

prejudice, that lately instituted by our College of Physicians, which has been at once adopted by all our Government departments, might be commended to his notice.

Above all peoples, our American brethren are the consistent announcers of great social reforms, on the principle that, with advancing knowledge, the latest device, when it meets with ready acceptance by a large body of capable judges, must be the best, and on such ground we ought not to hesitate in recommending that which has been universally adopted by the profession in the old country. Admitting that, with so large a base, the reports of the United States marine hospital service may take pride in standing alone in this matter, yet, for the sake of comparison, which will be advantageous to a prominent class of men in the two greatest maritime countries of the world, it would still be well to facilitate, by every means, instruction by these reports side by side with what we have had for a long time placed annually before us in those of our own naval medical department.

This first report has aimed only at presenting concise notations of surgical cases, especially of operations, that extend further back than the statistics of the report itself, and therefore exceed the average of surgery for yearly periods by about one-third. These offer a very favourable record of the results of operative surgery which may be summarised as follows:

189 surgical operations, comprising, amputations of thigh, 2; of both legs, 1; of one leg, 10; of toes, etc., 15; at shoulder, 1; of arm, 2; of forearm, 3; at wrist-joint, 1; of fingers, etc., 25. Excisions of joints—of head of humerus, 1; lower end of, 1; elbow-joint, 1; wrist-joint, 1; of metacarpal bone, 1. Ligation of arteries—exterior iliac, 1; superior profunda, 1; brachial artery, 1. Trephining—frontal bone, 1; mastoid process, 1. Hernia—radical cure, 4; strangulated, 1. Lithotomy, 1. Tumours and diseased growths—of head and face, 4; of neck, 3; of leg, 1; of superior maxillary bone, 1; of half of inferior maxilla, 1; of sequestra, 2. Eyeball—extirpation, 4; cataract extraction, 4; iridectomy, 2. Genito-urinary organs—strictured urethra, 17; phimosis and paraphimosis, 42; castration, 4; hydrocele, 7; varicocele, 2. Rectum—fistula in ano, 7; stricture, 1; hæmorrhoids, 6. Extraction of bullets and shot, 3. Sutured intestine, 2. Paracentesis abdominis, 2. Tenotomy, 1.

In this summary of 192 surgical operations, it appears at first sight very remarkable that only 11 terminated in death; but this is accounted for, as it includes the successful cases of an indefinite period of which the fatal cases are unrecorded. Of course in future reports this want of precision will not recur. The fatal cases noted are:

Amputation of the leg, 3: of which 1 died on the 3rd day, cause not stated; 1 in 5 weeks, from gangrene, having Bright's disease; 1 in 40 days, from pyæmia. Amputations at shoulder-joint, 1, complicated with severe laceration of the chest and back, died on the 9th day; 1 in lower third of humerus, after erysipelas, subsequent to a preceding amputation of finger from frost-bite; 1 of a toe for frost-bite, death in two weeks from gangrene and pyæmia. Excision of the wrist-joint, case of caries, death by erysipelas and toxæmia in two weeks. Trephining of frontal bone, three months after an injury, death in 14 days from erysipelas. Strangulated hernia, 1, after three days, death in six hours. Punctured intestine, 2: 1 died of erysipelas on the 22nd day; 1 died two months after being wounded.

Thus the eleven deaths are accounted for, offering a very small percentage, which may be attributed in due regard to good surgery; but allowance must be made for treatment in hospitals under 200 beds, not over-crowded, and, in the majority of instances perhaps, in private dwellings.

In addition to these cutting operations, there is a good proportion of fractures of all parts; but no cases of dislocation beyond those of compound character, complicated with fractures, for which amputation was had recourse to. The frequency of severe frost-bite in the hospitals of the Northern States on the Atlantic shore, affords a very good criterion of the severity of the winter climate by comparison with that of our own shores, although ranging from 10 to 15 degs. higher in latitude.

