

CHAPTER XIV

RESULTS OF MALTREATMENT AND NEGLECT OF STRICTURE

Results of Maltreatment.—Inflammation, infection, hemorrhage, and false passage.

Results of Neglect.—Periurethritis, periurethral abscess, periurethral pouches, phlegmon and gangrene, including urinary extravasation and infiltration, and fistula.

FALSE PASSAGE

Of the four results of maltreatment noted above only false passage requires notice here.

False passage, as already stated, results from rough or unskilful use of small instruments in an obstructed urethra. It may be due to forced catheterism, a barbarous procedure, condemned by its name alone, which consists in passing a metallic catheter up to the obstacle, and then forcing it along in the supposed course of the urethra, until urine flows through it, if haply this occur at all.

False passages start from the bottom of lacunæ or from the face of a stricture, from in front of the triangular ligament or from some abscess (Fig. 66). When a surgeon makes a false passage, he may be unconscious of the escape of the point of his instrument from the canal, but he will soon perceive that it is behaving unusually. It does not glide along as if in a healthy urethra; it is obstructed, but yet not held as though in the grasp of a stricture. The point, moreover, seems often to be turned out of the median line, and, after the instrument has been introduced far enough to reach the bladder, a rotary motion, imparted to the shaft, will show that the point is fixed in the connective tissue, and not freely movable, as it would be in the cavity of the bladder. In such a case a finger in the perineum, or better still, in the rectum, will almost certainly feel the point of the instrument just outside the wall of the gut, at the apex of the prostate, or perhaps lying between the prostate and the gut. On withdrawing the instrument, blood flows freely from the meatus.

The treatment for a fresh false passage of this sort is, to let it absolutely alone for two weeks, if the patient can urinate, and is in no pressing need of having his stricture relieved. Blood will flow for a day or two, then pus for a few days, and at the end of two weeks, in favourable cases, the passage opened by the instrument will have closed. Occasionally it remains open, suppurating for a much longer time. Urethral fever, with or without the formation of abscess, is not an uncommon result of false passage. Infiltration of urine is exceedingly rare.

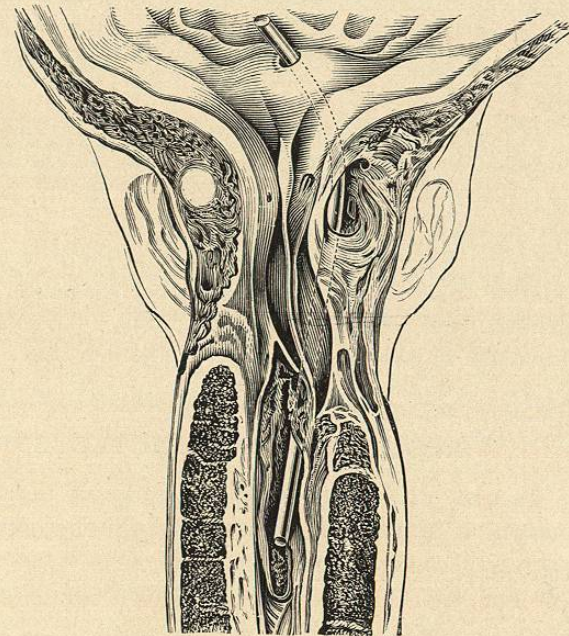


FIG. 66.—(DITTEL.)

The great danger in these cases is in recommencing instrumentation too soon, entering the false passage before it has healed, and thus keeping it open indefinitely.

In avoiding an old false passage, which is the seat of chronic suppuration, its position must be accurately studied out, by observing at what point in the urethra an instrument engages in it, and from which wall of the canal (upper or lower¹) it starts. The orifice of a false passage once accurately located, may be subsequently avoided by making an effort to present the beak of the instrument at a different portion of the canal when passing the dangerous point. A new false passage does not grasp an instrument like a stricture, and in this way can often be distinguished from the latter. An old false passage, however, so far as its pathology is concerned, is a traumatic stricture. It has hard walls, and the scar tissue around it will grasp like any other stricture, thus depriving the surgeon of a very valuable means of deciding whether or not he is in the strictured canal of the urethra.

