Cerate or vaselin should be smeared along the edges of the lids to facilitate the escape of the pus which the swollen lids tend to keep inside the conjunctival sac, though the constant irrigation meets this difficulty pretty well. Cantholysis—slitting the outer commissure to the bone—formerly much insisted upon, is much more rarely called for since the introduction of modern methods. It is very rarely, if ever, required.

This treatment is to be kept up unremittingly with irrigations every two or three hours until the symptoms begin to decline—one or two weeks—and then, as the swelling abates and the mucous membrane assumes a velvety appearance, the nitrate of silver in a 2% solution may be applied with a brush once a day, the other means being continued with diminishing intensity.

Chemosis is no longer treated by scarification. This does no real good, as it only removes the symptom (the edema) and not the cause (the episcleral indurated ridge). The best testimony as to its inefficiency is furnished by the fact that the numerous scarificators formerly in evidence have disappeared from the shops.

The indication furnished by chemosis is to persist in antiphlogosis—cold.

If the cornea becomes opaque, or even before this, atropin should be used, in order to prevent congestion and implication of the iris.

Preorbital pains are treated like those of rheumatic gonorrheal ophthalmia (p. 160).

Finally, in the last period, after the gonococci have disappeared and the stage of catarrhal conjunctivitis has arrived and all acute symptoms have subsided, then astringent collyria are in order, such as—

℞ Alum.................................... 0.5% to 1%
℞ Zinci sulph.............................. 0.5% to 1%

used with a dropper 2 or even 3 times a day—more or less often and more or less strong, according to the effect.

CHAPTER X

SPASMODIC AND CONGENITAL STRICTURE

An abnormal narrowness of any portion of the canal of the urethra constitutes stricture, or, since the urethra is naturally a closed canal, Sir Charles Bell's definition may be more accurate and loss of dilatability may be termed stricture. This contraction of the canal, according to the first definition, to constitute stricture must be unnatural, for the urethra has certain points of normal contraction—namely, the meatus, the middle of the pendulous, and the beginning of the membranous urethra, and these are not strictures. They became so, however, if unduly small. Thus, an individual with an average-sized penis and urethra, whose meatus will only take No. 10 French, has stricture (congenital) of the meatus, although he may never suffer any inconvenience therefrom. Again, any inflammatory condition of the walls of the canal, or spasmodic contraction of the same, constitutes stricture in a certain sense, as does also any growth upon or beneath the mucous membrane—cancerous, tubercular, syphilitic, or membranous. In the same way a collection of fluid outside the canal may constitute stricture—abscess, serous or hydatid cyst, etc.—anything, in short, which lessens the size of the canal when distended by the stream of urine, foreign bodies, of course, excepted. In all the last-named conditions, however, stricture is only an epiphenomenon, and not the disease itself.

True stricture is of two kinds: 1. Muscular or spasmodic. 2. Permanent or organic—the latter congenital or acquired. Inflammatory stricture does not exist as a disease of the urethra. Any inflammation will lessen the calibre of the canal, just in proportion to the turgescence of the mucous membrane; but this is unimportant. No amount of simple inflammation of the urethral mucous membrane constricts the canal enough to occasion serious inconvenience (retention), unless occurring in connection with organic stricture, assisted by muscular spasm or complicated by congestion. A croupous membrane may exist within the urethra, and more or less obstruct the flow of urine; but this is exceedingly uncommon. Roki-

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tansky speaks of " very rare cases " where " we find primary croup occurring on the urethral mucous membrane "—this chiefly in children. Membranous deposits may occur upon the surface of organic stricture, or behind it, and may there form the nucleus of stone. But obstruction of the urethra by stone, membrane, foreign body, abscess, or tumour, whether within or without the canal, is in no sense a constriction. It is therefore inaccurate as well as confusing to term such conditions stricture.