Further analysis, if space permitted, would display more fully the character of the cases under each operation, and the mode of procedure, from which much that is useful might be derived; but my last observation shall be on a subject which at present occupies professional attention, to show the practical use of anæsthetics in the nation to which their first employment is due. In a total of 101 cases in which anæsthesia was produced, in 66 it was by the use of chloroform, 25 by ether, 9 by mixture of both, 1 by nitrous oxide gas.

From the circumstance that these cases are gathered far and wide, over the surface of the United States, without any official direction or guidance which might lead to the employment of any particular mode of producing insensibility, we may accept it as a demonstration of a

strongly marked preference of chloroform to other anæsthetics in the hands of our professional brethren in America, notwithstanding the grand fact that the discovery of the powers of ether as a surgical adjuvant was due to them.

With these statistics before us for a mercantile navy of no greater extent than our own, the necessities of sick and wounded seamen can scarcely be doubted. We cannot but lament that, in our case, no special means are taken to relieve them among a class of men on whom the commerce of our country depends, and towards which in the prevailing policy of reducing the Royal Navy to the lowest peace scale, the nation must look to man its fleets in the event of war. Under such circumstances, I cannot hesitate to express a fervent hope that the great question of adequate attention to the necessities of sick and wounded merchant seamen, will meet with due consideration in the inquiry about to take place into the alleged causes of the preventable sacrifice of their valuable lives through the unsound nature of vessels in which they embark, because governmental supervision is evidently as much required to provide for their proper treatment when sick or hurt, thus tending to the prolongation of their lives, as in the prevention of their loss of life through the cupidity of their employers.

It would be gratifying to find this important question followed out by some member of the profession more intimately acquainted with the state of our merchant navy than I am.

SEPTICÆMIA AND THE CATHETER.

By DAVID FERRIER, M.D.,

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THE valuable paper read before the Royal Medical and Chirurgical Society on February 25th by Dr. Dickinson, on the suppurative condition of the kidney frequently seen in connection with pelvic and vesical inflammation, induces me to bring into greater prominence than is usually assigned to it what I conceive to be, in the great majority of instances, the starting point of these and allied disorders of the urinary apparatus; and to endeavour to show that the means taken to relieve the patient in many cases aggravate the disorder, or induce pathological processes which lead to a fatal termination.

It is a commonly received opinion, though accurate clinical observers are beginning to doubt its correctness, that the ammoniacal decomposition of the urine met with in paraplegia, or generally in cases where the urine stagnates in the bladder, is the result of the fermentative action of the vesical mucus, and is therefore especially to be found in connection with vesical catarrh, where the secretion is formed in large quantity. There is not, as far as I am aware, a single trustworthy fact or experiment in confirmation of this assertion; and that the causation is different, it is not difficult to prove.

The tissues and fluids of the body, with the exception of the contents of the alimentary canal, do not in themselves contain the elements of putrefactive decomposition, and may, with due precautions, be kept for an indefinite period entirely free from such change. Assertions to the contrary have been made by several eminent chemists, but it is easy to advance fatal objections to their method of experimentation. The almost universal existence of putrefactive germs is by many regarded as a hypothetical assumption; nevertheless, the evidence is sufficient to make it a demonstrated fact. And in special relation to the subject under consideration, the existence or non-existence of such germs ought not to be a mere matter of opinion, as the practical results are of sufficient importance to demand serious inquiry. Experiments which I made with Dr. Burdon Sanderson, and which I have since repeatedly verified, establish quite conclusively that fluids prone to decomposition may be kept unaltered for an indefinite period, and that decomposition may be at once initiated by the addition of a drop of water, or even contact with an apparently clean surface. Such contact, even with the finger, is sufficient to determine the growth and multiplication of microscopical organisms, which are the active and only agents concerned in the putrefactive process.

Urine in itself, apart from such contamination, is not liable to decomposition. In illustration, I adduce an experiment which I recently made. A small quantity of urine—phosphatic, containing mucus, but not ammoniacal—was passed directly into a flask previously purified by heat. A plug of cotton-wool was then inserted, and the flask set aside, without being boiled or otherwise interfered with. For a whole year the urine remained clear, with phosphatic sediment, but free from decomposition and organisms. After being opened for examination and again

set aside, it began to decompose and turn ammoniacal, and contained immense numbers of bacteria and torulæ. The simple bringing into contact with the urine a surface not freed from germs—an ordinary glass rod—was sufficient to initiate the putrefactive process. The introduction of a catheter would have been a still more effectual way of setting up this change; for catheters are rarely so clean, and are usually covered in abundance with the effective agents of putrefaction.

