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Constructure of the West有一定的
by
James Wilkins.
The subject of this Thesis has long been known to Surgeons as one of the most common, and therefore one of the most important diseases which they can be called upon to treat; and from the earliest era of surgical writing down to the present day, the interest of the subject has increased, in proportion as the frequency of its occurrence and the vast amount of misery which it induces have been observed.

Many treatises of great value have at different times been written on it; and if we may judge of the attention which it excites at the present time, by the works which have lately appeared,
we find that instead of diminishing,
this interest is greater now than at any
former period of its history.

I purpose to speak of the subject
under five heads, viz;
I. Of the Pathology of Structure.
II. Of the Causes which induce it.
III. Of the Symptoms, general and local,
which are diagnostic of the several
Varieties.
IV. Of the Consequences of Structure.
V. Of the Treatment adopted for its
palliation or complete eradication.
Under this last head, I will speak of the
Methods generally employed at the present
day, and also give some account of others,
which used to be employed formerly,
but are now obsolete. As the researches
of Pathologists pointed out the true nature
of this disease, and the Surgeon was,
from superior information, led to adopt
a new line of treatment, more in accord-
ance with the views at the time
I. Of the Pathology of Stricture.

It was at one time believed, that the narrowing of the canal depended on the presence of tumors growing from its lining membrane; although this is thought sometimes to be the case, it is not generally acknowledged to be at all a frequent one.

Stricture is now pretty generally admitted, in this country at least, to depend on one or other of the three following pathological conditions: either on the deposition and organization of coagulable lymph in and around the walls of the urethra; or on turgescence of the lining membrane; or on a spasmatic action of the perineal muscles, enlargement of the prostate gland, or spasmatic contraction of the sphincter at the neck of the bladder.

In regard to the first of these (which is unquestionably not only the most frequent in occurrence, but is also very interesting to the Surgeon, as it only after
the expenditure of much time and attention that it can be permanently eradicated; and even in cases considered favourable for treatment, his best directed efforts may prove fruitless for this object, the cause of which most writers are now agreed upon, and have been for a considerable period. Sir E. More says, "a permanent structure is that contraction of the Canals, which takes place in consequence of coagulable lymph being forced between the fasciculi of muscular fibres, and upon the internal mem-

brane, in different quantities, according to circumstances; and in the same pro-
portion, diminishing the passage of the urine at that part, or completely closing it up. This lymph may be either in small quantity at first, and remain stationary, or what is much more common, gradually increase, till come-

state closure, or a state very near this had been reached. The diameters of the Canal however still varies somewhat,
in consequence of the contracting, as some think, of a set of muscular fibres, which were observed by Mr. Wilson lying along and forming the outer layer of the urethra; and the spasmodic action of the seminal muscles; and, also, from the effects of acute inflammatory action, in the vicinity of the stiucture, which all conduce, in a greater or less degree, to a temporary increase of the obstruction. Occasionally the canal of the urethra becomes quite impervious; but this can scarcely ever occur from structure, unless it has been very much neglected. The extent of this kind of obstruction varies, from what might be produced by the application of a common ligature, to the extent of an inch, or even in some cases, to several inches. Mr. S. Cooper mentions a case, where the urethra was entirely obliterated from the glans to the perineum, where a fistula was situated, through which the Patient spewed his urine. Mr. Stafford says,
that those structures which occupy a considerable extent are generally very irregular, and their structure resembles that of cartilage, being indurated and tough. In these cases, which are generally of long standing, the membrane is also changed, being firmer and thicker than natural.

In old cases there is generally more than one structure, and when this is the case, one of them, according to Mr. Smyth, is always at the bulbs, and generally forms the most obstinate of the whole.

Sir C. Bell gives an account of a very peculiar structure, he says, I have found, in indirision, from two to three inches of the canal, much diminished in capacity, and rigid; and all around this part of the urethra, the spongy substance obliterated. The effect was, as if the urethra and spongy body had suffered from compresion; yet this could not be the case, and at present I do not pretend to explain the cause.
The cicatrices of ulcers used to be reckoned the obstructing medium; but this idea is now abandoned. The only case in which ulcers are now allowed to be the cause of obstruction, is, when they are situated at the point of the penis.

The exact form of the structure varies. Sometimes, as in that where the obstruction is narrow, and occupying the entire circumference of the urethra, the part of it which is nearest the centre of the canal is thin, while the base is often pretty thick. It consists of the membrane stretched over a mass of lymph.

In other cases, this band does not encircle the canal, but only occupies one side of it; in both cases, it appears like a curtain hanging into the canal of the urethra, from its wall; very rarely, the structure is in the form of a transverse band stretching from one side of the urethra to the other; it is called the bridge structure. This form of the disease
must arise, from lymph having been effused into the interior of the canal and being organized there.

The precise situation of stricture, has been variously given, by different authors. Mr. Hunter never met with stricture beyond the bulb. Mr. Lyne also holds that it never occurs beyond this; and most writers agree in placing it, at the junction of bulbous and membranous portions of the urethra.