MUSCULAR OR SPASMODIC STRICTURE

Spasmodic stricture is a symptom, not a disease. It always depends upon some separate and distinct condition. It varies with the variations of this etiological factor and disappears with its cure. Of all reflexes, spasm of the urethra is the most reflex.

Spasmodic stricture is an involuntary contraction of the compressor urethræ muscle of sufficient force to impede or to prevent, temporarily or permanently, the passage of urine from the bladder. I have encountered no case of spasm of the pendulous urethra, though De Bovis[1] records 2 cases. The so-called spasm of an organic stricture is elastic or congestive, except when it occurs in the compressor muscle, at the membranous urethra (see below).

An active predisposing cause is a sensitive, high-strung nervous organization, often in connection with an irritable, a gouty, or a rheumatic constitution, and particularly in those who are sexually astray. Such a one is unable to urinate in the presence of his fellows, and the more anxious he is to pass his water, and the more water there is to pass, the more difficult does he find it to satisfy his desire. Certain mental suggestions contribute to increase or to diminish the spasm. The sound of running water often breaks the spell, while derision or absolute silence has the opposite effect. I have known a commercial traveller who, during twenty years of life spent mostly on the road, could not urinate in a railroad car except by means of a catheter. Yet such a man may well go through life with no great inconvenience from his urethral idiosyncrasy, his *urethrismus*, as Otis termed it. But let him acquire an organic stricture or a vesical calculus, let him be operated upon for hemorrhoids, or suffer any local or constitutional strain or shock, and his urination immediately becomes difficult or impossible to accomplish for a greater or less space of time. I have known an operation for hemorrhoids to occasion complete retention lasting ten days, long after the patient was up and

[1] Gaz. des hôp., 1897, lxx, 583.

about. Such a spasm, if unrelieved by catheterization, may even cause rupture of the bladder. Thus there is this much in the theory of Otis that an abnormally small meatus may cause urethrismus, that if the meatus is small enough to irritate the urethra by impeding urination, it may excite a spasmodic stricture, though I have never known it to do so.[1]

Symptoms and Diagnosis.—The one symptom of spasmodic stricture is inability to urinate. Hence it is sometimes confounded with organic stricture. Indeed, not a few cases of stricture deemed impassable when put upon the operating table have been found to admit a full-sized sound, being cases of spasm with little or no organic contracture. The following differentiating points are therefore memorable:

1. Spasmodic stricture occurs only in the membranous urethra.
2. Unless there is some organic lesion of the urinary tract the urine is bright and sparkling, which it very rarely is if there is organic stricture sufficiently marked to seriously arrest urination.
3. Although it may be impossible to introduce a filiform bougie or a small sound, a full-sized sound, if allowed to rest for a few moments against the face of the stricture, will usually tire the muscle, and finally slip into the bladder. If it slips in by its own weight its course will often be jerky and irregular, as the muscle gives way by succeeding spasms of lessening intensity.
4. When the instrument is once introduced the obstacle is wiped out, and the withdrawal of the instrument is not opposed by any such grasping as is felt when there is tight organic stricture.
5. Even though a spasmodic stricture be absolutely impassable, general anesthesia will entirely relax it and permit the passage of any instrument that the normal canal will take.
6. Organic and spasmodic stricture often coexist. Indeed, organic stricture is the most common cause of spasm, and spasm may be the notable symptom of an organic stricture of large calibre.

Treatment.—The retention may be relieved by a hot sitz bath, by an opiate, by ice in the rectum, or by catheterization, with a metal instrument, if necessary.

The tendency to spasm is overcome by removing the cause and improving the general hygiene, special attention being paid to sexual irregularities, concentrated urine, and organic stricture.

To prevent recurrence of the spasm I know nothing better than the passage of a full-sized steel sound to overstretch the muscle, and nitrate-of-silver instillations to blunt the sensibility of the deep urethra.

[1] J. of Cut. and Gen.-Urin. Dis., 1887, v, 2.

