convalescence, indicates probably mechanical interference with repair, attended by hæmorrhage. I have met with a few such cases as the following. A patient was the subject of a severe contusion of the side, followed by acute pain in the right hypochondrium, with collapse. On the third day he rallied, and these symptoms subsided, leaving him with a jaundiced skin; when he imprudently got up and made some effort, and suddenly had a recurrence of collapse, accompanied with great tenderness in the hypochondrium. From this relapse he rallied more slowly, and retained his sallow hue for a long time.

Extravasation of blood in the subserous areolar tissue around the kidney, is by no means uncommon, without laceration of the organ; but I apprehend there can be little doubt that lesion of the kidney itself does often occur without proving fatal. Limited bleeding from the kidney is a frequent consequence of contusion or pressure; and, when a transient symptom, proves nothing more than rupture of some vessels which pour their blood into the pelvis of the organ. But when the hæmorrhage is copious and persistent, or recurrent, accompanied by pain, and especially if followed by suppuration, there can be little doubt that a more serious injury has been inflicted. Of this class of cases I have many recorded; but I will refer briefly to only one or two. Thus, a painter, aged 37, was admitted into the hospital under my care, having been struck down and run over by an omnibus, the wheel of which passed across the abdomen in a direction obliquely upwards from the right groin. He was in profound collapse, without pulse, and his eyes were glassy. A catheter was passed, and a small quantity of bloody urine was drawn off. With slight reaction, constant sickness ensued, and much abdominal tenderness. On the fourth day the symptoms were somewhat improved, and blood was no longer mixed with the urine; but, on the following day, blood again appeared; the sickness continued, with intermittent abdominal pain, some distension, and great tenderness. These symptoms remained unabated for two or three days, the tension of the abdomen increasing with perceptible fluctuation; and he was delirious. But a clean, moist tongue encouraged me in adopting a more sustaining plan of treatment, and the patient slowly rallied, the symptoms gradually subsiding, but with occasional relapses; and he was convalescent in six weeks, though still pale and feeble.

In some instances, the blood is in sufficient abundance to clot, after it is withdrawn from the bladder. Sickness is always more or less persistently present in these injuries, and the lumbar pain survives the bleeding. Another symptom which I have noticed in some cases of kidney lesion I cannot account for satisfactorily: it is the presence of dulness on percussion, extending from the hypochondrium to the iliac fossa, and accompanied by tenderness, apparently, in the track of the ureter. It may possibly be due to subserous extravasation of blood.

The following is another case of the same type, but of a more complex character. I was summoned to see a gentleman whose horse had fallen with him in the hunting-field, and had crushed by partly rolling over him. He was carried home in a state of collapse: his suffering, which was severe, was referred to the left hypochondrium and loin. The contents of the bladder, when first withdrawn, appeared to be pure blood; and copious hæmorrhage continued for some days. At the expiration of about a fortnight, pus was substituted for blood, and continued to be mixed with the urine, in gradually diminishing quantities, for more than two months. This patient continued invalided for a long time, but ultimately recovered. One remarkable symptom in his case, and which lasted for some time, was the acute pain occasioned by eating, evidently attributable to the pressure or traction of the distended stomach; for it subsided as digestion was completed.

The appearance of blood in the urine, in suspected injury of the kidney, does not always follow the infliction of the injury immediately, but on the following day. I have not learned to attach any particular importance to this circumstance. Recurrent hæmorrhage, especially if the blood be fresh and bright in colour, is a more serious sign, as indicating the probable dislodgment of fibrinous plugs in the lacerated vessels; yet these cases may recover. Mr. Hilton has made some interesting and valuable comments, in the volume of the *Guy's Hospital Reports* for last year, on the form which clots assume, as diagnostic of the part from which they are derived. By floating them out in water, he has pointed out that they may be identified as to their source, coagula formed in the bladder being "somewhat irregular in outline, mostly circular flattened masses, bevelled off and fimbriated": they may thus be distinguished from those which form in the pelvis of the kidney, and such as take the tubular cast of the ureter. I think the character of the urine in some of these cases can be explained only by the supposition that clot deposited in the bladder is gradually dissolved in and passed with this excretion.