Sir E. Home found it to occur most frequently, just behind the bulb, and the next in frequency, at about 4 1/2 inches from the orifice; he likewise says that there are naturally the narrowest part of the canal. Sir H. Cooper represents the membranous and prostatic portions as the next most often affected after the bulbous. Mr. Liston's opinion was, that it generally occurred about four inches from the orifice, and often enough also in the membranous portion. The general belief of the profession is, that the part
of the urethra, where the penis bends upon itself, when pendulous, which is about three and a half inches from the orifice, is the most situation of stricture.

It may also occur at the neck of the gland, and the orifice; in fact, at any part of the urethra, from the orifice back to the bulb. The part of the urethra behind a stricture, always becomes more or less dilated, and, in consequence of the irritable, and inflamed state, in which it usually is, ulceration is very apt to occur in it. The part in front of the stricture again is always in a collapsed state.

The second variety of stricture, viz., that which is dependent on turgescence of the lining membrane, is the result of an inflammatory action going on in the membrane itself; it may affect one part only, in consequence of injury sustained there, or it may extend over a large portion of the membrane, as in severe cases of gonorrhea.

It may also be caused by the swelling attendant on the formation of abscesses,—which may be in the substance of the prostate, in the seminal
or at the side of the Uterus. The narrowing of the canal, from this cause, varies from the slightest perceptible degree, to complete closure, causing retention of urine.

The third variety of structure; or that which is dependent, either on spasm of the longitudinal muscular fibres, or spasm of the uterine in the neck of the bladder, or on contraction of the vesical muscles. The exact cause of this kind of structure has not been agreed upon.

Sir E. Home, believing in the accuracy of Baurers experiments, (who first described the longitudinal fibres) describes a structure, which, he says, depends on spasmotic contraction of these fibres. Mr. Wilson afterwards observed and described them. He says they are arranged longitudinally along the urethra, in small bundles of short fibres, which interlace with one another. But as their very existence has been denied by many excellent anatomists and surgeons, the dependence of structure on this action,
Can barely be held to be proved; more especially, as the longitudinal direction assigned to them, could scarcely account for the effects ascribed to them. Sir C. Bell thought that this kind of contraction depended on the action of the perineal muscles. Sir B. Brodie is also of the same opinion. For he says, after describing the symptoms of a spasmotic structure, "under such circumstances, we find that the obstruction is always at one point; that is, at what is called, (not very properly), the membranous portion of the urethra. And here, be it remembered, that the canal is surrounded by a muscle of no inconsiderable size, connected by a small double tendon to the arch of the pubes." This is the muscle described by the late Mr. Wilson, and called by his name. Although both the above observers refer spasmotic structure to the action of the perineal muscles, yet, Sir C. Bell could not have meant this muscle, referred to by Sir B. Brodie. The muscles of the perineum will,
And they, cause contraction of the posterior part of the canal; but, from their situation, they cannot be held sufficient, to account for contraction affecting the whole length of the urethra.

Another kind of spasmotic structure may be mentioned; namely, that dependent on spasmotic contraction of the sphincter at the neck of the bladder, on account of irritation applied to it from the bladder, as in cases of stone, or where the urine is very acidic, as from the use of alcoholic liquors, or from errors in diet.

Mr. Stafford says, that the spasmotic structure arises, from the urethra being as incitable as to contract, on the application of the slightest stimulus.

Mr. Lyme holds, that what is thought to be a spasmotic structure from the causes mentioned, is, more probably, the temporary tenseeness of the mucous membrane itself, or of the erectile tissue which immediately invests its external
surface. The real organic structure will always be subject to aggravation, from occasional suppression of the inflammatory, and also of the spasmotic or irritable forms.

II. Of the Causes of Stricture.

Gonorrhoea is allowed by the great majority of surgeons, to be a very frequent cause of stricture, and the form of the disease most apt to induce it, is that which is of long continuance, and at the same time very severe. It has been doubted by some, whether it was not the means employed for the cure of gonorrhoea, rather than the disease itself, and these, again, have had doubts, whether either of these was ever the cause of stricture. Mr. Hunter had met with strictures after gonorrhoea, which had as often been treated without, as with stimulat-
ing injections. He was of opinion that it depended on neither of these; for the reason, that stricture is confined to the urethra, but is often met with in any
of the other mucous papules, as in the lachrymal duct, esophagus, in the intestines, especially the rectum, and at the anus, and in the prepuce, so as to produce phymosis. Also, because these sometimes take place in persons who never had gonorrhoea, and, as often after slight attacks, as after very severe ones. Sir E. zone believed the cause of phimosis to be the use of stimulating injections. For the cure of gonorrhoea Mr. Wilson was also of the same opinion, although he states several circumstances which might give rise to doubts of this, especially the fact, that while injections only pass a short way into the urethra, structure is usually situated at the bulb. It may perhaps be answered to this, that the injection is often thrown up very carelessly, and might easily reach the bulb, so even enter the bladder.