¹ Guyon states that he has never met a false passage on the roof, hence advises following that wall of the urethra to avoid it. I have, however, met two cases of false passage on the roof, as shown by external urethrotomy.

Another means, already alluded to, of avoiding a false passage when searching for the orifice of a narrow stricture, consists in filling the urethra with whalebone filiform bougies, thus mechanically filling up the false passage until some instrument will glide by its orifice and enter that of the stricture. But even this manœuvre often fails.

If a guide passes the stricture, the latter may be stretched with a tunnelled instrument, or cut. The size of the beak of the full-sized instrument, subsequently passed, will insure it from entering the false passage.

If the stricture is impassable, and there is retention, it becomes a matter of personal judgment to decide whether to perform external perineal urethrotomy without a guide, or to use the aspirator and endeavour to pass the stricture at another time.

RESULTS OF NEGLECTED STRICTURE

In view of recent researches, many of the fundamental notions concerning infiltration of urine have been completely changed, and this condition and its associated phenomena now appear as inflammatory and not as mechanical complications of stricture. Since the time of Voillemier the accepted theory has been that all urethral dilatations and urinary pouches in the region of a stricture, as well as all urinary extravasation and infiltration, are due to the pressure of the urine forced against the weakened, inflamed urethra by the bladder filled to overflowing. The urine was supposed to burst through the urethra, and thus to cause these complications. But a certain number of phenomena are unexplained by this hypothesis. These are:

1. Certain urethral dilatations in front of the stricture. Such dilatations cannot be caused by any urinary pressure.
2. Certain abscesses and urinary pouches opening into the urethra in front of the stricture.
3. Urinary extravasation caused by strictures of large calibre, when the back pressure is by no means sufficiently violent to cause rupture of the urethra.
4. Gangrene of a considerable portion of the urethral mucous membrane behind a stricture of large calibre (Escat¹).

Moreover, in direct contradiction to the theory of acute extravasation are the observed facts that—

¹ Guyon's *Annales*, 1898, xvi, 897 and 1026. This article is a detailed and brilliant elucidation of the whole subject.

1. The more the bladder is distended the less able is it to exert any great force or to produce more than a dribbling stream, even after the urethral right of way has been re-established.

2. When a urinary pocket is opened, and its urethral orifice found, the urine never gushes out, but flows drop by drop.

In short, although the mechanical theory of urinary extravasation explains with charming simplicity the type cases of extravasation—a large invasion of the tissues behind a tight stricture—it does not explain all the phenomena, nor even all the cases of extravasation, and is not compatible with certain clinical facts. Indeed, Escat¹ and Cottet² go so far as to deny that the clinical picture of mechanical extravasation exists. The terrible straining and agony suddenly relieved with a feeling of something giving way in the perineum, and soon followed by extravasation, is, it would seem, a description devised to fit a theory.

But if a purely mechanical theory fails to explain the facts, they are fully elucidated on the basis of infection. Without discussing the details, which may be found in the essays of Escat and Cottet, the theory may be set down thus: Although many patients go through all the other complications of stricture, and even come to their deaths thereby, they may never develop any marked urethral dilatation, nor any urinary pouch, abscess, or extravasation. Yet others—even some with stricture of large calibre—especially if enfeebled by alcoholic or other excess or by a long continuance of the disease, may suffer any or all of these local complications. The underlying lesion, therefore, in all (or nearly all) these cases is a stricture, commonly an old stricture. Hallé and Wassermann³ make the following remarks:

“The most striking feature of a stricture resulting from a chronic urethritis” (read, “an old stricture”) “is the extent of the lesion; the whole canal is involved from the meatus to the neck of the bladder. Though constriction has only occurred at a few points, the sclerotic urethritis has implicated the greater part of the canal. . . . To these long-established sclerotic lesions recent inflammatory changes are often added at certain points. Underneath the epithelium confluent areas of small-celled infiltration appear. These usually occur at points of flexure and about irregular areas on the surface of the canal. Perhaps this area of round-cell infiltration extends and invades the spongy tissue. Such a focus has manifestly a suppurative tendency.”

¹ Guyon's *Annales*, 1898, xvi, 897 and 1026.

² Thèse de Paris, 1899, and Guyon's *Annales*, 1899, xviii, 590.