Rupture of the *spleen*, from contusion or pressure, is not infrequent; and, if extensive, is probably usually fatal from hæmorrhage. Yet, copious bleeding is not a necessary consequence of this injury; for, in

a patient recently under my care, who sustained this and other injuries, and survived for some hours, there was not more than two ounces of blood in the abdomen, though there was an extensive rent in the spleen. In one of my cases, a deep linear cicatrix on the convex surface of the spleen seemed to indicate the position of a former wound, but the patient died of a more recent injury.

I have on record but of one instance of laceration of the *pancreas*, which occurred in a lad who was the subject of other severe internal injuries, which speedily proved fatal. I am not acquainted with any special signs by which these two organic lesions can be identified; unless, indeed, the situation of the pain or the presence of dulness to an abnormal extent in the left hypochondrium, be regarded as suggestive of injury to the spleen.

The rapidity with which the adhesive form of inflammation occurs in injuries of the abdominal viscera, I have seen exemplified in many instances—plastic lymph glueing neighbouring portions of the peritoneum together, when the patients have not survived more than thirty-six, or even more than twenty-four, hours. But this result is very uncertain; and, so far as I have been able to observe, it bears no constant proportion to the acuteness of the symptoms or signs which are evinced during the period which elapses between the receipt of the injury and the death of the patient.

[To be concluded.]

ON THE TREATMENT OF ORGANIC STRICTURE OF THE URETHRA BY RUPTURE.*

By GEORGE H. B. MACLEOD, M.D., F.R.C.S.E.,

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In the following short paper, it is not my intention to enter at any length into the general subject of stricture of the urethra, its pathology, its various forms, and its numerous modes of treatment. My desire is simply to relate my own most recent experience of the use of Holt's dilator, in the management of organic stricture in the various degrees of intensity which are presented to one in hospital and private practice in a great city, such as Glasgow.

It may be said, in a sentence, that few if any affections met with by the surgeon are more distressing than that to which I now allude, and probably none which, in the great majority of instances, is more capable of being relieved, and for which we receive more gratitude when we succeed in putting them right. It is not alone the constant annoyance and anxiety the patient suffers, which render these cases so pressing on the surgeon's attention, but the knowledge that he possesses of their progressive character, and of the disease in bladder, ureters, and kidneys, which will surely in time follow.

I have for years had very ample opportunities of treating stricture in all its forms and phases; and I confess that I have been astonished at its extreme frequency in our large communities, and also how little this frequency is recognised by the profession. Very many of those numerous patients who go from surgeon to surgeon to be treated for "gleet" are examples of more or less decided stricture; and, in its lesser degrees, we constantly encounter it in practice.

I have, in the course of the last few years, tried most of the methods of treating stricture which have been brought before the profession; but of late my experience has been so wholly favourable to Holt's method of rapid dilatation, that it is with a view of adding my mite to its due appreciation and more general adoption, that I have obtruded myself on your notice at this time.

I may, perhaps, at the outset, remark that the few observations I have to make have exclusive reference to organic stricture; and that, while believing firmly in the occasional existence of pure spasmodic stricture, and also of necessity in inflammatory or congestive stricture, yet with these I have at present no concern. Nor do I wish to discuss the various forms in which organic stricture may present itself, nor the necessary precautions required to make certain of its recognition. To consider these points would lead me away from the main subject of my communication; yet I would strongly insist on the importance of using chloroform in examining all difficult cases, and the propriety of commencing with a large sized bougie, and diminishing its calibre till the gauge of the stricture is obtained; as, if we begin with a small size, we may be greatly deceived in our investigation.

I have had no experience of the use of the endoscope for the diagno-

* Read before the Surgical Section at the Annual Meeting of the British Medical Association in Leeds, July 1869.

sis of these cases; nor do I think it can be of any great service for that purpose. Of the method of treatment by gradual dilatation, I have had a fair amount of experience, and have, like, I suppose, all others, been disgusted with its slowness and uncertainty. The fear and pain which the renewed introduction of instruments occasions to the nervous and excitable is a grave objection to it; and the impossibility occasionally experienced of persevering with this mode of treatment, from the extreme irritability of some patients, as well as the difficulty of gaining more than a certain limited progress in not a few cases, must have been observed by all.