Sir A. Cooper considered structure to be caused by gonorrhoea, in ninety-nine cases out of a hundred. Delpech thinks
structures a frequent consequence of long continued gonorrhoeas, and recommends Eupets and Espaixa, in order to cut this disease short. Mr. Byrne says, "it may be safely stated, that inflammation, or at all events, excitement of the urethra, precedes the adhesive process which establishes the thickening and induration, and whatever tends to produce this condition of the membrane will expose to the risk of stricture. These gonorrheal cases, in which the inflammation spreads back along the urethra,—irritating injections, allowed to enter the passage too far,—frequent indulgence in venery,—stone in the bladder or other parts of the urinary organs,—and habitual addiction to a diet that stimulates the parts concerned, may thus be regarded as causes of stricture." Mr. Catton was of opinion, that in its most aggravated form, it was the result of injury inflicted on the passage, either lacerating it, or giving rise to intense inflammatory action.
A blow on the perineum is a very common cause. When frequently repeated, less violence will often suffice, as is shown in those obliged to take much exercise on horseback. There can be little doubt that injections, use of bougies, and especially, of lithotriptic instruments, is a very common cause of the disease. I am not aware that the same result follows the operation of lithotomy, though we might reasonably suppose that the violence used in many instances, would cause such an amount of inflammatory action in the urethra, as would be sufficient to produce a stricture. Much exercise on foot is often sufficient to bring it on in those predisposed to it. A bladder has been known to induce it in very irritable persons, and this has happened, even in the case of very young boys. The circumstance of it sometimes occurring at a very early age, has given rise to the belief, that it is in some cases hereditary. This opinion...
will not be easily proved to be a correct one.

Mr. Macilwain states, in his book on Ptomaine, that it is usually preceded by a state of the faeces which is called an irritable melaena, and which has a considerable effect in bringing it on. The morbid sensibility, by which it is chiefly characterized, may affect the whole faeces, or be confined to a small portion of it; in which last case, the rectum is always the portion affected. In these cases, the size of the stream of urine varies remarkably at different times, much more so, it is said, than in cases of structure. This state of the melaena, seems to be very much analogous to that which some writers denominate the spasmodic structure.

III The Symptoms of Structure

The first thing that occurs is a diminution in the size of the stream of urine, which is very often not observed by the patient.
until the disease had made some progress. Dr. H. Cooper states, that the first symptom is the retention of a few drops of urine, in the urethra, after the patient has made water, which escape and slightly wet the linen; this latter, is generally the circumstance, which first attracts the notice of the patient. Difficulty of micturition may not be felt by the patient until the disease is very far advanced; in fact, so very gradual is the progress of the structure, it may be only when complete retention has occurred, brought on perhaps by a debauch, or some irregularity on the part of the patient, that he, for the first time, becomes aware of the obstruction in his urethra. Another very frequent symptom is an irritable state of the bladder, noticed by the patient not being able to sleep as long as usual, without being obliged to make water. A healthy individual can usually retain his
Wine, from the time he goes to bed till he gets up in the morning; whereas a person suffering from Stricture, is compelled to evacuate his bladder two or three or more times, in the course of the night. The stream is small, and spiral, forked, or dribbling, taking its shape from the Canal through which it flows. Many things may give this shape to the urine. Besides, a Stricture, as an enlargedannular Felthle, and therefore we must not infer from this circumstance that Stricture is actually the Cause of it. Pain is felt during Intercourse, but seldom afterwards. Pain is also frequently complained of during Ejaculation. Involuntary emissions of semen are constantly taking place. Uneasiness is often distressing in the loins and thighs, and in the perineum. Mr. Miller states, that in very tight Strictures, the urine is air-charged, and in such cases there can be no emission of semen;—this fluid taking back into the bladder, and is
discharged along with the urine. Mr. Liston thought, that the structure was seldom so tight, as wholly to prevent the semen from passing along the urethra. There is, from very soon after the commencement of the structure, a gradual discharge from the urethra, always from the within two inches of the orifice. As the structure becomes more confined, the bladder participating in the irritation, this discharge comes also from the gland, in old cases, may be in such abundance, as to compose the half of what is evacuated from the bladder. It is seldom, unless under certain circumstances, any source of irritation; it may, however, sometimes cause retention of urine, in consequence of its being in such quantity, as entirely to fill the urethra at the stricture, more particularly, if it happen at any time, to be more than usually thick and tenacious. Sometimes strange feelings are complained of, as of animal, creeping and fluttering in the urethra; painful itching too
is common. The sympathies and functions of the parts are much affected by structure. The urine, which when the patient is awake cannot be passed without the greatest exertion, is discharged during the night involuntarily. The neck of the bladder, when in a healthy condition, is closed by circular fibers of elastic tissue, and by the collapse of the sides of the prostate; when structure is present, the passage is opened by the fibers of the levator ani inserted into the prostate, and by the pressure from behind.

