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A Thesis Vide Finis

on

Retention of Urine.

Some of its forms, and their treatment.

With

A few preliminary Observations on

Healthy Retention of Urine, and Micturition

By

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Before proceeding to the consideration of morbid retention of urine, it may not be amiss to make a few preliminary observations upon healthy retention, and the complex function of micturition.

A knowledge of Anatomy in general and of the perineum, urinary bladder and urethra in particular, is essentially necessary in order fully to comprehend these actions; but as such knowledge, I shall take for granted, is already attained by those who take an interest in the subject, I do not deem it desirable to introduce a full anatomical description into this paper. I will merely remark that, the bladder may be placed in the same category with the stomach and rectum;— like them, it has its three coats; its muscular fibres are of the organic variety; its nerves are furnished from the same system as the intestinal tube; it is acted on and excited to contraction at certain intervals, by its peculiar stimulus (the urine); and I am persuaded, the analogy will hold good as regards the outlet, it also

undoubtedly is guarded by an apparatus under the control of the will.

Sir C. Bell set apart a number of circular fibres at the neck of the bladder, immediately behind the prostate, to which he assigned the office of a Sphincter. The continuity, however, of these fibres, with the rest of the circular fibres of the bladder, and the similarity of the nervous supply, would seem to militate against the idea, of their acting otherwise, than in harmony with the rest of the Muscle in the expulsive movement of the Viscus. Gathrie, doubtless saw this defect, and instead of Sir Charles Sphincter, he substituted an elastic one of his own, which he placed at the neck of the bladder and in the prostatic part of the urithra. This opinion has obtained very generally, to the present time.

W. Hancock in his very excellent and laborate researches, into the Anatomy and Physiology of the Male urithra, after tracing the Circular Muscular coat of the bladder, into the substance of the prostate, lets off a portion of it, to act as a Sphincter, which he makes to contract upon the tissues Elastic

and non elastic", that intervene between them and the mucous membrane of the urethra and neck of the bladder, as upon a pad. In this way Mr. Hancock alleges that healthy retention of urine is maintained during the intervals of micturition.

Dr. Dreuinas Hodgson, in his work recently published upon the prostate gland, while he ignores the sphincter of Sir C. Bell, and also that of Mr. Hancock, and to a certain extent, the elastic apparatus of Mr. Guthrie, leaves us without a guard either voluntary or involuntary upon this important outlet (!) He says:- "My own view is, that these particular fibres"- alluding to Mr. Hancock's- "and those of the rest of the urethra "are perfectly quiescent during the intervals "of micturition, in the same manner as those "of the bladder itself; that the prostatic urethra "and neck of the bladder, with the rest of the canal "are kept closed during the intervals of micturition, by means of the elastic tissue in their "walls, quite in the same manner, as the "bladder is kept in apposition with its contained urine; and that the muscular fibres

" of the bladder and urethra are simply employed
" in Expelling the urine at intervals". He adds,
" There can be no doubt that the longitudinal
" mucous folds of the prostatic urethra, with
" the Verumontanum, fit into Each other in
" such a Manner, as to render the escape of
" urine through the urethra impossible.

I certainly am at a loss to imagine, how any of the above cited Means, for maintaining healthy retention of urine, can be calculated to meet the Exigencies of the Office assigned to them. If we consider for a Moment the forces, both natural and incidental, that are to be resisted by the retentive powers of the Outlet of the urinary reservoir, the resiliency attributed to the tissues that surround the urethra, will appear of very doubtful Efficacy for the purpose. My own Opinion — and I submit it with due deference — is, that healthy retention of urine is maintained by a nicely adjusted Muscular Apparatus - of the voluntary order — arranged External to, and in such relation with the urethra, as to act most Efficiently

in stopping up, and maintaining the occlusion of that membranous aqueduct. Its construction is as follows:—

A number of muscular fasciculi taking their origin from the posterior inferior border of the pubic arch at the symphysis, pass downwards and backwards immediately in front of the prostate gland, overlapping its apex on either side of the urethra, where some of the fibres seem to be inserted, while others pass on with the fibres of the levator ani. Santorini named this muscle, and I think rightly, the "levator prostatæ". Its action is to tilt upwards the apex of the prostate, and thus to cause the gland to perform the office of a throttle-valve at the very commencement of the urethra.

A little more anteriorly we have the muscle —or a modification of it— described by Mr. Guthrie as the "Compressor urethræ". It is a double muscle situated between the two layers of deep perineal fascia. It takes

its origin on either side from the ascending rami of the ischia. The lateral portions are symmetrical and pass inwards and upwards to meet at the median line, upon the membranous portion of the urethra. Its action is to compress, and at the same time to pull downwards that portion the urethra to which it is attached; and thus a second stop is placed upon the canal.