Of caustic I have, I may say, no experience; and of external urethrotomy my practice has not included many cases. I am, however, persuaded that, for certain cases of old cartilaginous stricture, accompanied by many fistulous openings and much change of structure, with narrow tortuous passage, external urethrotomy is a legitimate and hopeful procedure. For elastic strictures and very irritable ones, I do not believe that it is now called for. I have had to employ internal incision repeatedly before I was fully aware of what could be done by the dilator of Holt; and I may say, in passing, that the simple little instrument of Charrière of Paris, with a fine probe-end that passes into the contracted part, has, to my mind, all the requisites of a good and safe urethrotome. Civiale's and Maisonneuve's instruments are also very good ones.

As regards rapid dilatation, my first experience began years ago with the tubes recommended by my valued friend Professor Andrew Buchanan of Glasgow; but these I soon discarded, from finding how difficult they were to guide safely along the canal, and also that they ruptured the stricture by what appears to me a wrong direction of the force—viz., from before backwards. The indurated portion of the passage is very apt to be carried before the tube, and the canal to be thus torn. Afterwards, I tried a modification of my own of these instruments; but these were inferior to the very useful and well known appliance of Mr. Wakley. Here, again, the rupturing force is exerted, as I take it, in the wrong way. Of Sir H. Thompson's adaptation of Laxmoor's instrument I have had, as yet, no experience. It, as is well known, over-distends, as it were, the strictured portion of the canal (up to No. 16 or 18 of the ordinary scale), and that portion alone; and thus that distinguished surgeon has found that the stricture is overcome, and prevented from returning. It is my intention shortly to give this principle and instrument a fair trial.

With Perrève's instrument, as improved and used by Mr. Holt, I am most familiar; and the more I use it, the more I am satisfied that it really meets all the requirements of the case, and that there are very few cases of stricture which it is incapable of setting right. When Mr. Holt concludes his remarks by saying that his method of treatment is "facile, speedy, prompt in its effects, and free from danger, immediate and remote," I do not think he has overstated his case.

I have, since the 1st of January, treated twenty-eight cases of organic stricture by Holt's instrument, seventeen of them in the Glasgow Royal Infirmary; and many of them were of long standing and great severity. All of them, with two exceptions, had existed for over two years; and one had been present for nearly thirty years. Many of these patients were, as such persons often are, much broken down in general health, their digestive and urinary functions seriously deranged, and their nutrition and nervous condition much impaired. Several of them were as unpromising cases as could well be imagined, and I was almost hopeless in undertaking their management. With long, hard, and often multiple contractions, perineal fistulae, feeble and irritable, so that almost any interference at once produced the most violent "urethral fever", followed by the most intense prostration, it was only by perseverance and caution that any real progress could be sought for. This leads me to remark that, while many cases of stricture come to us in private practice, in which we can at once, and almost without any preliminary preparation, introduce the dilator, yet, in very many hospital cases, the patients have been neglected, and only apply for relief when their condition has become altogether insupportable; so that we must, if we are to expect success, very carefully prepare our patient, and not attempt any manipulative procedure till we get their general health improved as much as possible. It is always my habit, in these bad cases, to confine the patients to bed for some days; to get their bowels into order; to examine their urine, in case of albumen or pus being present; to feed them carefully, and give them simple mucilaginous drinks, in order to dilute their urine; to make them use hot hip-baths at night; and, finally, having cleared out the bowels the morning of the operation, to inject half a grain of acetate of morphia into the perineum, and put them under chloroform. I have in this way most easily succeeded in passing the dilator through old strictures, which had been repeatedly assailed without any effect except occasioning the most violent constitutional disturbance. I put great stress upon such preparation of bad cases; and, if quinine is administered for some days in anticipation of

the operation, and an opiate repeated a few hours afterwards, with some hot brandy and water, the rigors, which are so much to be apprehended on account of their prostrating effects, will in very many cases be prevented. If they do threaten, chloroform will almost surely check them.