Although the foregoing symptoms usually attend on, and are characteristic of, the presence of structure of the bladder, yet they cannot of themselves, in no case, be held sufficient to indicate the existence of structure with absolute certainty. Most of these may be present in certain diseased conditions of the bladder, of the prostate gland, and bladder and of the rectum. In all cases, therefore, when the presence of these symptoms
leads to the suspicion of a structure, it is necessary to make an examination of the meatus, by means of the bougie. Different kinds of instruments are employed by different surgeons for this purpose: thus, a wood bougie is used by some; an elastic gum one by others; while a metallic bougie or catheter is employed by the remainder: the last mentioned instrument is the kind most in use at the present day. It may be made solid of steel, or hollow of silver or Berlin silver, the last is employed and recommended by Mr. Smyth. Any metal will answer the purpose, provided it will take a high polish, and not be liable to rust.

The instrument, whatever kind it may be, should be a full-sized one, that is to say, large enough to fill the meatus without stretching it. A smaller instrument than this is apt to deceive the operator, either by passing through a structure without giving intimation...
that such exists, or the point may enter the enlarged office of aJunceas Gollie, or get entangled in some ir-
regularity of the Canal, and thus, lead to the belief that there is a structure, when in reality there is none. If the
patient has got the symptoms previously enumerated, and the instrument is
obstructed at some part of the Canal, there is good reason for considering this, as indicating the existence and situation of a structure. On the other hand, if the patient has no such symptoms, the existence of structure should not at once be presumed because the instru-
ment does not reach the bladder; there may be an irregularity of the passage, by which the instrument has got entang-
led, or, from carelessness in the use of the instrument, or even without this, when the
sensibility of the Uretino is proportionally great, very obstrusive spasm may be induced, preventing the passage of the instrument. This spasm is either
IV. The Consequences of Stricture

Many very important secondary affections are constantly presented to the Surgeon which he may be at once called upon to treat as if they were primary disorders. The most important of these are undoubtedly those connected with the Bladder which may all extend from this along the urethra and finally affect the Kidneys. The Bladder usually begins to suffer very soon after the appearance of the Stricture.

The first symptom noticed is the irritability of its mucous membrane as shown by the increased frequency of the Calls to make water. On this account it is never fully restored as in health, and consequently its capacity very soon becomes so
Much diminished, that at lengths it is incapable of containing more than an ounce or two of urine. Of course it is only in very exaggerated cases of stricture that the diminution in capacity is to such an extent as this; but that does not alter the case at all, because there can be no doubt that if allowed to continue for a long time without means being employed for the relief of the original disease, this state of extreme diminution of the cavity of the bladder would be present in every case.

As the stricture becomes more and more developed, a constantly increasing force is required to evacuate the bladder. This force is for sometime not more than the muscular coat can supply; for in order to overcome the obstruction it immediately begins to hypertrophy. Very soon however the obstruction becomes too great...
for this power to overcome, and their assistance is sought from other quarters: the levator ani is called into action for this purpose, and, the long, the assistance of the abdominal muscles is also necessary. Under the immense power now brought to act on it, the bladder yields, and the mucous membrane is pushed through the interstices of the muscular fibres, forming small cysts or subsidiary bladders communicating with the general cavity of the organ. The number of these cysts varies, as do also their size, being in some very little if any less than the bladder itself. Sometimes they contain calculi which have made their way from the kidney to the bladder. The bundles of muscular fibres are frequently so much enlarged as to give to the interior of the bladder a columnar appearance, resembling somewhat the
ventricles of the heart.

Vescoration sometimes attacks the bladder in this state and may proceed to such an extent as to penetrate completely through its coats, thus making an entrance either into the cavity of the peritonenum or into the rectum. In the former case speedy death will certainly be the result. In the latter, although the patient feels immediate relief from all his former distressing symptoms, yet as he will, in all probability, be ever afterwards under the necessity of passing his urine by the anus, the constant annoyance and vexation which this will occasion, rendering the unhappy subject of this accident unfit for any active employment or for mixing with the world, it may seem to many severely preferable to the alternative fate formerly alluded to.
Sometimes abscess forms in the areolar tissue, external to and investing the bladder. Such abscesses are frequently long in presenting themselves externally and when they do so it is either in the groin or above the pubis. The abscess charge is at first painless and non-pertinent just which is soon afterwards, from the ulceration extending itself through the coats of the organ, followed by urine. While an abscess of this kind is forming, the patient exhibits the usual febrile symptoms; hot skin, frequent jibble, and brown tongue &c. Sir B. Brodie says that these symptoms are, for the most part, to be looked upon as indicative of approaching dissolution.