The third, and last muscle of the apparatus is, like the other muscles in this region, double, and laterally, perfectly symmetrical. It is misnamed the "Accelerator urinæ". It embraces the bulb, and the spongy portion of the urethra, as far forward as the curvature, formed by the fall of its anterior pendulous portion. By this arrangement the bulb and spongy portion of the urethra, serve as a compress in the grasp of the muscle, increasing its power, and obviously facilitating its action.

Now, if we regard for a moment, the

actions, and the relations of this important little trio-group of Muscles, it will be seen that, it forms an admirably planned hydraulic apparatus, Calculated most effectually, either to arrest the flow of urine, or to protect us against all oozing of water from the bladder. It will be seen, how the first Muscle, or that immediately in front of the prostate, acts by lifting up the apex of the gland towards the Symphysis pubis, thereby effecting the first Stop, by bending the tube (urethra), and the pressure exerted upon it, by the sharp edge of the prostate. The second Stop is situated as I have mentioned above, between the layers of deep perineal fascia. It is subsidiary to the first, in so far, as the traction made to effect it, is exerted in the opposite direction. Complete occlusion of the canal

is thus effected as far forward, as the anterior layer of the triangular ligament: the last drops of urine are at the same time, driven forward into, what is called, the Sinus of the bulb, where it awaits the contraction of the great Compressor of the urithra - the 'accelerator urinæ' - for its final expulsion. This completed, the Muscles that have effected it, remain in their wonted state of tonic Contraction, after the fashion of other Sphincter Muscles, until they are again called upon to act in obedience to the will. The nervous Supply of these Muscles is from the Cerebro Spinal axis. They form a System, and act consentaneously with those Muscles of the abdomen and thorax, that are called into play in the act of Micturition; and like other muscles of this class, their actions are both

voluntary and reflex.

Natural Micturition, then, I conceive is performed in this wise:— first by the involuntary, or Emotional Contraction of the Muscular Coat of the bladder itself; Second, by the voluntary elevation of the Muscles, I have described above, as governing the outlet; third and lastly, by the voluntary Contraction of the Subsidiary abdominal and thoracic Muscles. This view seems to gain Strength, if not Confirmation, from the pathological phenomena that present themselves in paralysis; for we find that loss of Control over any one, or more of the above Micturating powers, is amply sufficient to produce paralytic retention of Urine. If the Muscular Coat of the bladder be rendered incapable of Contraction from overdistension or other Cause, inability to void its Contents is the inevitable Consequence: if the Sentinel Muscles (A) Set over the outlet be

cut off from the influence of the will, by disease or injury low down in the Spinal Cord, retention of urine is equally certain; again, if the Sentinel Muscles, together with the subsidiary abdominal and thoracic muscles, be removed out of control of the will, by disease or injury of the Spinal Cord higher up, two at least, of the three micturating powers are destroyed, and the third—the contractile power of the muscular coat of the bladder—doubtless, in most cases of this description, is impaired, but certainly, in the first instance seldom annihilated, retention of urine is nevertheless certain, and that too of the very worst description. There is, at the present time, a case of paraplegia with retention of urine, under my observation, in this Establishment—The Royal Hospital, Greenwich—where the contractile power of the bladder is, and has been from the date of the accident that produced

the paralysis, considerably increased, as indicated by the force, with which the urine is ejected upon the introduction of a Catheter. This case contrasts strongly with one or two others, where there is considerable weakness, if not complete paralysis of the Expulsive power of the bladder.

I shall have occasion to revert to this Subject, when I come to consider paralytic retention of urine.

Retention of urine, pathologically so called, on account of the frequency of its occurrence; the very formidable nature of the Symptoms that accompany it; and its oftentimes fatal termination; is, I think, justly entitled to be called the Chief of Symptomatic diseases, and to a proportionate amount of consideration from the Surgeon, whose extempore knowledge, patience, Zeal and dexterity, will doubtless be frequently called into requisition, for the relief of this most distressing Complaint.

The Causes of Morbid retention of urine are of a two-fold nature:— first, it may be produced by Mechanical impediment to the flow of urine, along the natural outlet, the Micturating powers remaining unimpaired; or Secondly, it may be caused by paralysis of one or more of the Micturating powers, no other abnormal obstruction existing in the Course of the urethra:

Cases may occur that partake of the nature of both these forms.

