able place of residence; but Santa Cruz is far behind Funchal in civilisation; the inhabitants are surly, the hotel indifferent and expensive, the food not so nutritious, and the quarantine regulations are so absurdly ridiculous, that a rumour of an epidemic of any kind having occurred at the Antipodes is quite sufficient as an excuse for not giving *pratique*. The climate is said to be drier, and more favourable for consumptives, than that of Madeira, but these several drawbacks place it practically beyond the reach of invalids. Cigars, cigarettes, made from inferior Havana tobacco, sandal-wood fans, gloves, woollen sashes, and white poodle dogs seem to be all that are obtainable. Canary wine is made here in considerable quantities from a rather rich green grape. The wine is not nearly so palatable as Madeira, having quite a different flavour—more like a Marsala than a sherry, being not unlike this latter wine in its after-effects. The cheaper qualities are quite undrinkable, causing headache, acidity of the stomach, and dyspepsia. We bade adieu to this famed island at 10 P.M., when a strong land-wind was blowing down the mountains. A few drops of rain had fallen just before. Since passing Finisterre, the weather gradually became warmer, necessitating the putting up of the awning the day previous to our arrival at Madeira, at which the hygrometer at noon in the cabin, port open, read 74 degs. and 69 degs. The difference in time being one hour and five minutes. I might have mentioned that the Madeira winter is cold; it may be also interesting to know that the population numbers about 120,000, of whom some three hundred are English or foreign invalids. The island is about thirty miles long by twelve broad, its highest peak rising to a height of six thousand feet. It is covered in many parts with fine timber and coloured woods. The people have no idea of free trade, charging a heavy import duty of from 50 to 100 per cent. on all articles brought into the Custom House, where they must be lodged in the first instance. The hire of houses varies, according to size, from £20 to £100 for the season; the women servants are slovenly, the men excellent and cleanly, working for six dollars a month, and living on very simple food—chiefly on the sweet potato and tunny fish, of both of which they are very fond. Six thousand or seven thousand pipes of wine are exported annually. The journey to the northern end of the island is rugged and toilsome. The garrison is composed of a militia regiment brought from Lisbon. They are good troops, well clothed, armed, and fed, having sixpence *per diem* to spend, free of all stoppages. They are clothed in dark brown jackets with green facings; the corps is frequently changed. The men appear cleanly, and of fair *physique*. When sick, they are treated regimentally in a hospital attached to their barracks. In Funchal, a Contagious Diseases Act is in force, the women being periodically examined and confined to certain houses and localities. The effect of the regulation is said to be excellent, the women never making any objection to its operations—taking them as quite a matter of course—while some of the outer world are sufficiently absurd to be shocked by such an excellent measure of hygiene.

ON THE PASSAGE OF RENAL CALCULI DOWN THE URETERS.*

By EDWIN MORRIS, M.D., F.R.C.S.E.

BUT few writers on Practical Medicine even allude to the passage of a calculus from the kidney down the ureters to the bladder, and those who do notice it give a meagre description of the symptoms. One writer states that "the greatest difficulty will arise in distinguishing this disease from colic". (Dr. Barlow, *Practice of Medicine*, p. 475.) He says also, in respect of distinguishing between diseases of the colon and irritation of the ureters, "the diagnosis is one that can be made only by minute investigation of each individual case, and of which it is impossible to include the whole details under any general rules".

Such, then, being our position relative to the recorded history of this truly painful complaint, it becomes the bounden duty of every practitioner who meets with well developed cases to record them for the guidance and instruction of others.