³ Guyon's *Annales*, 1894, xii, 244, 321.

Such is the soil. Upon its surface there is chronic catarrh; in its substance areas of tissue tending to suppuration in the midst of a dense sclerotic mass—fit nest for any inflammation. Grant any determining factor—deterioration of health, local trauma, acute retention, exposure or excess—and inflammation ensues. Hence any of the following types:

1. Suppuration within the stricture causes *periurethral abscess*, which—

- a. Remains localized and quiescent.
- b. Is absorbed.
- c. Extends into the perineum and scrotum.
- d. Opens into the urethra and—
 - a. Discharges and heals.
 - β. Remains as a fibrous sac filled continuously or intermittently with urine, and communicating with or shut off from the urethra. (*Urinary pouch*.)
 - γ. Fills with urine and bacteria, whose ravages rapidly spread the infection, causing *infiltration, extravasation, phlegmon, abscess, or gangrene*.

2. Suppuration on the surface of the sclerotic tissue, usually behind, sometimes at, and rarely in front of the stricture, may cause *dilatation of the urethra, periurethritis, periurethral abscess* (with the associated lesions just noted), or, if the physical and bacterial conditions are appropriate,¹ *gangrene of the urethra* alone or of the surrounding tissues as well.

3. To fill out and complete the theory that these accidents depend solely upon the combination of individual predisposition and bacterial virulence, two other conditions may be explained by it: the one, *malignant gangrene of the genitals*, a spontaneous gangrene extending over the genitals, sparing the deeper tissues, terminating in recovery, occurring in young subjects with genito-urinary history or disease, and quite comparable to noma, though not fatal; the other, *genital gangrene of old prostatics* long habituated to catheter life, a similar condition, not diabetic in origin, terminating in death (Guyon and Albarran, quoted by Escat). These rare conditions can arise from no source other than a fortuitous combination of soil and seed, comparable to that presented by gangrenous extravasation.

¹ Cottet quotes Veillon and Zuber's law, "No gangrene or putrefaction without anaërobic bacteria," and finds in all the cases examined by him that when anaërobic bacteria were present there was gangrene, and when they were absent, even with extensive infiltration, there was no gangrene. He confesses that the suggestion requires further clinical confirmation.

CLINICAL TYPES

Periurethritis.—In almost any long-strictured urethra there can be felt, by introducing a sound and palpating the canal against it, irregular masses of cicatricial tissue occupying more or less of the whole length of the canal. A sensitive nodule in this mass indicates an area of periurethral inflammation that may, at any time, develop into an abscess.

Periurethral Abscess.—With the onset of suppuration in this tissue there is a sharp, septic febrile reaction—one of the many septic fevers classed by patients as dumb ague. The lump grows rapidly larger, more painful, and tender, and it may encroach upon the urethra sufficiently to cause retention. Ultimately, as indicated above, it opens into the urethra, or passes into a chronic stage, or more commonly extends into the perineum, burrowing thence throughout the subcutaneous tissue of the external genitals, the thighs, the groins, and even to the lower belly, discharging at many points, and leaving the whole region a mass of fistulæ, through which the urine escapes, perhaps not one drop passing by the natural channel. In these cases the patient makes water sitting, the urine escaping as though through the sprinkler of a watering-pot. Civiale reports a case of urinary fistula with fifty-two external openings.

Urinary Infiltration (*Periurethral Phlegmon, or Urethral and Periurethral Gangrene with or without Urinary Infiltration*).—Beginning as an acute or a chronic periurethral abscess, or as a gangrene of the urethral wall, the acute infective process rapidly spreads over the perineum and the genitals. The first sign is a tender edematous swelling in the median line of the perineum which rapidly increases in size and spreads superficially in every direction. If there is gangrene this reaches the surface within twenty-four or forty-eight hours, and spreads with frightful rapidity. If there is not gangrene the enormous edematous swelling, which may reach the size of a child's head, breaks up into innumerable foci of suppuration, from which pus, and, later, pus and urine pour out. Accompanying all this are shock, severe septic symptoms, and usually retention of urine.

It is usual in these cases for the tumour to be extensively infiltrated with urine, and to contain one or more irregular central cavities filled with urine, necrotic tissue, and pus; but there may be no appreciable infiltration nor any communication with the urethra, and urethrotomy without a guide may be required to relieve the retention.