It is difficult to imagine how retention of urine could be mistaken for any other disease — Such, for instance, as ascites, ovarian dropsy, or pelvic abscess. Yet strange as it may appear, blunders of this sort have been repeatedly made, and by men of high professional Standing and unquestionable Skill, as numerous recorded cases sufficient prove. It is therefore of the utmost importance, always to bear in mind that the causes of retention of urine are various, and that the Symptoms are sometimes anomalous and obscure. By so doing we shall be led to investigate the history, and make a careful examination, by all the means at our command, in every case where there may be the slightest shadow of doubt — in fine, to take nothing for granted in arriving at our diagnosis.

We frequently met with cases, where we have good grounds to conclude, from the history given by the patient, that retention of urine has existed for a considerable time, and not incontinence as he had supposed, but owing to the partial, or complete loss of sensation, as well as paralysis of the dilatating powers, none of the ordinary symptoms of retention were ever complained of. Extraordinary cases of this description are on record, where the bladder has become so distended, as nearly to fill the entire abdominal Cavity, and contain many quarts of water.

But, although Cases of retention have happened, and do still occur, the nature of which, owing to the obscurity that surrounds their causes and Symptoms, may occasionally elude our cognizance, When it depends on such Causes as Stricture, inflammation, or inflammatory Congestion, or sudden stoppage of the flow of urine

from whatever cause, with more or less intolerance of the bladder, both the physical Signs and Symptoms are well marked, and the nature of the Complaint obvious, even to a Superficial observer. The symptoms are, a Sense of irritation or pain in the glans penis – the desire to pull and compress the part is irresistible, the patient cannot withdraw his hand – Scalding pain in the Course of the urethra and in the perineum; frequent and ineffectual attempts to pass water; a Sense of weight and inscribable torture about the pelvis; pain in the hypogastrium, which at a later period extends up to the loins in the Course of the ureters; a hard circumscribed pyriform tumor may be felt on the Mesial line above the pubic arch. more or less tender on pressure, dull on percussion, and not affected by change of posture; fluctuates wherever it

may be reached, either above the pubis, or from the rectum. As the distension increases, so the pain and the spasmodic action of the bladder, become more frequent and distressing, the tenderness in the hypogastrium also increases; Every attempt at micturition causes straining and tenesmus, and bearing down like the throes of parturition. These attempts, if not wholly ineffectual, at most only afford a few drops of bloody urine are voided, and altogether fails to afford the slightest relief. The pulse, which at the outset, was very slightly, if at all accelerated, now becomes frequent, probably small or thready, vigor succeeds to chill, and the vigor in its turn is superseded by heat of skin, dry tongue, et cetera; the unhappy Sufferer reduced to the very verge of despair, writhes from one position to another in a fruitless search for Ease. At length if relief be not obtained, the Spasmodic action of the bladder becomes

weaker, and at last subsides, and with it the excruciating pain, tho' not the tenderness disappears; the patient expresses himself easier. The general symptoms now, however, but too clearly indicate that his system is already labouring under the baleful influence of the poison, viz: the pulse is considerably accelerated, small in volume, and most probably irregular in rhythm; tongue parched, thirsty, skin hot and dry — all the symptoms of irritative fever have set in. If now, at the eleventh hour, the bladder be not speedily and effectually relieved, the patient soon becomes typhoid: a small fluttering pulse, mouth parched, tongue dry brown and stiff, countenance dusky, pale and shrunken, hiccup, nausea or vomiting, jactitation and extreme restlessness, low muttering delirium, convulsions, coma at length

supervenes, and death closes the melancholy scene.

The fatal termination usually takes place between the third and seventh or eighth days. Sometimes owing to previous local disease, the more grave symptoms set in at a very early period; in others when the bladder has been comparatively healthy and tolerant, those grave symptoms may be deferred, the walls of the viscus may expand and accommodate a large quantity of urine, until at length the tension becomes so great that inflammation is set up, which - if the patient lives long enough - may proceed to gangrene. The incarcerated urine becomes fetid and ceases to descend from the kidneys - the secretion is impeded, then suppressed - and poisoning of the system is the inevitable consequence.

Rupture of the bladder is, I think, an exceedingly rare occurrence, except from violence,

It is, however, generally described by authors, though, as far as I can learn, without any cases from which to draw their conclusions. I have myself seen several cases where the patients suffered occasionally from retention of urine, for many years during their lives, and shortly prior to death, and where upon post Mortem Examination the bladders were found saccculated and pouched - in two or three instances to a very great Extent - Yet, in one case only, have I seen such a Complete solution of Continuity in all the three Coats, as to allow of the Extravasation of its Contents into the peritoneal Cavity, and the breach in that case was caused by ulceration. In the case of death, of a young woman of "Easy virtue", that occurred on board one of Her Majesty's Hulks at Portsmouth in 1854, it was alleged by the Medical Evidence adduced at the Coroners inquest, to have been caused by violence sustained in falling off a chair

applied to an ulcerated bladder, causing rupture and consequent death. There are many other cases of a similar nature, chronicled in the various Medical Journals and Periodicals. I have, however, failed to discover a single case, that would go to show, that rupture may result from distension alone.