I have myself met with three well developed cases; in each instance, the passage of the calculus from the bladder was followed by an immediate subsidence of the distressing symptoms. I secured the calculi, and shall have the pleasure of showing them to you. But, before detailing the cases, you will bear with me whilst I give a cursory glance at the structures implicated in this disease. The ureters commence at the lower border of the kidneys, extending to the posterior and inferior part of the bladder, into which both ureters open. Their structure consists of an external fibrous tunic lined by a thin mucous membrane. Their average length is about eighteen inches, and their calibre about the size

of a quill. The ureters are supplied with nerves from the renal plexus and splanchnic nerves. We have, therefore, a part involved which has its peculiar function to perform, and which is composed of those living tissues which are highly susceptible of an undue stimulus produced by local irritation. We cannot, therefore, be surprised at the violence of the symptoms caused by the forced passage of a calculus through the ureters, and which are principally shown in the nervous system. The irritation and consequent pain of an organ is much more severe in those persons who are possessed of a greater irritability than in others. It is well known that some persons are able to bear pain with much greater calmness than others; hence we have in different individuals an infinite degree of modification of symptoms. The laceration of muscular structures by any detached substance which acts as a direct irritant is severely felt through the whole of the nervous system.

The calculi which pass with such formidable severity down the ureters are calcareous deposits from the urine, within the pelvis of the kidney, and occasionally assume such a size as to be unable to leave that cavity, producing the most agonising and disastrous results.

When a small calculus, or a piece broken off from a large one, once enters within the tube of the ureter, a violent spasmodic action is set up in its fibrous tunic, with a view of pressing on the offending extraneous irritant; and, as a rule, after hours of suffering, nature is capable of riding herself of the obnoxious substance, as the following cases will show.

We are told that "the most valuable diagnostic sign in such cases is sickness. When the pain proceeds from irritation of the kidneys, it will rarely be wanting".

CASE I. The subject of the complaint was a very healthy man between 50 and 60 years of age—a total abstainer from intoxicating drinks for years—a coach-builder by trade. W. W. informed me that, on Thursday, October 15th, 1863, he was in the enjoyment of excellent health, and had spent the evening in the company of some friends, took his supper as usual, and retired to bed at his usual time. He slept well until about 3.30 A.M., when he was awakened with a severe pain in his left side; in a few minutes, he aroused his wife and informed her of his suffering: she gave him a glass of hot water and peppermint, from which he derived no relief. He assured his wife something serious was the matter, and requested I might be sent for. I saw him very shortly afterwards. He was then perfectly calm and free from pain, and was afraid to move or even speak, fearing it might bring on the "dreadful pain". He said the pain came on in paroxysms, and was of an indescribable character, extending from the left iliac region down to, and causing a most "agonising painful nipping up of the left testicle". Upon examining the side, no tenderness could be detected, notwithstanding that he complained of much pain. A paroxysm of pain came on which caused him to draw his knees up. His face gave evidence of severe pain of an expulsive character, similar to that seen in the face of a parturient woman. The perspiration ran down his face; he prayed that I would relieve him as quickly as possible; he was continually trying to micturate, and his whole frame was in a state of the utmost excitement. Notwithstanding the absence of sickness, I told my patient he was passing a "small stone" from the kidneys to the bladder, and a sharp look-out must be kept for it. I gave him two grains of calomel and one of opium, with a mixture containing henbane, liquor potassæ, and mucilage, and ordered plenty of barley-water to be taken. After three hours of continuous suffering, he passed a small calculus, numbered No. 1 upon the card which I will send round to you; all his symptoms immediately abated; he fell into a profound sleep, lasting over two hours, waking up quite well, complaining only of a feeling of soreness about his loins and body. I saw him only a few days ago, and he tells me he has remained free from the complaint ever since.

CASE II is that of T. C., aged 58 years, and one of great severity; and, when you notice the size of the calculus passed, you will not marvel at it. As in the first case, the symptoms came on about 3 A.M., the pain extending along the right side into the right testicle, coming on in paroxysms, between which a dull aching pain always remained. As soon as ever a paroxysm came on, violent sickness was produced, which lasted as long as the paroxysm of pain. I kept a look out for the stone, and was rewarded for my assiduity by finding the calculus No. 2 passed, and had the satisfaction of witnessing a subsidence of the symptoms and a rapid restoration to health. In this, as in the first case, I gave grain doses of opium until the calculus was passed.