In bad cases, which have lasted long the waters are found to be much diluted in consequence of the frequent retention of urine, to which the bladder is liable, so attending it, that the calculous arrangements at the origin
of the ureters is destroyed, then being then no obstacle to the passage of the urine into them from the bladder. Accordingly dilatation of the ureters and pelvis of the kidneys occurs to a great extent, in order to compensate for want of capacity of the bladder. The dilatation of the ureters is sometimes so great that they come to resemble in size a piece of small intestine. Besides the dilatation of the pelvis of the kidneys their glandular structure is sometimes entirely destroyed. The fatal termination of a great number of cases of stricture is dependent on this diseased condition of the kidneys. Fistula in Pevines is apt to happen when the disease is considerable and of long standing. The space of the urethra behind the structure is always much dilated, so much so, indeed, that large stones have been found lying there; and when the patient makes water a considerable tumour had been
been and felt in the perineum.
In such cases the sphincter at the neck of the bladder is also affected.
And as a consequence of these circumstances, there is always an accumulation of urine just behind the structure. This irritates the urethra, and induces ulceration in it. In consequence of this irritation and inflammation in the urethra at this part, the cellular tissue naturally in the perineum, is condensed: and when the ulceration has made its way fairly through the membrane, an abscess forms in the perineum, which, after a time, bursts externally and through this opening the urine escapes. This constitutes fistula in perineum. The escape of urine into the perineum generally takes place in this way. It may, however, happen differently, in cases where the structure has increased rapidly and retention taken place in consequence of it.
The violent efforts the patient makes to evacuate his bladder may force an opening through the urethra into the perineum, behind the structure, instead of through the structure, and along the urethra. In this case, there being no abscess and consequent condensation of the typhus of the perineum, diffuse cellular infiltration, followed by sloughing, is the result of the accident. Moreover great the sufferings of the patient may have been before the rupture, he feels no pain or very little smarting, immediately after. This occasionally terminates fatally, more particularly when free exit is not afforded to the urine either by nature or art, in consequence of its rapid diffusion forwards over the peritoneum and abdomen, and, which more rarely happens, however, over the upper and inner part of the thigh (the peculiar arrangement of the dense perineal fascia generally...
Renderring this very difficult. But even when extensive bleeding has taken place, at all events, when confined to the levatorum and perineum, the patient will make a speedy recovery, with the exception of the fistulous opening.

Chronic inflammation and swelling of the testicles is a very common consequence of structure. Sir H. Davy in his treatise on diseases that it such a frequent occurrence in connection with structure, but thinks it is much more frequently a result of the treatment. In this however a great majority of the profession are of opinion to live.

The prostate gland, situated as it is at the neck of the bladder and constantly exposed to great irritation, is very sure to be very easily affected. It lies comes relaxed and is subjected to still more irritation.
Before. An abscess now generally forms in it, which will for a time cause great pain to the patient. As soon as it bursts, it is relieved; but the interior being constantly exposed to the contact of acid urine, is kept in such an irritable state, that a cure can hardly be expected to take place. Ulceration may occur independently of the formation of abscess, and generally gives the patient even more pain than abscess itself.

Haemorrhoids are frequently observed in persons labouring under structure; the result no doubt of the congestion of the haemorrhoidal veins, caused by the severe straining necessary to evacuate the bladder.

Tetania, both surgical and general, is occasionally produced by the straining efforts of the patient.
general health invariably becomes very much disordered. In consequence of the irritability of the bladder, the patient is obliged to make water much oftener than natural. His rest at night is thus much disturbed, and exhaustion from this cause is soon felt. Digestion and assimilation do not go on as they ought, and evacuation is added to the already long list of the patient's grievances. The nervous system is likewise very apt to be become affected. Neuralgic pains in the lower extremities are frequently observed in connection with the disease. Melancholy and depression of spirits attend on the advanced forms of the disease.

V. The Treatment of Structure may be divided into three classes: first, the treatment by dilatation; by means of the bougie above,
Second, the method by dilatation by Annoy Bougies; and, third, the treatment by incision.