From the foregoing observations we may perceive that, when the nice adjustment that subsists between the micturating powers, is disturbed in such a way, as to cause retention of urine; or when there exists direct mechanical impediment, in the outlet of the bladder, that organ does not burst, and throw its fiery contents into the peritoneal cavity; no, but by opposing the strength of its gradually yielding walls, to the secretive power of the Kidneys, at first impedes and then arrests the action;

and thus an interval of time is mercifully
afforded for the interposition of art, which
may be the means of averting for a time, the
inevitable doom that awaits our unhappy
patient. In this admirable arrangement
how clearly may we discern traces of
the Hand that made us!

Retention of urine produced by mechanical impediment, in the course of the natural outlet of the bladder, the micturating powers remaining, more or less, unimpaired.

Retention of urine from spasm, or abnormal contraction of the muscles, set to guard the urinary outlet, is the direct antipodes of retention from paralysis of those muscles - a form which I shall subsequently have occasion to describe. The modus operandi of Spasm in producing retention of urine is so obvious, that I shall not attempt to define it. When it does occur in its uncomplicated form, it is usually met with in the decline of life. It generally supervenes upon a debauch of some sort or another, exposure to cold, overindulgence at table; it may also be excited by stone or other source of irritation in the bladder itself, by ascarides in the rectum; the internal

use of Canthanides, or the absorption of its active principle by a blistered surface. It may be situated at the neck of the bladder, or in the course of the urethra, at the several stages I have previously described in my observations on healthy retention of urine, as being placed at certain intervals upon that canal.

The principal symptoms, are a frequent and urgent desire to micturate, pain and scalding in the perinæum and course of the urethra, a sense of constriction in the pelvis accompanied by a sharp lancinating pain, of a remittent character; restlessness the pulse is not generally affected, though the patient is considerably hurried.

Although urinary retention from idiopathic Spasm, is by no means a rare occurrence in the class of persons indicated above, if we descend a little in the scale of age, we shall find that it is much more frequent

but with as a consequence of spasm, supervening upon organic stricture, or inflammatory engorgement of the tissues that surround the urithra; and oftener still, shall we find cases where all these three causes are associated.

It becomes, therefore, a matter of paramount importance - with a view to the proper and scientific treatment of this numerous, and important class of cases - fully to understand the part played by each of the above elementary causes, in producing the impediment to the flow of urine, in any particular case. Sometimes we shall find one, sometimes the other predominent, and oftentimes shall we find, that organic stricture took the initiative. If our patient has suffered from the latter affection, he will not hesitate to inform us of the fact, and date its commencement from a previous attack of gonorrhoea, more or less remote, or probably

from the use of remedies injudiciously employed for the cure of that disease. He will say that his stream of urine has been gradually decreasing in size, and becoming more tortuous, and that the difficulty experienced in expelling his water, has proportionately increased. If we question him, as to his state immediately prior to the occurrence of retention, we shall have no difficulty in arriving at an accurate estimate, of the part played by organic stricture, in producing the stoppage.

It now remains to determine what is due to spasm, and inflammatory congestion, in causing the complete occlusion of the urethra: In this, we shall derive material assistance, from our knowledge of the previous history of the patient, above referred to; the immediate exciting cause of the attack, and the nature of the local symptoms present. Violent horseback Exercise, Exposure to cold or damp, Gonorrhoea, Venereal and drinking

debauches, are each, or a combination of them amply sufficient to excite inflammation in a urethra, already predisposed to it, by the existance of permanent stricture. If upon any of these excesses the attack supervenes; our patient is suffering from severe scalding pain in the course of the urethra, and in the glans penis, a feeling of weight and throbbing in the perinæum, an intense desire to urinate, and violent straining, with perhaps the passage of a few drops of bloody urine. We may safely infer that a considerable share in the occlusion is owing to inflammation. How much is owing to spasm is not so easily ascertained a priori — we must judge of it, more by the effect of remedies. It is in this class of cases that the extempore knowledge, zeal and dexterity, mentioned in the first paragraph of my general observations, will be brought to the most severe test; and I think I may

safely say that, the Surgeon who neglects to make himself acquainted with their nature and treatment, will, when he is called upon to relieve them, to a certainty, find himself much perplexed.