CASE III. All the leading symptoms attending the two cases I have already given were present in this instance, the sickness, I think, being more severe. R. M. was a robust, healthy man, and as a rule had excellent health. The attack came on soon after retiring to bed. He informed me that the pain was so severe as to cause him to be very sick. I administered calomel and opium, as in the former cases. Several hours elapsed before relief was obtained. The symptoms sud-

* Read at the annual meeting of the Midland Branch.

denly left him, and he was soon sleeping, forgetful of his troubles. Upon examining the urine passed, the small serrated calculus No. 3 was discovered.

As a rule, there is no difficulty in accurately diagnosing these cases. The only affection, in my opinion, which could possibly be taken for this complaint is a severe attack of colic. This error may be avoided by noticing the sympathetic irritation which is set up in the testicle of the affected side, the appearance occasionally of blood in the urine, and the frequent attempts at micturition.

The best treatment is that of opium in grain-doses every hour until there is a mitigation of the symptoms, with a plentiful supply of potash-water in a state of effervescence. Hot baths will also be found very useful.

ON THE TREATMENT OF VASCULAR GROWTHS OF THE URETHRA WITHOUT OPERATION.*

By ARTHUR W. EDIS, M.D.,

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CONSIDERING the frequency and amount of suffering and inconvenience caused by vascular growths of the urethra, it seems strange that so little attention has been given to the subject in many of the recent works on diseases of women. One of our best treatises does not even mention them; another, although it recognises them as an "exceedingly important affection", dismisses them with a single page. Scanzoni accords them but little more. Dr. Barnes enters fully into their consideration; but, as far as I have been able to ascertain, nearly all authors are agreed in stating that their removal by operation, if not the only thing to be resorted to, is at least the only thing that can be relied upon for effecting a cure.

Now, it is familiar to all who study gynecology how much patients dread anything of the nature of an operation; and, even when it is resolved upon, it necessitates the administration of chloroform and other preliminary arrangements; and when, as frequently happens, patients present themselves in the consulting-room who come up from a distance, the mere fact of announcing the necessity of an operation is equivalent to frightening them into "rather bearing the ills they have" than submitting to operative interference.

The application of the permanganate of mercury is attended by much pain and inconvenience, and cannot always be resorted to. Nitrate of silver, in my experience, is not sufficiently potent; it produces too much irritation, and does not sufficiently destroy the vascular growth—in many cases seeming to increase rather than diminish it. The actual cautery cannot well be applied unless the patient be at home; and the various other agents, such as potassa fusa, nitric acid, etc., are too painful to be of general application.

To obviate this difficulty, I was induced to try the effects of *chromic acid*, and was surprised to find how little inconvenience it occasioned, and at the same time how efficacious it was in destroying the growth. I have in numerous instances applied a saturated solution, and with the most marked benefit. My usual plan is to roll a little cotton-wool round the end of a small piece of wood (an ordinary match will do); to soak it for a quarter of an inch in the acid solution; and then to carefully yet firmly press it upon the vascular growth until the surface becomes distinctly shrivelled; the surrounding parts being guarded by cotton-wool soaked in solution of carbonate of soda, which is also applied to the growth subsequently, to neutralise any excess of the acid. Slight burning pain is produced, but seldom sufficient to need any employment of morphia, either hypodermically or as a local application.

The sensitiveness of the tumour is almost completely destroyed, some soreness being all that is complained of. In about a week's time, a second application should be made; and, depending upon the size of the growth, two or more subsequent applications, at a week's interval, will generally be sufficient to complete the cure, which, as far as I have been able to observe hitherto, is permanent. *Carbolic acid* in the solid form, or as a saturated solution, also serves to mummify these growths, and causes far less inconvenience than many of the numerous agents recommended. My experience with this is not yet sufficiently great to enable me to speak more positively, but I believe it will be found to be a very useful addition to our list of remedies in these cases. I append a few cases where the chromic acid had been employed.