First of dilatation. This has been for a long time one of the most useful kinds of treatment, and for the last quarter of a century, it has been almost the only one in use in this country. Two indications may be fulfilled by means of the bougie. One is to effect a cure by simply dilating the structure, and inducing absorption of the deposit in the walls of the urethra. The other is to apply such an amount of pressure on the obstruction as will cause ulceration in it, and so get rid of the deposit. The first of these is almost universally practised now. In fact the other was used in very great favour; after it was sanctioned by Dr. Hunter in some cases. When a stricture has been made
out to exist. Before commencing the local treatment, the general health of the patient ought to be particularly attended to; and as the urine in old cases is always very acrid and irritating, means must be used to change its character. For this purpose the diet ought to be carefully regulated, and every thing tending to keep up an irritable state of the urinary organs avoided. Mild medicaments and alkaline drinks should be freely prescribed. Exercise is to be avoided, and much bodily exercise prevented. The bowels must be kept open, and when any unusual irritation exists, opiates must be administered as oysters, or by the mouth. When all this has been attended to, the surgeon may proceed to the direct articles of treatment...
It has been recommended by some authors to take a cast of the structure by means of a soft wax bougie before passing one of harder materials. Dr. Syme, Mr. Fothergill, and Mr. B. Brodie, all think this unnecessary, as by watching the stream of urine passed by the patient, a pretty near approximation can be made to the size that ought to be just used. It may be either the common plaster bougie, the elastic gum catheter, or the Nicolai bougie or catheter. The last mentioned is the kind generally used in this country. If the structure is very tight the indurament had better be rather conical in form, but if not very tight a cylindrical shape will be preferable. The position of the patient during the operation will depend on the circum
stances of the case. If it is the first time that an instrument has been passed along the mother, there is a great probability of the navel and flanks coming on, and in such cases the horizontal position will be most suitable. If no such occurrence is to be apprehended, the erect posture will be fully as convenient for both patient and surgeon. The method of introducing the instrument is generally recommended to be with its convexity towards the abdomen until the joint reaches the suspensory ligament. The handle being then slightly depressed, and the instrument at the same time turned half round, this obstruction is got over. The joint of the instrument is kept all the time gliding along the upper surface of the canal, being much
Left soft to meet with obstruction here, than if it were kept on the lower surface. It is generally recommended that the surgeon take hold of the penis with his disengaged hand, and pull it slightly on the staff of the instrument. Mr. Weston, however, objects to any manipulation of the organ, on the ground, that fever is more likely to be induced when this is practised. If the instrument has entered the structure, it will be known on attempting to withdraw it gently, when it will be found grasped and held firmly. When it has not entered the structure, and the pressure being discontinued for a little, the instrument will Coils. When the point has penetrated the structure, gently and persevering pressure will
generally cause the contraction of the fibres around the part to yield, and the instrument will gradually slip on into the bladder without difficulty. When a friction is still experienced, the forefinger in the rectum will often be of much use in directing the point forwards into the bladder. This is especially the case when the prostate is enlarged, or when the operation has been performed in case of retention of urine. Where the instrument is not necessarily very small, as in cases of inoperable structure, very great caution on the part of the operator is necessary. If irrevocably introduced, a false massage may be formed, and the patient's life endangered thereby. The circumstances which indicate that such an
Massage has been formed and absolute of the sensation of being grasped as the pressure is continued, the sensation of something having suddenly yielded, a feeling of roughness and rubbing on the point of the instrument. If pressure is still kept up, and the patient complaining of unusual pain, and faintness coming on, with the escape of more or less blood along the sides of the instrument. In some cases there is unusual irritation which tends to prevent the passing of an instrument. Pressure of the venous and muscular may come on, or an attack of acute infection, or the mucous membrane itself may be in a highly turgid state. In the case of aged, which generally occurs in old people who have lived much in warm climates, great benefit will
be derived from the use of sub-
plicate of quinine. In the other
cases, a dose of quinine by rectum
or mouth, shortly before the at-
tempt at introduction, will gen-
erally, partially or completely, re-
move these obstructions.

The length of time the in-
strument should remain in the
rectum must be regulated by
the feelings of the patient. From
three minutes to half an hour
is the usual time, but there
are great differences in indi-
viduals in this respect. Al-
though the action of the bougie
is simply mechanical, the vital
process of absorption is intended
to be set up in the rectum,
which will gradually affect
the removal of the obstruction.
But when the instrument is
allowed to remain too long,
instead of simple infection
true inflammation is reduced, more lymph deposited, and the structure rendered worse than it was before.

It is obviously necessary, therefore, to pay particular attention to the feelings of the patient during the operation. What would be sufficient to cause only a slight degree of excitement in one person, may induce violent inflammation in another. Rest must be enjoined for the remainder of the day in which the instrument is passed, and an interval of two or three days should elapse before it is again attempted. After the lapse of this period the same instrument should again be introduced and immediately withdrawn, and ad other a size or two larger substituted. The operation should be repeated until the mother is fully dilated. The length of time required to effect this varies in different cases, according to the
nature of the obstruction and the length of time it has been present, and also, a good deal on the constitution of the individual. In the majority of cases, full dilatation will not be affected in less than four or five weeks; but it is often much longer even than this. After the obstruction is completely removed, a bougie ought to be passed, at gradually increasing intervals, for about six months, in order to prevent the return of the disease which is very apt to happen. In fact, the cure of stricture by dilatation cannot be looked upon as certainly permanent. On the contrary, if the patient indulges in any excess, or if he is exposed to cold and fatigue, a return of the disease is almost sure to be the result.

When the stricture is very tight and unyielding and will not admit of the entrance of even a very
small, concisely, without the use of considerable force, and if there is no great urgency in the case, it will be better to pass a pretty large instrument down to the desired line, and retain it with its point pressed against it for some time. Forcibly this may be repeated at the usual interval of two or three days, and the relaxation will always gradually take place until, in the course of time, admit of the passage of the instrument. When forced too frequently use of the bougie, or from fatigue, intemperance, or exposure to cold and wet, too much excitement has been produced, the farther employment of instruments must be desisted from till, by a suitable treatment, a quiet condition of the passage has been again obtained.