Now, by attending to the foregoing analysis, the indications for the treatment of these several forms of urinary retention will, I conceive, be much simplified and rendered rational. If the case be one of Spasm, the hot bath, Opium and Chloroform or Ether given by the mouth or in the form of Enema, seldom fail to subdue the abnormal muscular action, and be speedily followed by a free discharge of urine, much to the comfort of our distressed patients. I have seen excellent results from the use of what might be called the Perineal Chloroform-vapour-bath. It is exceedingly convenient in its application, and may be had at any time in the space

Good

of a very few minutes: The pan of a night Chair is half filled with hot water, on which may be poured a drachm or two of Chloroform; this done, the patient is to be placed upon the seat in the usual manner, well wrapped up in warm blankets, I have frequently seen this plan tried successfully. If the case be a severe one, Morphia, ether and Camphor Mixture may be administered. Recourse is very seldom had to the Catheter; in such cases it would be positively injurious. Generally speaking, when once it is relieved, the retention does not recur, until there is a repetition of the exciting cause.

If we find that inflammation or inflammatory Congestion, accompanied by inordinate muscular contraction, are predominant features, the remedies indicated are obvious: the above treatment, recommended for Spasm, with the addition of a bunch

or two of leeches to the perineum, to palliate inflammation, or relieve the congestion, will in most cases succeed. Sometimes, but I should think, rarely, we may have recourse to general depletion. Brisk saline purgatives ought to be administered, and if the patient be plethoric, it is a good plan to combine with them, a small quantity of tartar emetic. The catheter must not be thought of — it is wholly inadmissible, until the inflammation be, at least, considerably abated — no benefit can result from its use, and if injudiciously and clumsily persisted in, irreparable mischief may accrue to the urethra of the unfortunate victim. If our other remedies fail to afford relief, better would it be to fall back upon the Nicotina of

the late Mr. Earle†, than to do violence to the urinary passage, by an ineffectual attempt to pass an instrument through it, in a highly inflamed and spasmodically contracted state.

But if on the other hand, we are induced to conclude, from our investigation of the previous history of our patient; and a careful local Examination of the urethra, perineum, and prostate Gland, that organic stricture is the predominant cause of the retention, with but little subsidiary inflammation or Spasm, much time ought not to be wasted in the use of remedies, that must, from the nature of the disease, prove totally unavailing: recourse must be had, and that without delay, to the Catheter. The choice of the instrument altogether rests with the operator - Some prefer gum-elastic, Some the polished Silver, I certainly am of

† See Medico Chirurgical Transactions Vol VI P. 82 &c.

opinion, that the Surgeon who knows what he is about, will always give a decided preference to the nicely polished silver instrument. I have never seen success attend the use of the gum elastic, where there existed any serious difficulty. There is, however, a strong predilection for it, still existing in certain high quarters - but it is a remnant of the "old School".

Occasionally, the most experienced and skilful Surgeon, will be foiled in his attempts, to pass any instrument into the bladder, owing to the complete occlusion - Professor Lyons admits the possibility of such an occurrence - or perhaps the tortuosity of the urethral Canal. In the event of such a case occurring, which is happily now a days very rare, we have a variety of operations at our Command, for the relief of the distended viscus, in the selection of which we ought to be guided by the peculiarities of the case

before us. I may here observe that nearly every Surgeon has his favourite Operation, and will advocate its applicability, whether rightly or wrongly in every case(!) Artist-like, every man doubtless, succeeds best in his own Style(?)

If then the Surgeon, having exhausted a very large stock of patience, and every plan his ingenuity could devise, has utterly failed to pass a Catheter into the bladder, — the symptoms of retention are becoming very urgent, and there is danger of extravasation menacing our patient — What is to be done? Recourse must be had to the trocar, or the Scalpel for the immediate relief of the distended bladder.

In such a state of things, puncture of the bladder through the trigone, from the rectum, where such a procedure is not strongly contraindicated, has many decided advantages. Sir B. Brodie writes of it, "The operation is simple, free from pain and "danger". If we examine the published

Cases — and I fancy there are but few instances of this operation, that do not find their way into print — all are confirmatory of its simplicity and usefulness. I must not be misunderstood to insinuate, that such a procedure ought to be the dernier ressort of clumsy and unskilful manipulation. God forbid, I should ever be so unfortunate, as to see, or even hear of a trocar, being placed in the hands of a man, not thoroughly conversant with the use of the Catheter! I do not however, hesitate to say that, it may prove itself invaluable, in the hands of a Practitioner who, probably has had neither opportunity, to "keep up" his knowledge of Anatomy; or who, doubtless would shrink from the more difficult, and grave operation of perineal Section, single handed.