CONGENITAL STRICTURE

Congenital stricture or occlusion of the urethra may occur at 3 places in the urethra:

1. At the meatus.
2. At the outer limit of the fossa navicularis, and
3. At the membranous urethra.

Such strictures are caused by inaccurate apposition in the embryo of separately developed sections of the urethra. Stricture in the deep urethra is most unusual. Guibé[1] relates an interesting fatal case in which the stricture only admitted a needle. On the other hand, congenital stricture at the meatus, or at the outer end of the fossa navicularis (aptly termed the second meatus) is very common. Indeed, the size of the meatus is no more fixed than the size of the mouth or the nose, though, in general, a small penis is far more likely to have a contracted meatus than is a large one. Moreover, the second meatus is very rarely smaller than the first, hence congenital stricture need not be looked for here unless congenital stricture of the meatus externus is seen to exist.

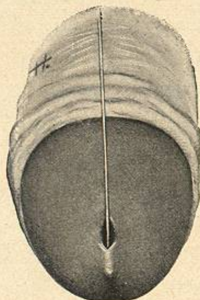

Fig. 35.—Congenital Stricture of the Meatus.
A probe is inserted into the pocket behind the stricture.

The solution of the question, how much contraction constitutes stricture of the meatus, depends upon one's point of view. Strictly speaking, a meatus is strictured if a probe, introduced into the fossa navicularis and rotated so as to sweep the point outward along the floor of the urethra, encounters a thin membrane which it must surmount in coming out through the meatus. This obstruction always occurs on the floor of the canal, and is never anything more than a fold of mucous membrane that may be pushed out by the probe (Fig. 35). The second meatus is strictured if it is not so large as the normal true meatus.

Strictly speaking, the above rule holds good. Practically, however, stricture of the meatus—to which so many reflex ills were once attributed—rarely produces any symptoms. If actually so small as to interfere with urination it may, perhaps, like a tight prepuce, cause hernia or even epilepsy in a child, and spasmodic stricture in later life (see above), and the urethra may become considerably dilated behind it. But such cases are exceptional. Most men can go through life in blissful ignorance of the size of their meati unless

[1] Bull. de la soc. anat. de Paris.

they fall foul of the genito-urinary surgeon, who, to permit the passage of his sounds, may justly claim the right to enlarge an orifice that had otherwise been sufficient for all Nature's claims.

Treatment.—The only way to cure a stricture of the meatus is to cut it. As above remarked, this is, as a rule, quite unnecessary, except for the surgeon's purposes.

The operation of *meatotomy* has occasioned the invention of various more or less ingenious *meatotomes*, of which the best is a blunt-pointed straight bistoury. This is the only instrument required, and the operation may be very elegantly performed as follows: A small cocain tablet is inserted within the meatus and pressed into the little pocket below it. This is allowed to remain in place for five minutes. If the urethra is very dry, instillation of a single drop of water upon the tablet will hasten its solution. Then the undissolved cocain, if any remain, is extracted and immediately replaced by a pinch of desiccated suprarenal extract. In a few moments the tip of the meatus is seen to blanch. The bistoury is then inserted and the membrane deliberately divided upon a finger placed beneath the frenum, which appreciates the fibrous ring about the meatus and at the second meatus, and by feeling the blade of the bistoury beneath the skin recognises when they have been effectually divided. The passage of a bulbous bougie proves that the obstructions have been sufficiently cut. If this technic is observed there will be no pain and little bleeding. The meatus is flushed clean and packed with cotton upon which glutol has been thickly dusted. This substance combines hemostatic and antiseptic properties. The glutol cotton is removed and replaced at each act of urination, and the wound is kept open by inserting the curve of a clean hairpin into the urethra once a day. The hemorrhage may be profuse if no hemostatic applications are made, but there are no other complications, and in the most extreme case pressure will check the flow of blood. Infection need not be feared, even if the patient is suffering from an acute attack of gonorrhea.