Such is the general method of employing the bougie for the
Surface of producing absorption of the defect; they are also employed with the view of producing relaxation. This mode has been recommended both when a bougie can be introduced through the structure and when it cannot. In the former case, it can never be necessary; and in the latter, it has not been well received in this country. In order to effect a cure of structure by producing relaxation, the bougie should be introduced as far into the contracted part as possible and the size of the instrument, or reflecting the application, should be as rapidly increased as the necessities of the patient will admit of. Hunter says that the cure will be more lasting, because much of the structure is destroyed, than when the parts are merely dilated. He remarks, however, that few patients will submit to this.
practice, and that few indeed would be able to learn it, since it is apt to bring on violent spasms in the first attended with a very troublesome retention of the urine.

In attempting a cure of an irremovable stricture by ulceration, great attention must be paid to the patient. If he does not make water better notwithstanding that the bougie continues to advance, the end you may be pretty confident that a false passage is being formed. When the stricture has yielded so small far that a small bougie can be introduced, the treatment should be conducted on the principle of dilatation. The treatment by ulceration is however very seldom tried, and only when the stricture is of such a kind as absolutely to prevent the possibility of effecting a cure in any other way. The principal reasons against the
Practice are, the considerable risk of forming a false passage and the great length of time necessary to effect a cure, and because, even when total destruction of a structure has been effected, contraction to a great extent of the ulcerated surfaces is sure to take place, and these will, consequently, lie a risk of a worse structure being induced, than that for which the treatment has been adopted.

Treatment by escharotics.

Wisseman mentions the bland of curing structures, or carcincles as they were called in his day, by means of caustic applied to their surface. Doncalbi likewise described a method of applying the lapsis informalis to structures, in the early part of last century. It was not like the time of now however that the treatment by escharotics came into general
used in this country. He first tried red precipitate, but soon found that it wanted the power of destroying the structure and began to use nitrate of silver instead. He directed the caustic to be carried down to the obstruction through a cannula, for the purpose of saving the sound portion of the membrane from the action of the caustic. Mr. E. Howe strongly advocated the employment of escharotic treatment, and seems to have met with very remarkable success in his practice. The reasons given for the use of armed bougies instead of plain ones were, that a permanent cure could be accorded wished by the former and never by the latter, that the pain arising from the application of nitrate of silver was very slight, and that neither irritation nor inflammation was found to occur. Mr. E. Howe acknowledges pronounced that pound
inconveniences do result from the use of caustics. Although it might reasonably be supposed that the action of such a violent application would have been much greater than experience found to be the case. He says that cases as occur in which structures have produced so much mischief and induced so much of the caustic disease that the use of the caustic has proved unsuccessful for their cure. Yet even when used successfully no bad effects have followed its use. He thought the caustic especially serviceable in cases of veritable matter, where a Bougie could not be passed. This practice seems to have been much more successful than that of any succeeding surgeon. This success may perhaps be attributed to his dexterity in operating.
only be practised in a very few cases. — Sir B. Brodie and Mr.
Spence maintain that it is incapable of effecting a permanent
cure in any case, that the force
allows that it is very useful in
allaying pain. — Whitby,
has recommended potassa fusca
to be used instead of nitrate of
silver, but the opinion of the pro-
found is more decidedly against
this than against the older one.
The evacuative treatment
from having been very generally
adopted in this country, and
thirty or forty years ago, has
ever to be scarcely ever used.
In Ireland it never was in very
general used at any time.

Treatment by Incision has
been conducted in four different
ways. — The first is to cut down
on an impermeable structure for
the outside and endeavou...
to dissect it completely out; and then introducing a Bougie, to try to find a new passage on it.

The operation is a very severe and difficult one and will be applicable in very few cases indeed. Even when the diseased portion has all been removed such constriction will inevitably take place at the part as must leave the canal very much narrowed.

The second mode of curing has been introduced and highly recommended by Mr. Stafford. It consists in passing down to the root of structure different instruments invented by him according as the structure is permeable, impermeable or situated only on one side of the canal. He calls the first the double lancetted stilette, the second the method incorporating a single lancetted stilette and the third the
Natural blocked shuttle. The canes in all of them are enclosed in silver tubes and can be projected by a handle attached to the other extremity of the tube. When the situation of the impermeable structure has been ascertained, the medical perforator is introduced into the uterus and carried until it rests against the structure when the canest is protruded into it. It is then drawn back within the tube which is pushed on into the space made by the canest. When it cannot be advanced by gentle pressure any farther, the canest is again protruded and so on, canest and blunt tube alternately, till the obstruction is completely perforated. The other instruments are used much in the same way, allowing for the difference in their end structure, and of the distended
against which they are used... Stafford recommends this method of treatment on the ground that it effects with certainty and in a short time what the caustic is intended to accomplish by repeated and tedious applications; that the division of the structure past within the mastic has not been attended with the same danger and evil consequences as the methods just mentioned; that the operation in his hands has never been followed by hemorrhage, false passages, violent inflammation, fever, retention of urine or swelling in the perineum.