The bladder never becomes gangrenous, though the urethra slough to its very neck. The suppuration and gangrene may leave

a urethro-rectal fistula, but the cavity of the pelvis is never invaded. In practice it is always found that infiltration starting from the membranous urethra at first extends forward to the perineum and only secondarily passes backward to the rectum.

Inasmuch as urinary infiltration usually occurs in debilitated persons, and is itself a very virulent septic process, it usually terminates fatally.

Treatment.—*Prophylaxis.*—No serious disorder is more entirely preventable than urinary infiltration. Intelligent treatment of the stricture and early incision of all foci of suppuration about the perineal urethra would suffice to obliterate the condition. But even passing over these precautions, there is a very fair proportion of cases that have their dumb ague for days with but slight local symptoms until, finally, they burst into full infiltration, and it is too late. A careful physical examination would disclose the tender perineal mass, the proper incision of which might save a life.

Radical Treatment.—There is no sane palliative treatment of periurethritis and its complications. The *simple inflammatory areas* should be treated by methodical soundings, perhaps aided by hot sitz baths and leeches to the perineum. Under such a course they rapidly suppurate or disappear.

Periurethral abscess (p. 129) requires prompt evacuation and drainage by median perineal incision. The urethra should be opened and the stricture cut. In dealing with small abscesses this is a simple matter. Large ones should be cut and drained like infiltrations.

Infiltration of urine demands immediate and radical incision. The patient's life is entirely in the surgeon's hands. Timorous incision is the patient's death-warrant. The infiltrated area must be slit open from end to end. Necrotic tissue must be sacrificed with no thought of ultimate disfiguration. Every boggy pocket must be opened up and drained. Although each case presents its own special features, all may be made subject to certain general operative rules:

1. Operate immediately and fearlessly, with the knife, not the thermo-cautery.

2. With the patient in the lithotomy position, let the first incision be from end to end of the infiltrated area in the median line. Below it may reach to within $\frac{1}{2}$ inch of the rectum. Above it may split the scrotum to the root of the penis, thence up one or both groins. (Escat reports a cure after an incision 16 inches long.) Carry the incision down to the perineal urethra, and then with the fingers break into all urinary necrotic and suppurating foci, and destroy the partitions between them. Next, with scissors and knife,

clip away all masses of necrotic tissue and make the way clear for drainage of all parts of the wound. Parallel lateral incisions are rarely required.

3. The bladder must be opened and drained, either through the perineum or above the bone, before the patient leaves the table.

4. The stricture must be cut, but occasionally this may be deferred until a later date.

5. The after-treatment must be supporting and cleansing; stimulants, irrigations, and drainage.

URETHRO-PERINEAL FISTULA

Varieties.—Urethral fistulae are congenital (p. 13) or acquired. Acquired fistulae are penile (p. 129), perineal, or urethro-recto-perineal. Perineal fistulae are blind internal (urinary pouch), blind external (perineal sinus), or complete. Fistulae may originate in the pendulous (p. 129), the prostatic (p. 247), or the bulbo-membranous urethra. Only the last concern us here.

A fistula from the bulbo-membranous urethra, though commonly spoken of as perineal or perineo-scrotal, may extend to any point that infiltration can reach—rectum, groin, thighs, abdomen. Desnos mentions one extending to the lower angle of the scapula.

Rectal fistula will be considered in another place (p. 247).

The fistula usually follows abscess or infiltration, rarely trauma, or cancerous, calculous, or tubercular ulceration. Its internal orifice is usually single, however many the outward openings. The fistula, if long and tortuous or branched, contains diverticula which repeatedly close, form abscesses, and discharge; or, again, they contain foreign bodies or calculi, or the entire tract may be encrusted with calculus.

Complete urethro-perineal fistulae have been classified by Thompson¹ as simple fistulae, fistulae with induration, and fistulae with loss of substance.

Simple fistula is a direct tract without indurated walls.

Indurated fistula is embedded in a mass of sclerotic tissue. It may be branched, and is often tubercular or epitheliomatous. Fibromata (Monod) and fibromyomata (Cocteau) are found in the walls.