It is impossible to praise Mr. Cock's very excellent paper on this Operation — Puncture of the bladder by the rectum — read to the Royal Medico Chirurgical Society, April 18

1852. and published in the XXXV volume of the Transactions, without being impressed with a favourable opinion of this operation. Nevertheless, there seems to be a general feeling of dread amongst Surgeons of puncturing the bladder at all!, why, I am unable to discover. The late Mr. Liston, of glorious and immortal memory, says of this Operation:- "Should the Surgeon fail in passing the Catheter, "the bladder must be relieved at all hazards; "and if the prostate be coma, puncture by "the rectum may be performed. This is "neither a difficult nor dangerous "Operation, else it would not be so often "resorted to." Again he says, after stating that only temporary relief is obtained from puncture;- "but then the urethra still "remains to be put in proper Condition"[2] Now, Mr. Cock's case above referred to, shows that when the pressure and irritation of the urine are withdrawn, there is a strong tendency to Self-reparation

[2] Elements of Surgery by R. Liston P. 135.

in the urethra — indeed, a great many of that Gentleman's cases, hardly required the subsequent introduction of instruments, for the purpose of dilatation; Moreover, now with the improved appliances of Mr. J. Wakely and others, such a consideration is much weakened, and I certainly think that puncture, with such auxiliaries, will be long superseded — and justly too — the necessity for incising the perineum, at least for the relief of retention of urine.

Retention of urine from paralysis of one or more of the micturating powers; no other abnormal obstruction existing in the course of the urethral Canal.

I have already stated that paralytic retention of urine may be caused; first, by loss of the Contractile power of the muscular Coat of the bladder, or Certain Abnormities in its Emotional action - of which I shall presently give one or two illustrating Cases: Secondly, by loss of voluntary power over the muscles governing the urinary outlet; and thirdly, by paralysis of the auxiliary abdominal and thoracic Muscles; or there may be a Combination of two or more of these causes. I shall now proceed to describe more fully, the different forms of retention that occur under these Several heads; and first as regards the bladder itself.

The Effect of overdistension, in weakening the expulsive power of the bladder may have been, at one time or another, experienced by many persons, who are in the habit of attending Oratorical Meetings balls or Evening parties &c. and who are therefore, frequently obliged to retain their urine to an undue Extent; how if this voluntary retention be persisted in, involuntary retention is almost sure to follow — Complete paralysis of the muscular Coat of the bladder is the consequence.

This form of paralytic retention of urine is sometimes met with in women, who have just passed through the ordeal of a tedious and difficult labour. Paralysis of the muscular Coat of the bladder oftentimes occurs in low fevers, where delirium or torpor is present; or where the system is suffering

-ing from severe shock of any kind. In all such cases too much attention cannot be directed to the urinary organs — Careful inquiry into the condition of the bladder, ought invariably to be made, in order to guard against such an untoward complication, as retention of urine.

Cases of retention, from loss of the contractile power of the muscular coat of the bladder, are by no means rare, where the affection comes on gradually, and so far as we are able to make out, without any apparent cause. This form of retention is principally met with in persons of advanced age — indeed, I am inclined to believe, from my experience among the old pensioners of Greenwich Hospital, that retention from this cause, is more frequent, than from enlargement of the prostate gland.

It sometimes occurs in individuals, younger in years, but who have led dissolute lives, and have been addicted to all kinds of vice. The patient observes that he is unable to expel his urine, with any degree of force, and like if belonging to the latter class of patients — who too often take a sort of morbid pride in their infirmities, both moral and physical — informs his Medical attendant, in a jocular way that, "he cannot piss over his boots". This symptom increases, until at last he is quite unable to empty the bladder — distension takes place. The urine now begins to dribble away incessantly, much to the patients discomfort, and offence to the olfactories of his friends. It is generally at this advanced stage of the disease, that the patient and his friends — after having first exhausted all the nostrums the Charlatan could devise — apply to a

medical man, for a cure for incontinence of urine, and are much surprised to find, upon the introduction of a catheter into the bladder, that instead of that viscus being empty, as they had supposed, several pints of urine flow out.

Persons are occasionally met with in whom - owing to some peculiar idiosyncrasy - a moderate dose of opium will suffice to disturb the nice equilibrium that exists between the micturating powers, in such a way as to cause retention of urine. I am acquainted at the present time, with a person who suffers in this way, after the use of opium. The rectum also becomes more or less paralyzed, though the sphincter does not give way. It is only by calling into forced action the voluntary muscles that even an attempt can be made at micturition or defecation.

