Clinical Lecture

ON

CERTAIN STATES OF THE URINE
SYMPTOMATIC OF DISEASE OF
THE KIDNEY.

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PRACTICE OF MEDICINE.HEMATURIA: BLOOD IN THE URINE A SYMPTOM OR
OTHERWISE?

THE appearance of blood in the urine is always a source of anxiety and alarm to the patient, and if not rightly interpreted may become a source of serious error in treatment. Its importance as a symptom must depend on the part of the urinary apparatus from which it is derived. Its significance, even when coming from the kidneys, is momentous or otherwise, according to the character of the accompanying symptoms. It may indicate temporary conditions of disease, to be easily removed by judicious measures; or it may afford unequivocal evidence of incurable organic mischief. Several cases have of late been in the hospital, and they present the opportunity of explaining to you the force and value of the symptoms by which a correct estimate may be formed of this state of the urine. Hæmaturia may occur in the course of many different diseases. It may be symptomatic of various diseases of the kidney: 1. Simple inflammation or nephritis. 2. The early stage of Bright's disease. 3. Scarlatinal dropsy. 4. Calculous pyelitis, including under this form gouty inflammation. 5. Tubercular pyelitis. 6. Cancer of the kidney. Or, secondly, the hæmorrhage, proceeding from the kidneys, may not imply any organic disease of these organs, being symptomatic only of a general hæmorrhagic condition, in which the kidneys participate with other organs; such is the hæmaturia in purpura and scurvy. It occurs also in some febrile disorders, scarlet fever, variola, and typhus, and it is sometimes prevalent in pyæmia. Moreover, the blood may be derived from the bladder, prostate, or urethra, quite independent of the kidneys. Again, hæmaturia has been noticed, occasionally occurring in women, as vicarious of the menstrual flux, an example of which was lately under Mr. Guthrie, in Percy ward, in a woman suffering from abscess in the mamma. In this case the catamenia had been absent during the previous three months; but for several consecutive days at the menstrual period blood was passed with the urine. There was no increased frequency of micturition, nor any pain or irritability about the urinary passages. The urine, examined under the microscope, presented blood-discs, amorphous fibrine highly stained with hæmaturia, and a few epithelial corpuscles, apparently from the pelvis of the kidney and ureters. Rayer mentions instances of this vicarious hæmaturia.

There is yet another form of hæmaturia, which appears to be unconnected with any of the preceding morbid conditions, and the only exciting cause which can be detected is mental agitation. If, in particular constitutions, there be this singular idiosyncrasy, that mental inquietude or excitement can bring on attacks of hæmaturia, temporary in their duration, innocent in their sequel, and unconnected with organic mischief in the kidney, it must be manifestly of importance to ascertain if possible the symptoms by which such an unexceptionable and rare form of hæmaturia can be distinguished from the more serious cases arising from calculous or other organic disease.

The case of Edward B—, in Burdett ward, appears to me to illustrate this rare form of hæmaturia, the recurrence of the attack being invariably connected with mental disquietude. He is a shoemaker, forty-three years of age, of spare habit of body. He states that he is a teetotaller, and has been so for years; that about nine years since he first noticed his urine discoloured with blood; its appearance was unaccompanied by any pain or constitutional disturbance; it alarmed him, and he sought advice. He was ordered change of air, and cessation from his very sedentary employment. He states that he was relieved for the time, but that three years afterwards he suffered another attack. On this occasion he recollects that it