The application of these facts to urine still contained in the bladder requires little elaboration. Urine, as secreted by the kidneys and accumulated in the bladder, will remain free from decomposition so long as there is no direct source of impregnation with putrefactive germs from without. The ammoniacal condition of the urine in paraplegia might seem, at first, to contradict this assertion. It will be found, however, on careful examination, that the ammoniacal state of the urine frequently met with is the result of inoculation from without, and almost invariably from antecedent catheterisation. I have no desire to dogmatise on this point, or to deny the access of germs in any other way. It is possible, for instance, that a catarrhal condition of the urethra may afford germs a means of access to the bladder, in a manner similar to the supposed function of the mucus of the cervix uteri in impregnation. In ordinary conditions of the urinary passages, however, the bladder is closed against such contamination from without. The usual sequence of events in the clinical history of paraplegia is that the urine, at first clear and acid, gradually turns ammoniacal, during which period the catheter has been employed. It is not necessary to adduce evidence of this at any great length, as cases in point may be found in most hospital reports. As an instance, I quote a case reported by Mr. Gray in the first volume of the *London Hospital Reports*, on which I accidentally lighted while searching for something else. A lad was admitted into the hospital nine days after a fall, which had fractured his sixth cervical vertebra, and caused complete paraplegia with incontinence of urine. He had not been medically attended in the interval between the accident and admission into the hospital. On his admission, "the catheter was passed at once, and a considerable quantity of clear urine was drawn off; it gave an acid reaction. The urine, which was clear and acid at first, was thick and alkaline the next day, and the day after phosphates were found in it. In a week it became strongly ammoniacal, and contained pus." (P. 193.) And such is the usual history of these cases; the ammoniacal and purulent urine follows the introduction of the catheter into the bladder.

In a great number of instances in which the catheter is introduced, the admission of putrefactive germs into the bladder is a matter of no moment, for the bladder can be readily and entirely emptied; and even though decomposition should develop itself, little or no harm might result if the tissues were otherwise healthy or possessed of the ordinary amount of vital resistance.

It is far otherwise, however (and it is here where the facts brought forward have their importance), when the bladder is in an atonic condition or when it is paralysed, or where permanent causes of obstruction exist, such as the enlarged prostate in old men, and more especially when there exist other causes of vesical irritation, such as a calculus in the bladder, or where there is structural degeneration of the kidneys. In these cases, the irritant ammoniacal decomposition set up by the introduction of a catheter into the bladder is frequently the starting point of the inveterate cystitis and inflammatory condition of the ureters and kidneys described by Dr. Dickinson. In many cases, cystitis originates entirely in this manner, and the surgeon is at a loss to discover its cause, when all care has been taken to introduce the instrument and avoid mechanical irritation of any kind. The *post mortem* examination of the case already alluded to in the *London Hospital Reports*, discovered intense cystitis, phosphatic encrustation, and pyelitis in one kidney, for which *mechanical* irritation by the catheter was not responsible, but certainly *vital*. Where cystitis already exists from calculous irritation, the condition is intensely aggravated by the catheter or sound. An additional and permanent source of irritation is introduced by the instrument. The ammoniacal urine causes increased irritation, and by converting the mucus and pus of the already inflamed mucous membrane into a gelatinous mass tenaciously adhering to the walls of the bladder, affords a permanent nidus for the putrefactive agents, not removable by ordinary methods of emptying the bladder. Hence, continuous decomposition, phosphatic deposit, and irritation are the consequences.