Another cause of this form of retention, is

imperfect volition, or a peculiar deficiency of Emotional control, over the expulsive power of the bladder. The subjoined case, which occurred a few years in my own experience, will serve well to illustrate this Condition:—

An Officer of 25. with whom I was personally acquainted, and into whose society I had the pleasure of being much thrown, made known to me his peculiarity in "pumping Ship", as he jocularly termed it, — which by the way, I had previously discovered myself, and on more than one occasion had taken a mischievous pleasure in imposing my society upon him, at the very time he least desired it. He declared he could not void a single drop of water, if anyone were present or indeed, to a certain extent within sight or hearing, although sometimes in considerable distress. He had no difficulty

however, in performing the function
when he has first satisfied himself, that
he was perfectly secluded.
That form of retention of urine commonly
met with in hysterical females, seems
closely related to the above. It is not,
in this case, a dangerous complication,
and seldom calls for surgical inter-
ference.
Secondly; paralytic retention of
urine, may be caused by the removal
of the muscles governing the urinary
outlet, from the influence of the will.
by disease or injury in the lower
part of the spinal cord; the integrity
of the expulsive power of the bladder,
and the subsidiary abdominal and
thoracic muscles remaining intact.
That such a case may occur, I think
is beyond a doubt; for if the contractile

power of the bladder remains unimpaired in paraplegia, involving the abdominal muscles; why should it not, where only the sacral plexus or caudal extremity of the cord has suffered? An injury likely to be sustained in falling on the buttocks. The following extract of the case formerly alluded to, will serve to illustrate this important point.

J. R. ætat 32 a marine; was admitted into Melville Hospital September 12th. 1855. for treatment of an injury occasioned by falling from the roof of a Cook-house in H. M. Dock Yard at Sheerness. "The spine "was injured by the fall, and both lower "extremities are paralyzed" Both sensation and volition were destroyed as high up as the "navel". He was transferred to the Royal Hospital Greenwich January 22d. 1856. when upon admission the following note of the case was made:- "At present

" there is no deformity of the spine, but there
" is tenderness on pressure over the last
" dorsal, and all the lumbar vertebræ. The
" lower Extremities are somewhat attenuated;
" he can move them, but they cannot support
" the weight of the body. The bladder is
" completely paralysed —— N°. 9 Catheter
" introduced without any difficulty, and
" nearly a pint of urine drawn off. &c.
What is here called "Complete paralysis of
the bladder", simply means Complete inability
to void urine — this point I wish particularly
noted. This patient has now been twelve months
under my observation, and during that
time I should say, I have myself, at least,
introduced the Catheter fifty times, and I
feel perfectly justified in saying that,
so far from there ever being anything
like want of Contractile power, in the
muscular Coat of the bladder, the urine
was always ejected with unusual force

even whilst the patient was in the recumbent posture. In this respect the contrast between this case, and others at the present time in the Hospital, of real paralysis of the muscular walls of the bladder, is very marked; in the latter the urine flows but slowly through the Catheter, even whilst the patient is in the Erect posture, while in the recumbent it is necessary to use pressure in the hypogastrium, in order to Effect the evacuation of the contents of the bladder. He is now gradually regaining the use of his limbs, and with it, a certain amount of power of voluntarily voiding his urine.

In the third place, when disease or injury of the Spinal Cord occurs higher up - about the lower part of the dorsal region - all control over the micturating powers is completely lost. Paralytic retention of urine of the very worst description is the

Consequence.

Rokitansky writes:- "A very important variety
" of vesical inflammation, is that developed in
" the course of paraplegia; it generally passes
" into gangrene and terminates fatally. The
" mucous membrane becomes the seat of extensive
" congestion, and suffusion". From this state
of congestion of the mucous membrane, this
distinguished pathologist runs the organ
through the various steps of inflammation
until he arrives at the very acme of dis-
organization:- "The muscular fasciculi are
" ash-coloured and friable, and the cellular tissue
" is infiltrated with pus and sanies. The cavity
" of the bladder contains a sanguineous, dirty
" brown, or chocolate-coloured urine, of a
" pungent ammoniacal odour".
That there is a strong tendency to the develop-
ment of vesical inflammation in the course
of this disease, and that this inflammation,
if neglected, may pass into a state of
gangrene, is a well established fact.

/ Rokitansky's Pathological Anatomy Vol II P. 226.
Sydenham Society Edit.

but that gangrene and death are the consequents, and "general results", I think requires some qualification.

Catarrh of the lining membrane of the bladder, is almost a constant concomitant of paralytic retention. It gives rise to a copious secretion of mucus, which doubtless promotes decomposition in the constituents of the urine, ammonia is formed which in its turn, reacts as a powerful irritant to the mucous lining membrane; and if the case be neglected, more or less inflammatory action is set up; pus or mucopurulent matter is secreted in large quantities; lymph exudation may be thrown out; ulceration and sloughing may occur — and all this without the unfortunate patient experiencing any of the usual local vesical symptoms.

