been bloody. The patient also complained that the passage of the catheter pained her. It was then ordered to be passed every four hours, and the bladder was washed out daily with a weak solution of salicylic acid dissolved with borax. Next day a small hard mass about as large as a marble was observed at the lower end of the abdominal incision, which was painful on manipulation. This mass remained without much change, and irritability of the bladder with fœtid bloody urine persisted. On the eighteenth day after operation the mass was found to have suddenly disappeared, but the patient complained of pain and tenderness over the left inguinal region and in the left loin. These symptoms, together with a marked diminution in the amount of urine withdrawn by the catheter made it clear that a general extravasation of urine had occurred into the left side of the pelvis. The patient was therefore anæsthetized and the abdomen opened through the lower inch of the original incision (over the site of the little hard mass which had first appeared). Urine flowed from this incision, and on exploring with the finger an opening could be felt in the fundus of the bladder which would almost admit the point of the little finger, while a larger sinus led down into the left side of the pelvis. Through this last a pair of long forceps was introduced and protruded into the left side of Douglass' fossa, when an incision was made into the vagina. A large drainage-tube was then drawn from the vagina through this opening and up through the abdominal wound and a large soft catheter tied into the urethra.

The whole cavity, as well as the bladder, was then thoroughly washed out with a solution of salicylic acid and borax, the wound freely dusted with iodoform. and a gauze dressing applied. The drainage was very satisfactory and the patient's condition immediately improved. The wound was irrigated and dusted with iodoform and dressed as above described daily. Four days after the incision sloughs of cellular tissue began to come away in enormous masses, and an incision into the loin was found to be necessary on account of a collection of sloughy tissue in that region. The sloughs were soon all removed, and about this time (fourteen days after incision) a dark jelly-like, fermenting substance came away from the wound in considerable quantity for a few days. It was odorless, and a careful microscopical and chemical examination failed to determine its exact nature. The bowels acted normally throughout. During the separation of the sloughs the patient suffered from severe sciatic pain and hyperæsthesia of both legs. These symptoms began on the left side, and were more severe and lasted longer on that side. By the 20th of October all these symptoms had disappeared, the wounds were looking healthy, the bladder wound was nearly closed, the use of iodoform, which had been of late greatly lessened, was now entirely discontinued, and the prospects of recovery were most encouraging. It is worthy of note here that until the sloughs began to separate there was no elevation of temperature whatever, and at no time was the temperature high or continuous, but from the onset of the bladder symptoms the pulse remained rapid—from 100–120. About the 1st of November an acute mania developed, and from this time, although the local conditions continued to improve, the patient had to be forcibly restrained. She refused food, and was in a state of maniacal excitement day and night, without sleep and with frequent involuntary evacuations, gradually and perceptibly sinking until the 9th of November, when she died; at the end of the eighth week after operation. Slight delirium at night and a peevish, nervous condition of the patient, especially while being dressed, had been observed for a few days before the violent maniacal symptoms set in. These latter lasted about eight days,

and were accompanied by very rapid emaciation. Unfortunately an autopsy could not be obtained.

This case presents many points of interest, and illustrates a chapter of accidents such as it fortunately seldom falls to the lot of the surgeon to report in any individual case.

(1) It emphasizes the necessity for instrumental exploration of the bladder by the surgeon before operating. It had heretofore been my practice to allow the nurse to catheterize the patient before bringing her into the operating room. This was done with the double object of shortening the period of anæsthesia and to avoid soiling the hands after having cleansed them for operation. Important as these matters are, however, they are not to be compared with the risk of wounding the bladder, which is occasionally carried high up into the abdomen on the surface of the tumor.

(2) It strengthens the evidence already existing to show that catgut is not to be relied upon as a suture to retain the contents of a hollow viscus. I may say here that from past experience I would not have used catgut, but that no suitable silk was at hand at the moment.

(3) The necessity for careful and thorough catheterization for at least two weeks after an accident of this kind is here shown.

Finally, with regard to the acute maniacal condition, which was the immediate cause of death, and which supervened when to all appearances the other difficulties had been overcome, I have two suggestions to make, viz., that it was due either to the toxic effects of iodoform or to the absorption of ptomaines or leucomaines from the urine retained and decomposing in the cellular tissue of the pelvis? The patient was a healthy, vigorous woman, with an excellent family history, and who had never suffered from any form of nervous derangement in her life. On the other hand, the use of iodoform had been practically discontinued for several days before the maniacal symptoms appeared, and the cavity had been thoroughly irrigated every day with a solution of salicylic acid and borax.

I need only mention here a third case, in which, during the

performance of an ovariotomy, a strong fibrous band connecting the surface of the tumor with the base of the bladder was stripped off from the latter tearing away its peritoneal covering over a small area. Nothing was thought of this at the time, and the patient made an excellent recovery; but two weeks after operation a small inflammatory mass appeared at the lower angle of the abdominal wound. This was thought to be a stitch-hole abscess, but on pressing it an amber-colored fluid exuded. A large soft catheter retained in the urethra for ten days not only gave immediate relief to the symptoms, but effected a complete cure.

The history of these cases shows that the necessity for early surgical interference where extravasation of urine has occurred within the pelvis, no matter how slightly or how gradually occurring, is as great or greater than for extravasation into the perineal tissues. Had I recognized the condition sufficiently early in case No. 2 of this series, I have no doubt but that I would have saved my patient.