Of the twenty-eight cases to which I allude, one died a few days after an instrument had been put through his stricture (and that very easily, and without violence); and it was found that his right kidney had been quite disorganised by old disease. No sign of such affection was detected on admission, and he appeared a strong healthy man. His age was but thirty-two. In another case, in which perineal section had been twice performed before he came under my care, I was able to pass an instrument; but this was followed by such terribly severe constitutional disturbance, which for a time assumed all the characters of purulent infection, that I was glad to dismiss him "slightly improved", after a residence of some weeks in the hospital.

As regards the mode of using the dilator, it has been said that, as the urethra must be as large as a No. 3 bougie before it can be introduced, the instrument does not meet the real difficulties of such cases; but, with chloroform and careful preparation, the dilator can very often be passed at once through strictures that are otherwise impassable; and, even though we must use ordinary metallic or cat-gut or rat-tailed bougies of small size to enable us to introduce the dilator, it is no very great hardship, seeing that, the moment we can pass it, the case is, to all intents and purposes, at an end. Further, it is said that we cannot burst up a gristly hard stricture with Holt's instrument; and that resilient strictures are in no way benefited by it. These cases, it is said, demand perineal section. Well, I can only say I have never yet met with any stricture so hard that, if the dilator were passed through it, and the wedge pushed quickly and firmly home, it did not at once yield; and, in fact, as a rule, they give way most satisfactorily of all. But, if such a case were to present itself, as that a nodule so hard existed as not to be capable of being burst, I would either incise it with an urethrotome, and then burst it; or, if the pressure from a mass of hard organised structures outside of the mucous membrane were so great as to close the canal as if in a vice, why should these structures not be divided subcutaneously or otherwise, without opening the canal? And then, when the tension was thus relieved, the dilator would accomplish the rest.

In passing the dilator through a close hard stricture, I am in the habit of grasping the contracted part firmly with the forefinger and thumb of the left hand, when, as is frequently the case, it can be felt in the perineum. In this way, the canal is steadied, the passage of the instrument aided, and less risk of harm occasioned. I have never seen any good from filling the canal with oil. The pressure with the dilator must be firm, yet gentle; and, while the instrument is kept fully under command, great care must be taken to direct it aright as regards the line of the canal.

Further, for cases of very tight stricture, there is no reason why a much finer dilator than that now in use should not be constructed, and a smaller wedge used; and, when it had done its work, let it be replaced by the ordinary size. In my own practice, I have never used any dilator larger than a No. 12; but there is no reason why, in some canals, a larger one should not be passed.

In cases of multiple stricture, I have been in the habit of bursting them up in succession—not always at one time, if the patient were very irritable; and I have thought I got, on the whole, better results when I did not try to pass any catheter, either after the operation, as Mr. Holt does, or for twenty-four hours afterwards. I am very strongly of belief that, under ordinary circumstances, the mucous membrane is not torn in this mode of treatment; but that it is simply stretched, and that what gives way is the plastic deposit on which the stricture usually depends, and which lies in the submucous areolar tissue, or possibly in the substance of the spongy body; and, if this be so, then the passage of a catheter, to draw off the urine after the operation, becomes a matter of no moment. I have never heard much complaint made by any patient after the use of Holt's instrument. Some scalding for a day or so, and a few drops of blood, usually constitute all the annoyance; and I have never known any evil consequences beyond rigors follow it. I have never had an instance of extravasation of urine, abscess, or fistula, or even swelled testicle; so that I regard the operation as altogether harmless.

In one case of very resilient stricture, in which, undoubtedly, the ordinary instrument, twice used, only obtained a temporary improvement, I employed with perfect success a modification known, I believe, by the name of Voilemier, in which a much larger wedge is slid out side of the rod, and thus the rupture of the stricture is much more decided.