These pathological changes, of themselves, are of grave moment; but, when the process extends to the kidneys, the danger becomes increased in a twofold manner. In addition to the interference with the excretory function of the kidneys caused by this pathological condition, which of itself might lead to a fatal result, the coincident condition of the bladder hastens this result in another way. As has been shown by

Treskin, the contents of the bladder stand in relations of diffusion with the blood and lymph in its walls, and urinary products are again reabsorbed into the system. The kidney being inadequate, and septic ammoniacal urinary products being absorbed into the blood, uræmic poisoning is the necessary result. That uræmic poisoning may originate from the use of the catheter without antecedent vesical or renal irritation is not only probable, but borne out by clinical observation. My friend Dr. Fothergill has furnished me with particulars of two cases of death from uræmia, for which this seemed the only discoverable cause. Both were cases of men of advanced age, and suffering from incontinence of urine caused by over-distension from enlarged prostate. Both were, in other respects, in good health, till the catheter was passed; and in both, after this operation, symptoms set in in a few days which terminated fatally, with all the characters of uræmic poisoning.

In view of these facts, the causes we have mentioned, though apparently trivial, are of sufficient importance to demand the serious attention of the surgeon. If the simple precaution were taken of using carbolic acid oil instead of ordinary oil for lubricating the instruments passed into the bladder, we should have less cystitis and fewer cases of "surgical kidney." The same remarks are applicable to obstetric operations and puerperal septicæmia.

CLINICAL REMARKS ON THE RELATION OF PSORIASIS WITH NERVE-DISORDERS.

By GEORGE GASKOIN, Esq., Surgeon to the British Hospital for Diseases of the Skin.

THAT herpes may ensue on neuralgia, is a fact scarcely open to challenge. What is less appreciated and less easy of demonstration is, that other eruptions may follow in the same sequence. As to this, I have lately seen an eczema which ensued on a severe neuralgia in the anterior crural nerve. A singular arrangement of the patches in a case of psoriasis guttata has also arrested my attention, and led my thoughts to the subject. These patches were of the size of a shilling-piece, oblong in figure, distributed unequally on each side of the spinal column; few and scanty on the left, abundant and crowded on the right side near the scapula and the median line. Their long axis in either case was directed downwards and outwards from the latter. The major group in the right dorsal region gave rise to two straight prolongations, consisting each of three or four equidistant patches, which, lying an inch or more apart, were produced downwards toward the loins and ilium, also slightly in the outward direction. Widening out in their descent, these lines were less proximate below than above, and thus gave one the idea, false or otherwise, of their arrangement being dependent on some nervous distribution. The patient was a lad sixteen years of age. The attack occurred two weeks since, and came on suddenly with much pain and heat, not differently from herpes.

It has happened only once to me lately to find marked anæsthesia in psoriasis or lepra Anglicana, but this was of a most unmistakable character. The fact was not inquired for, but was repeatedly complained of by the patient as a source of great discomfort. The leprous scaly patch where it was noticed was of considerable size, and situated over the ligamentum patellæ. A sensation of numbness and annoying insensibility was complained of at each visit, and it continued for several weeks. The patient was a young woman low in stature, not otherwise remarkable, with no obvious hysterical tendency.

I may be allowed, perhaps, to extend these remarks on psoriasis as seen in my *clinique*. There has been recently a well marked case of the gyrate form. The man's arms appeared as if he had been released from thongs, or from being bound with strong cords; the markings were chiefly in the oblique direction. Being treated with tarry preparations, the patient complained of a feeling of tightness quite insupportable. I see very many cases of psoriasis in which the palms and soles of the feet are affected, the rest of the body being often free from eruption. The hands, as I think, are oftener affected than the feet, but more frequently both together. The greater number of these cases I believe not to be syphilitic, though undoubtedly a certain proportion of them are so. In a recent instance, such a form of complaint had preceded syphilitic infection, and was afterwards complicated with its results. Altogether, it is with psoriasis as with acne; its existence in the syphilitised is not altogether decisive as to its syphilitic derivation. Of psoriasis of the tongue, I may say with some reserve that nearly all such cases are syphilitic. Of such I see a great many; and, judging by daily experience, I should call this affection of the tongue the most ordinary result of syphilis. It is certainly that