It seems to be the general opinion that, in the two cases in which the structures are permeable, dilatation by bougies is preferable to incision, and in the case of impermeable...
stricture. Dr. Green thinks that the
invasion from within the canal
is not sufficient to counteract
the contractile tendency which
generally characterises this
stricture. Mr. B. Modee thinks
the cases very few in number
where this treatment is neces-
sary and estimates the risk
of the operation, from the in-
strument penetrating into the
surrounding cellular membrane
and allowing perhaps extrac-
vacation of urine to take place,
as very considerable. — Mr.
Millen takes much the same
view of the operation.

The third mode of inv-
easion has been proposed in
cases of irreparable stricture
and appears to be very hazard-
on. It is by cutting into the
pharynx in search of the
structured part with only a
Catheter introduced down to the
structure as a guide in the operation.
Sir R. Brodie says, I have heard of
its being performed in several
instances. In the greater number
it was a work of difficulty and
in some of them the patient
had to be put to bed without
its being completed. Even under
favourable circumstances it can
not be otherwise than doubtful
whether the structure be properly
divided, that is, whether the
incision has passed through the
narrow canal in the centre or
through the solid substance at
each side. I suppose that no
surgeon would recommend
such an operation except as a
last resort, when no instrument
could be made to pass through
the structure by other means."
Dr. Syden says: "In addition to
the danger thus incurred of
establishing an imperfect canal constantly disposed to contract and inconvenient from its tortuous direction there is also the immediate hazard of failure in accomplishing the introduction of a catheter into the bladder which would expose the patient to nearly certain death from extravasation of

Migne has lately recorded remedied a new method of treatment for the case of impermeable structure when it is of that resistant kind characterized by a great inclination to contract after having been fully diluted by bougies. When the existence and situation of a structure has been made out, the patient should be brought to the side of the bed, his limbs being supported by two assistants. A grooved director slightly curved and small enough to pass easily
through the structure is then cut, closed and held by one of the assistant's arms. The surgeon having parted himself in front of the patient now makes an incision in the middle line of the perineum, on the idea, according to the situation of the structure. The integuments and subjacent tissues exterior to the bladder are now cut through to the extent of an inch or more. The surgeon then feels with his hand finger guarding the blade for the director and pushes the dent into the ground on the bladder side of the structure and pushes the knife forwards so as to divide the whole of the thickened tissue at the contracted part of the canal. The director is withdrawn and a medium sized catheter is inserted through into the bladder and contained by a suitable arrangement of tapes. The patient lies
to remain in bed for two days when the catheter may be withdrawn and all restraint removed. Part of the urine generally passes thru the wound for some hours, or perhaps a few days, as its expulsion is required in this account. But at the end of eight or ten days a moderate sized bougie should be passed and this should be repeated once in the week for two months. If the tendency to contraction had been extreme, or if the patient's way of life is such as to favor the 2D production of structure, it will be prudent to have the bougie passed from one to five times in the course of the year.

Such is Dr. Tyres's method of treatment in these obstinate cases of structure which had resisted all other attempts to effect a cure. Besides the distinction
to contract the system suffers very severely in such cases and the mortality may be such that no surgeons can possibly be blamed with any prospect of success, and Dr. Tyne's is the only method by which a permanent cure can be affected in these cases. In a large number of cases now operated upon by Dr. Tyne not the slightest bad consequences have resulted and the patients have been dismissed perfectly cured in a much shorter time than is usually spent in trying to dilate the structure. The results of the treatment have been so very favorable that it will most likely be extended to less oblique cases.

The treatment of the inflammatory and spasmotic forms of the urethra is principally general. How what was considered as the bed...
designing and local causes of hyperemic structure, the cure will only be accomplished by the removal of these. When the structure depends upon the extreme irritability of the matrix arising from sound irritation about the stomach, the offending material must be moved or its effects neutralized. The spasm may be alleviated also by the administration of opium, camphor, cinchona and other sedatives and antispasmodics. Warm fomentations to the perineum and perineum will also be serviceable in many cases. Drinking copiously of mucilaginous and alkaline beverages will also be beneficial. Alkalies are always needed to neutralize the urinary salts. This diet should be carefully considered and nothing that has a tendency to stimulate irritation allowed. Such medicines as will
assist digestion should also be administered.

Mr. Stafford states that when much pain attends the passage of urine with some and diminution of the stream or size, inflammation is sure to have occurred. In this case, extra active measures must be adopted. Ice should be applied to the perineum and a blood taken, and by cuffing and forced tations afterwards applied. Opium may be given either by the mouth or as a suppository or elixier, in order to lessen the irritation. Hyoscyamus or Conium will perhaps be better than opium as not so likely to cause feverishness or to constipate the bowels. Diet must be carefully attended to and nothing likely to act on the kidneys allowed. Spirits and fermented liquors must be entirely abstained from.