It is undoubtedly better always to lodge the end of the perforated rod in the bladder before the dilator is passed between the blades; but it is by no means necessary to do so, if an accurate knowledge of the direc-

tion of the canal is had, and its course carefully followed. In cases of multiple stricture, it is often impossible to pass it at once into the bladder.

False passages must be sedulously avoided, especially those leading down below the prostate. By placing the finger in the rectum, the existence of such passages and the wrong direction of the instrument can be readily discovered.

Three other points demand remark.

The usual seat of organic stricture I believe, with Civiale, Guthrie, Leroy, and Thompson, to be at or about the point of union of the spongy and membranous portions of the canal; but it is with great deference that I suggest my suspicion that it is placed more frequently both before and behind that spot—*i. e.*, both in the spongy and membranous parts of the passage—than is commonly supposed, notwithstanding the museum statistics to the contrary.

As regards the causes of organic stricture, my experience points most strongly to badly treated gonorrhœa as being far and away the most frequent. Either nitrate of silver injections have been used to arrest the inflammation, or, what is far more common, no injections have been used, but cubebs, etc., given internally; *i. e.*, the gonorrhœa has been allowed to cure itself. Of the twenty-eight cases mentioned in this paper, twenty-four followed gonorrhœa treated by internal remedies alone; two were traumatic; and one arose from the use of a strong "revulsive" injection of lunar caustic, and one from violence in a man trying to pass a catheter when drunk. Traumatic strictures are in every way the worst to deal with, from the non-elastic cicatricial material of which they are composed.

Lastly, I may remark that I have had three opportunities of examining after death cases of organic stricture of the urethra. One man was brought to my operative class, in whose urethra an old and close stricture was found. In a hospital case of head-injury, a catheter was with difficulty introduced, and, after death, the canal was opened; and the third case was that whose death I before recorded. In none of these was there any change discoverable in the mucous membrane. It was solely in the submucous areolar tissue that the induration and contracting agency was found. In two of the cases, it had nearly surrounded the passage, but was most dense and decided on the under surface; and in the third case it was considerably prolonged underneath the lining membrane, and somewhat implicated the substance of the spongy body.

It is requisite that a patient upon whom this operation has been performed should be taught to pass a bougie for himself, and that once in eight days for a time. This precaution is, I consider, essential, after all methods of treating organic stricture, and is even less required, so far as I have been able to observe, after Holt's method of treatment than after that by gradual dilatation.

A CASE OF SUICIDE BY STRYCHNIA:

DISCOVERY OF A LARGE RENAL CALCULUS AT THE POST MORTEM EXAMINATION: WITH SPECIMEN.*

By J. M. HEWARD, Esq., Stamford.

ON May 8th, when paying my official visit to the Borough Gaol, at 12.45 P.M., I went into the reception-cell, and found Esther Osborne, aged 56 years, dead. At 12 noon, she left the justices' room. At 12.25, dinner, with a pint of water, was taken to her. Only twenty minutes, therefore, elapsed from her being seen alive well, and my finding her dead.

She was lying face downward, at full length, upon her shawl, which she had spread out upon the floor. None of the solid food was eaten. Part of the water was thrown upon the floor; with the remainder she had mixed a packet of Battle's Vermin Killer, which subsequent evidence proved that she had secreted in the lining of her petticoat. The drinking-vessel had been well wiped out with her pocket-handkerchief. The pot was replaced upon the shelf, and the paper which had contained the poison was carefully hidden in the petticoat-lining. She had not vomited. Her linen was wet with urine.