In the treatment of paralytic retention of urine, we must be entirely guided by our knowledge of the nature of the causes of the affection. If it depends upon an injury, or idiopathic organic disease of the brain or Spinal Cord, it would be highly injudicious to administer remedies, over the purpose of stimulating the Excito-Motory System; they cannot possibly do any good — on the contrary, they may increase the mischief, by hastening the advance of the lesion already Existing. In such cases, our grand object must be to remove, or mitigate the abnormities in the Cerebro-Spinal axis, by the judicious employment of appropriate remedies; and at the same time, we must not neglect to address such remedies to the bladder itself, and kidneys, as are known to act beneficially upon the mucous lining membrane, and upon the urinary Secretion; both of which, owing to the liability to Catarrh in the one,

and the proneness to decomposition in the other, require diligent watching.

The catheter, in all forms of retention of urine from paralysis, is our "Sheet Anchor"; there is generally no difficulty in its introduction in such cases. We must be guided as to the frequency of its employment, by the quantity and particularly the quality of the urine; the sensations of our patient;— If the urine be ammoniacal, or in any way tainted, it will be necessary to empty the bladder more frequently, lest the presence of such irritating fluid, might give rise to inflammatory complication— We ought never to allow the bladder to become distended, so as to cause the slightest inconvenience to the patient. Strict attention must be paid to the state of the stomach; it is remarkable, the effect the slightest indiscretion in diet in this disease, has upon the urinary organs. I have seen the urine loaded with pus, and copy ameus the next

morning, after over indulgence in tea-Cups and plum-pudding. Gentle purgation ought not to be neglected, it is universally admitted to be of the greatest service, as an auxiliary, in restoring tone to the muscular fibres of the detrusor. When there is much mucous discharge, with other symptoms of catarrh, antiphlogistic remedies must be had recourse to, more or less energetic, according to the urgency of the case, and ability of our patient: dilutes drinks &c. Pareira brava, uva ursi, and buchu, are occasionally beneficial, and may be usefully employed in combination with mineral acids or alkalies- due regard being paid to the state of the urine, in the selection. The tinct: Cubebæ. Ferri, the terebinthinates and balsams &c. may be tried — sometimes one will answer where another has failed.

When paralytic retention of urine, depends upon atony of the muscular coat

of the bladder, brought on by overdistension, or sudden shock to the system, old age &c. or where it is caused by functional disorder of the Excito-Motory system; or in cases where actual organic lesion, has existed in the brain or Spinal Cord, but has either been removed, or the adjacent part adapted to its presence, by the vis Medicatrix Naturæ, aided by judicious Medication. — In such cases the primary cause of paralysis of the micturating powers, being Wholly or partially removed, the nervous influence is to the same Extent restored, and Muscular irritability — so long dormant — may, or may not be proportionately called into action — Sometimes owing to long disease, the Muscular fibres will have become more or less unfitted to resume their office. In such cases the special remedies, for the purpose stimulating the nervous Energy, and Muscular Contractility, are oftentimes of the

greatest benefit. Of this class of remedies, by far the most powerful, is Strychnine. It is occasionally of great Service, but requires care in its administration, and Constant minute observations of its Effects. Its injection into the bladder, in a state of watery solution with a small quantity of spirit, has recently been recommended by a Frenchman named Leclerc; Two or three Cases where his plan proved successful are given in the "Monthly Journal of Medical Science" 1850 Page 176. Arnica Montana is much lauded by many German writers, and by some no mean Authorities in our own Country. I have myself seen decided benefit accrue to the Patient from its use; and I am inclined to believe that its action, is chiefly exerted locally, upon the muscular fibre, and lining of the bladder. Cantharides is also a very useful remedy, but, owing to its well known Effects, in inducing

strangury, requires caution in its administration. It may be given with camphor mixture. The Ergot of Rye is very highly spoken of by Dr. G. E. Day, he says: "I have recently been led to use Ergot of Rye "very extensively in this affection" (Paralytic retention of Urine) "with the best results "and I feel assured, that it is much more "to be depended on than either the above "tinctures;" referring to the tinctures of Arnica and Cantharides. I have no experience of the effects of the Ergot in this affection; of its marked control over Uterine Muscular contractility, I have seen enough to convince me. The tinctura of Muriate of Iron; Cold Sponging; Electro-galvanism; frictions to the Spine and around the pelvis; Counter irritation — Sometimes one, or a judicious combination of these remedies, may prove of signal advantage. Above all, however, it is essentially necessary to keep a steady eye upon the general health of our

† Domestic Management and Diseases of Advanced Life. by Dr. Day, P.P. 241-42

patients; and if needs be to intermit, or postpone apart or the whole of our special remedies, to make way for a general tonic, or hygienic treatment.

Why good, so far as it goes.

Much left out — as Prostatic Enlargement, bloody urine - abscess &c