was preceded by a sense of weight and pain in the loins. He was treated at Charing-cross Hospital, and on subsequent occasions at other hospitals, always with relief; the continuance of the blood in his urine seldom exceeding ten or fourteen days. During the last twelve months the hæmaturia has become more frequent, and he has had two attacks in the course of the last six months. On admission, he complained of pain in the loins, and the urine was highly charged with blood. He is free from all other symptoms of disease: the chest is natural; heart sounds natural; the abdomen is flat, soft, and elastic; there is no fullness in the lumbar spaces, and no tenderness on deep-made pressure; the region of the liver does not exceed its natural limits. The appetite is good, the tongue clean, the bowels natural. Micturition is not more frequent than natural, nor is there any difficulty or pain. The urine is of a dark-red colour, but is free from visible clots; allowed to rest, it deposits abundance of blood-discs. He was ordered to be cupped to ten ounces from the loins; to take five grains of gallic acid every four hours, and half a drachm of the compound jalap powder every alternate morning, and a warm bath each alternate evening. The urine was examined by the microscope: numerous blood-corpuscles were visible, and many fibrinous casts entangling blood-discs in their substance. These fibrinous coagula had the appearance of having been moulded in the uriniferous tubes, and washed therefrom by the escape of the urine; their size suggested their formation in the straight tubes of Bellini. Ten days after admission, the urine was quite free from all vestiges of blood to the unassisted eye; it presented a faint albuminous cloud by heat and nitric acid, and, allowed to rest, it deposited a flocculent precipitate, which by the microscope, was resolved into amorphous fibrinous masses, slightly stained with hæmatin; a few blood-discs were seen, but no other microscopic objects. The patient is free from all traces of lumbar pain, and he thinks that his bodily strength is increasing. Three weeks after admission, he presents the same favourable condition: no trace of blood nor albumen in the urine; the same flocculent deposit of minute amorphous coagula stained with hæmatin; but no casts of the tubes, nor any blood-discs. The medicines were discontinued. On the fifth week from admission he complains of a return of the lumbar pain, but there is no alteration in the natural appearance of the urine, except that crystals of oxalate of lime were observed interspersed amongst the minute amorphous coagula above noticed. He was discharged in the month of August, 1855, and you have seen him from time to time attending to report his freedom from any return of hæmaturia; but the last visit he complains of great increase of pain in the left lumbar region, extending upwards to the shoulder of the same side. In October he brings a sample of his urine, and it is again blood-red, and possesses the same characters as when we first examined it; but it is unaccompanied by any constitutional disturbance, and he states that he has no difficulty in passing his urine, nor is there any undue frequency of micturition, nor any local symptoms different from those when an in-patient. He adds an important fact: that these recurrences of bloody urine are always caused by some vexatious mental excitement. The man, it appears, is quiet, sober, and industrious, and, upon principle, totally abstains from all fermented drinks. His wife has no liking for water, but possesses the common prejudice in favour of alcohol, and, whenever she can command the means, indulges to excess; her demeanour towards her husband at these times is somewhat at variance with her marriage vows, and to avoid annoyance our patient states that he has endeavoured to effect a voluntary separation; that while he is left to himself, undisturbed, his malady disappears; but the moment he is subjected to visits from an inebriated woman the hæmaturia instantly returns. He has noticed this sequence to be so uniform, that he firmly believes that the vexation and trouble to which he is occasionally exposed are the sole causes of his disease. I am inclined to think the man's inference not so far wrong or unintelligible as it may at first be considered. It may be readily granted that neither anatomically nor physiologically is the connexion between renal hæmorrhage and mental emotion very apparent. It is true that certain mental emotions are known to excite, more or less, the renal function; but the cases are extremely rare in which a morbid state like hæmorrhage can be traced to a similar exciting cause. The records of medicine, however, are not without such cases. Rayer, in his work on "Diseases of the Kidney," in treating of Renal Hæmorrhage, mentions a case of hæmaturia (tom. iii. p. 359) brought on apparently by no other cause than mental excitement: "Survenu presque immédiatement après un violent accès de colère." The accompanying symptoms were, severe hypogastric pain, with heat and pain in the course of the

ureters, and sensation of weight and aching in the region of the kidneys. He was quickly relieved by rest, warm baths, diet, and mucilaginous drinks.

I saw a gentleman, last spring, seventy years of age, who suffered from occasional attacks of hæmaturia, traceable to no other cause than mental excitement. There were no gouty symptoms, or the least tendency thereto. He was a remarkably healthy, vigorous country gentleman. He had consulted the most distinguished physician of our day, and whose name is inseparably connected with renal pathology, and whose opinion, as the patient informed me, was in conformity with the views now expressed. This man, B—, has, in the course of the last summer, twice presented himself with a return of the complaint. You have seen him on these several occasions. The hæmaturia, when he appeared in June, lasted only three days. On the fifth day, the urine was free from all trace of blood or albumen. Trouble and excitement preceded the attack. In July, he had another attack; and so dependent is the hæmaturia on mental excitement, that on this occasion a very trivial circumstance seems to have induced it. It was a dispute with his employer as to the rate of remuneration he should receive for work done. On each of these attacks, the symptoms exhibit the same peculiarity: a sense of weight and pain about the loins, but unaccompanied by any constitutional disturbance, greater frequency of micturition, or inconvenience or difficulty in that act.

It is thus by the absence of all the usual symptoms of irritation of the kidney, such as are ever present in gouty inflammation, whether excited by the presence of calculus or not; it is the absence of constitutional disturbance, whether febrile or dropsical; it is the temporary character of the attacks, the urine in a few days returning to a clear and natural state, without any trace of albumen, or any morbid morphological element therein, that justify our excluding as the cause of hæmaturia all those organic diseases of the kidney in which hæmorrhage occupies the position of a leading symptom, and attributing the malady exclusively to the operation of mental excitement. I confess that but for the authority of such an observer as Rayer, or the support which my present view of this case receives from the opinion expressed by the eminent physician to whom I have previously alluded, that I had great difficulty in forming a satisfactory diagnosis of the nature and cause of the hæmaturia in this case. It is only after a very careful observation of the sum of the symptoms exhibited by the patient over a period of more than eighteen months, and observing during that period the strictly temporary morbid condition of the urine, the constant relation of this state of hæmaturia to mental emotion, that I came to the conclusion that the case might fairly be classed with those that Rayer has spoken of under the name of hæmorrhages renales essentielles (sporadique), and that we might attribute its exciting cause to the rare and exceptionable agency of mental excitement. I am very desirous of keeping this patient under observation, with a view of testing the soundness of the opinion and diagnosis brought before you in this lecture.