At 4.30 of the same afternoon, I made a *post mortem* examination. The body was well nourished, and free from marks of violence. It was very rigid; the head was thrown back, the under jaw closely clenched to the upper. The arms were rigidly flexed on the chest; the fingers bent into the palms of the hands. The feet were extended. I opened the thorax and abdomen, and first removed the stomach. This, for two-thirds of its middle extent, was firmly contracted upon its contents. The cardiac and pyloric extremities being normal made the

stomach appear in the form of a dumb-bell. I opened it. In the contracted portion, the mucous membrane was deeply corrugated and congested. The stomach contained nothing but a glairy fluid, loaded with the Battle's Vermin Killer; and this was chiefly in the pyloric end, and thus, as it were, locked in by the central contraction. There was scarcely at all a blue stain in the cardiac end. None of the poison had passed into the duodenum. The intestines were void of flatus; the bladder was quite empty and hard. In the chest, the lungs were congested. The heart was contracted so firmly as to appear like a cricket-ball. On cutting into each ventricle, the left was completely empty; every drop of blood had been squeezed out. The right contained a slight moisture of blood. The blood of the body generally was fluid and dark. In the cranium, the membranes of the brain were greatly congested; the brain-substance was normal and healthy. Whilst examining the abdomen, the following conditions with respect to the kidneys were discovered. The pelvis of the right kidney contained a large calculus, chiefly made up of uric acid, and weighing 285 grains. In consequence of the obstruction to the flow of urine through the ureter, the kidney had become dilated, and appeared like a cyst. It measured ten inches long, five inches across, and four inches from front to back. In some parts, its walls were so thinned out that scarcely anything but peritoneum remained. It contained a dirty, flaky, uriferous fluid. The left kidney was hypertrophied; otherwise healthy.

Other evidence at the inquest proved that the woman went into the gaol with a threepenny packet of Battle's Vermin Killer. A chemist informs me that such a packet contains about eight grains of strychnia. Assuming that all the powder was taken, the dose was large; and death was most rapid. You will bear in mind that only twenty minutes elapsed between the woman being seen alive and dead. In this time she had taken poison from her petticoat-lining; had mixed it with some of the water; and, after drinking it, had carefully wiped out the vessel with her pocket-handkerchief, replaced the pot on the shelf of the cell, and had again hidden the paper which had contained the poison in her petticoat.

I find that Professor Maschka of Prague (*vide* the New Sydenham Society's *Biennial Retrospect* for years 1865-66, p. 42) "insists on the fact that it frequently happens that animals, to which large doses of strychnia have been given, remain quiet for a time, and are then suddenly attacked by a spasm in which they instantaneously die." I think that death in this case was as sudden as Professor Maschka describes. Once let the heart be contracted as firmly as I have stated, and I cannot imagine life continuing another moment.

Now, with respect to the renal calculus, I drove over to the village where the woman had lived, to inquire about her medical history. I learned for certain that she had never complained of illness for twenty years preceding her death, but that she enjoyed most excellent health. She drank much ale daily, and often went to bed intoxicated. The only point that I could learn was that, during the last two years of her life, she had had an enormous appetite—always hungry, and craving for food. I think most probably the irritation in the kidney caused this morbid appetite. As an analogue, I may refer to the greatly increased appetite of many women during the first few weeks of pregnancy, the uterine irritation being doubtless the cause; or to the more general fact that irritation in any viscus supplied by the great sympathetic mostly excites some morbid sensation in the stomach.

AMPUTATION OF THE RIGHT ARM AT THE SHOULDER-JOINT: WITH EXCISION OF THE SCAPULA.

By VINCENT JACKSON, Esq.,

Surgeon to the South Staffordshire General Hospital, Wolverhampton: Fellow of the Royal Medical and Chirurgical Society.

SAMUEL C., aged 35, was admitted into the Wolverhampton General Hospital in December 1864. He was employed on the Great Western Railway as a labourer; and whilst so employed, was knocked down, being struck on the back by the buffer of an engine, the wheel of which passed over and crushed his right arm. As quickly as possible, I believe, he was conveyed to the Hospital; but not before a considerable quantity of blood was lost. At half-past six in the evening, shortly after his admission, I saw the patient. He was an unusually well developed and strong man; his face was pale, but not blanched; the countenance expressive of suffering great pain. He was perfectly sensible, and anxious for something to be done to his arm. His habits were intemperate.

On a careful examination, it was ascertained that a compound comminuted fracture of the right arm and forearm existed, and also that the shoulder-blade was broken in more than one place, although the skin

* Read before the South Midland Branch.