CASE I. J. C., aged 37, married sixteen years, without children, was first seen on October 16th, 1873. She complained of smarting pain on micturition, was obliged to get up several times in the night to pass urine, experienced much pain on walking or exertion, had a slight dis-

charge, occasionally tinged with blood, and suffered much inconvenience *in coitu*. On examination, a vascular growth was discovered bulging from the urethra; it was sessile, being attached to about two-thirds of the circumference of the passage; it was exquisitely sensitive, and bled readily when touched. A saturated solution of chromic acid was carefully, but thoroughly, applied, the pencil being pressed firmly on the surface. Some slight inconvenience was caused at the time, but this passed off after a few hours. A mixture of bicarbonate of potash and tincture of belladonna was prescribed, together with a soothing lotion.

On October 23rd, she reported that the pain on micturition was less; the urethra being still vascular, the chromic acid was reapplied. Bromide of potassium was given in place of the other mixture.

On November 6th, the chromic acid was again resorted to, and caused little or no inconvenience.

On November 20th, the urethra being still somewhat vascular, a strong solution of carbolic acid was applied, after which no further local means were resorted to.

CASE II. A. H., aged 63, married forty years, without children, on admission, September 18th, 1873, complained of scalding pain on micturition, which had been present two years. She had a constant discharge, and the linen was often stained with blood; she lost a good deal a week since; she thought she had "a gathering in the womb". On examination, a vascular growth was detected at the orifice of the urethra, very sensitive. Chromic acid was applied; very little inconvenience was caused by it, and, when seen on October 3rd, she stated that she had been better ever since her first visit. The growth was much smaller. The acid was again applied.

On October 16th, she had no pain at all on micturition, and felt better in every respect. The urethra was still somewhat vascular, but as there were no symptoms, nothing further was done; and, up to January 1874, she had had no relapse.

CASE III. E. R., aged 47, married sixteen years, the mother of three children, was admitted July 3rd, 1873, complaining of pains in the womb and lower part of the back, pain in micturition and also difficulty, and leucorrhœa. The uterus was found to be normal, but the urethra was very vascular and sensitive. There was no distinct growth projecting, but a general injected condition for about two-thirds of the circumference of the urethra. Chromic acid was applied, and again on the 17th, when she stated that the pain on micturition was very much less than it had been before she came.

On the 31st, she had very slight inconvenience on micturition, and, as the vascularity had greatly diminished, no further application was made.

When seen in September, she had no pain whatever on passing urine. She was suffering from a threatened miscarriage.

On October 2nd, the urethra was found to be perfectly normal. She is now nearly six months advanced in pregnancy.

CASE IV. A. J., aged 63, widow, mother of eight children, on admission on April 24th, 1873, complained of smarting pain on passing urine and difficulty in doing so, bearing down pains, and discharge. She has had "pressure and cutting pain with the water for the last five or six months, disturbing her very much at night". The urethra was found to be very vascular, the mucous membrane much hypertrophied. A zinc point was inserted on two occasions, and left in the urethra for some minutes. This caused some pain at the time, but afforded relief afterwards. However, as the vascularity still continued, on June 12th, the permanganate of mercury was applied.

On July 12th, the burning and smarting pain in micturition still continuing, chromic acid was applied, and produced much less inconvenience than the permanganate had done.

On July 24th, she stated that she had experienced little or no pain after the former application, and had been much better since. The urethra was much less vascular, but not quite healthy. The acid was reapplied, since when she has had no further symptoms.

CASE V. M. S., aged 66, widow, when admitted in October 1872, complained of "pain in her privates", desire to micturate every ten minutes, the act being accompanied by much smarting pain. There was a discharge purulent in character, and other symptoms referable to the uterus. On examination, a large vascular tumour, sessile on the posterior wall of the urethra, was discovered; it bled readily when touched, and was very sensitive.

An operation being deemed requisite, no local application was made. Belladonna with an alkali was prescribed internally, and chloral and morphia at night. No bed being obtainable, the permanganate of mercury was applied on two occasions, at a week's interval.

On November 15th, chromic acid was resorted to in place of the permanganate, as the pain from the latter lasted several hours after its employment. It was repeated at the end of a fortnight, again on December 12th, and on January 9th, 1873, and February 11th. After this, the growth disappeared entirely, and required no further application, though

* Read before the Obstetrical Society.