OF THE EXTENT AND SPECIALITY OF THE DIASTALTIC SPINAL SYSTEM:

OBSERVATIONS AND SUGGESTIONS.

No. V.

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THERE is, perhaps, no phenomenon of the Diastaltic Nervous System more remarkable than that of the "*solidarité*," or combination and union, in some instances, between its different parts and functions.

I will first notice the oneness which exists between *all* the *exciters*, cutaneous and internal, and *all* the *motors* of that system; between the trifacial and the cutaneous spinal, and the pneumogastrics, and the spinal accessory, the intercostal and the diaphragmatic. Excite but a filament of the former, and *all* the latter are drawn into action, linked together in one *solidarité*.

But this is not all. The act of expiration is linked in one *solidarité* with that of inspiration; and the excitant and the excitor nerve which accomplished the former, accomplish the latter, as one link of a firm chain drawn, draws with it the rest.

This fact is obvious in the cases of sneezing and coughing.

Both consist of an excited inspiration, followed by a firmly-linked energetic expiration, both acts being excited in linked sequence by one excitant through one excitor nerve. Indeed, in one case, pertussis, the acts of expiration are more remarkable and complete than those of inspiration.

So, physiologically, an equable expiration is inseparably linked with an equable inspiration, the connexion not being in the least less real than if one or both of these acts were more energetic or violent.

This *solidarité* exists between nerves the most distant of any in the animal economy. A cold douche on the lower extremities will induce an act of inspiration through the medium of the medulla oblongata; uterine excitation induces vomiting through the same medium.

But, perhaps, the most striking example of this kind is that which subsists between the mamma placed high in the human frame, and the ovary and the uterus placed in its lowest region.

One remarkable effect of development and growth is the extraordinary *course* of some of the nerves of the diastaltic system: for instance, that of the pneumogastric and of the diaphragmatic; that of the spinal accessory, of the facial in the face itself, the *descendens septimi*, the *descendens noni*.

Something not less extraordinary in course, though less obvious, must connect the ovary, the uterus, and the human mamma. Doubtless there are mingled analogues of the nerves which I have enumerated above, in connexion with the *lower medulla oblongata*.

Uterine irritation produces general convulsion not less certainly than the irritation of teething. Irritation of the os uteri produces abortion more slowly, but not less certainly, than irritation of the fauces induces vomiting; indeed I have no doubt that the baneful custom of digital examinations, more frequent of late, is the too frequent *cause* of that ill-fated uterine action.

In the midst of this *solidarité* in the diastaltic system, that is, of the diffusion and combination of its energy, there is then a speciality of action not less extraordinary. A cold douche on the face produces *deglutition* and *inspiration* specially, and not *any* kind of action at random. The first application of the infant to the *nipple* produces contraction of—the *uterus*, and of the uterus only.

But I have already stated facts sufficient to establish the principle announced as the topic of this paper. I will therefore conclude with one final observation:

The blood circulates over every part of the animal system (with a slight exception or two).

But the diastaltic nervous system is not less diffused: it consolidates, as it were, by a motor nerve, *every muscle* with every *point* originating an excitor nerve; it consolidates by a secretory nerve every point in which nutrition, assimilation, elimination, reparation, are effected, with every *point* originating an excito-secretory nerve.

If a universally circulating blood is now manifest to every eye aided by the microscope, a universally circulating nervous excito-motory, excito-secretory power or energy is now manifest to every eye by its manifest phenomena.

If a venous system conveys the blood to the heart, if the heart propels the blood through a system of arteries into a system of capillary or methæmatous vessels, a system of centripetal nerves conveys an excitation to the spinal centre, and this, like the heart, sends it forth along a system of centrifugal nerves, not only to every muscle, but actually to every such methæmatous vessel and methæmatous point in the entire animal economy!

Thus, if we have a circulation of the blood or material *from which* every part of the animal frame is constituted, we have a circulation or cycloidal movement of dynamic or nerve-power *by which* every part of that animal frame is constituted. In a word, as there is—a *Blood-Circulation*, so there is—a *quasi Nerve-Circulation*.

I conclude these brief papers by presenting to my reader a summary of the *System*. It embraces, then,—

1. *The Orifices*;
2. *The Exits or Sphincters*;
3. *The Terminal Tubal Organs* connected with these; the first and second being diastaltic in their action, the third diastaltic;
4. *The Internal Muscular Organs*—the heart, the intestinal canal, the uterus;
5. *The Secretory and Blood-changing Surfaces and Organs*.

I need not say how much of investigation the demonstration of the last two points still requires.

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