Prognosis.—Blind internal fistulae tend to close unless there is stricture. If they persist, there is danger that they may suppurate and form the starting-point for abscess or infiltration.

¹ Stricture of the Urethra, 2d Edit., Lond., 1858, p. 357.

Blind external fistulæ close spontaneously, or after cauterization or curettage.

Complete fistulæ will close when the impediment to urination (stricture, calculus, foreign body) is removed, unless there is considerable loss of substance, or the fistula is tuberculous or cancerous.

Treatment.—The chief point in the treatment of fistula is to remove the impediment to urination—in most cases to *dilate the stricture*. This done, every simple fistula will close itself; but as long as the urethra is obstructed the urine will seek the freest outlet—viz., the fistula.

Indurated fistula is usually associated with resilient or impassable stricture. To cure it all the scar tissue about the fistula and the urethra must be excised and external urethrotomy performed.

Fistula with loss of substance may sometimes be cured by a median section connected by radiating incisions with all the branches of the fistula and the insertion of a graft between the separated ends of the urethra. Too often, however, such an operation simply leaves the fistula larger than ever.

Sir Astley Cooper¹ records the closure of a fistula "the size of a pea" by injections of nitric acid after two operations with hair-lip pins and suture had failed. Such a result encourages the hope that the injection of a concentrated solution of hydrogen peroxid, which has proved so eminently curative of the baffling penile fistula (p. 129), may also prove serviceable for the cure of perineal fistula with loss of substance.

Tubercular fistula closes only when thoroughly curetted or excised. Cancerous fistula is a minor complication of a mortal disease.

The catheter à demeure and epicystotomy have been employed in the cure of fistula.

Symanowsky's operation may also be applied to fistula with loss of substance in the perineum. Sabine first adopted it for the perineum, and McBurney,² in an admirable paper, clearly detailed his experience with it in 6 perineal cases, 5 of which were successful. The operation apposes two large, raw, flat surfaces to each other, and covers the fistula with a double thickness of flap. I have found this very easy of execution.

A straight incision in the skin is made through the centre of the fistula in the pendulous urethra, at its right edge in the perineum—always in the long axis of the urethra. The parts must be clean, washed, and shaven, and it is better, if hairs grow on the flap to be turned in, that they should be removed by electrolysis as a first step

¹ Surgical Essays, Lond., 1819, p. 205.

² New York Med. J., 1886, v, 513.

in the operation. The edges of the fistula must be curetted and cleaned of all suppurating granulations. The length of incision in the anterior urethra varies with the size of the fistula. In the perineum the incision commences $\frac{3}{4}$ inch in front of, and terminates at the same distance behind, the fistula. The incision goes through the superficial fascia. On the right of this incision, the skin and superficial fascia are dissected up to form a half-oval pocket, sufficiently deep to take in a flap turned over from the other side. On the left of the first incision, another half-oval flap is made of skin and superficial fascia. Its greatest width in the perineum is $\frac{3}{4}$ inch. This flap is dissected up towards the median line until it can be turned over as on a hinge. Enough tissue is left at the hinged line to insure the vitality of the flap. The cutaneous surface of this flap is freely rawed with curved scissors, except that part which, when the flap is turned over into its place, covers the fistula.

Catgut sutures, passed from the right edge of the undermined flap into the pocket, take in the free edge of the flap to be inverted, and are again passed through the pocket and out upon the surface near the point of entrance. In this way a number of loops are formed, with which the inverted flap is pocketed and drawn snugly into place. A few more catgut sutures are passed from the surface of the undermined flap through the raw surface of the inverted flap, and serve to bind together the raw surfaces. Finally, the edge of the undermined flap at the line of the first incision is united by many points of suture to the curved edge on the other side, from which the inverted flap has been cut away. Bichlorid irrigation, iodoform, cotton, and a T-bandage with pressure, complete the dressing. An opiate confines the bowels at first, and a catheter is used for many days every time the patient urinates, the bladder being washed with a solution of boric acid each time. One of McBurney's cases took over three months to get well. The other 4 were healed in thirteen, seventeen, nineteen, and thirty-four days respectively. Of course the entire urethra must be freed from stricture before the plastic operation is attempted.