

fusion arises chiefly from the fact that the two inflammations often exist together, in which case the more acute symptoms of the less important cystitis blind the surgeon to the existence of a pyelo-nephritis which, in the long run, will do the patient far more harm than will his bladder lesion. A less frequent cause of confusion is the fact that a diseased kidney sometimes produces symptoms of cystitis when the bladder is entirely sound (p. 571). The surgeon, confronted with a case whose symptoms are pyuria and dysuria, may struggle for months to heal an uninfamed bladder, overlooking, all the while, a pus kidney that stares him in the face. Every surgeon who has had any experience with renal diseases has met such cases, and probably has sometimes been deceived himself. The distinguishing feature of renal pus is that it sinks to the bottom of the glass and there forms a compact level base like sand (Plate IX). Bladder pus, on the contrary, forms a billowy, fluffy deposit, and often does not sink fully to the bottom of the glass, but remains more or less suspended in the fluid (Plate V).

PLATE VI

When the urine of severe alkaline cystitis complicated by suppurative pyelo-nephritis is urinated in two glasses his bladder is gently irrigated with a hot boric-acid solution until the fluid returns clear. On withdrawing the catheter the anterior urethra is also flushed with the solution. An hour later the urine is withdrawn with a catheter (in order to avoid possible prostatic contamination), and it is then as turbid as before, the pus comes from the kidney. This test fails if catheterization causes bleeding or if a clean return flow cannot be obtained from the wash. The remittent character of renal pyuria, as well as the chemical and microscopical characteristics of kidney urine will be commented upon elsewhere (p. 558). Suffice it to say that an expert physiological chemist can always distinguish pyelo-nephritis from cystitis by the presence or the absence of bladder epithelia on the one hand, and albumin, casts, deficient excretion of solids, and renal and pelvis epithelia on the other.

Prostatitis and vesiculitis are distinguished by an examination of their secretions expressed by rectal touch as well as by the sensation imparted to the finger in the rectum (p. 89). Tubercular cystitis is distinguished by its marked peculiarities (p. 404).

PROGNOSIS

Acute cystitis recovers spontaneously or under treatment, or becomes chronic. Chronic cystitis is curable with its predisposing cause (retention, stone, tumour) or even without it. Thus many cases of cystitis due to prostatic obstruction are cured though the

PLATE VI



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obstruction remains. But they are always in danger of relapse until the predisposing cause is removed.

The danger to life from cystitis itself is not great. Rupture of the bladder, interstitial and perivesical suppuration and peritonitis are remote possibilities. As long as the kidneys remain sound the patient's life is safe. But when the infection once reaches them the prognosis darkens (p. 362).

TREATMENT

Prophylaxis.—Prevention of cystitis is an important element in the treatment of gonorrhoea, prostatitis, stricture, hypertrophy of the prostate, bladder, stone, and tumour, as well as in every passage of an instrument into the bladder. It requires no special notice here.

Treatment of Acute Cystitis.—Acute gonorrhoeal cystitis is the type of all acute inflammations of the bladder, and the treatment of the gonorrhoeal inflammation (p. 139) is that of all the others. Nitrate-of-silver instillations are not so efficacious in the non-specific inflammations. If there be any removable cause (catheter tied into the bladder) it should be taken away. If the cause be stone or a foreign body, no attempt should be made to remove it until the intensity of the inflammation has been quieted. If cantharides, turpentine, or cubeb is being taken by the patient, it should be discontinued during the acute stage of the affection, to be resumed in the subacute stage. Copaiba sometimes works wonderfully well in quieting acute symptoms, but it cannot be relied upon. Asparagus should not be eaten by a patient with acute cystitis; common salt, strong coffee, and lemon-juice should also be avoided. There is no occasion for any local or general abstraction of blood, but the measures detailed at pp. 110–112 should be studiously enforced. If the cystitis be a strangury from cantharides, plenty of opium—or camphor in emulsion—and a very free use of diluents, must be relied upon. In all cases repeated use of a full hot bath or a hot hip bath has a soothing effect. The rectum should be kept free by copious warm enemata, and opiates should be given by the rectum, not by the mouth. Absolute rest, with the hips raised, and alkaline diluents, suffice in mild cases. If abscess form in or around the walls of the bladder, an opening should be made externally through the hypogastrium, the rectum, or the perineum at the earliest possible moment, to prevent perforation and infiltration.

Treatment of Chronic Cystitis.—The peculiarity of chronic cystitis, depending, as it always does, upon some other morbid condition, renders its special description unsatisfactory, and begets a necessity for constant reference to the other affections which underlie it.

A reference to the pages devoted to the treatment of the inflammation of the urinary tract in general (pp. 367 to 380), and to the sections on those diseases with which cystitis is especially associated, notably prostatic hypertrophy, stricture, and stone, will give a better foundation for the treatment of the disease than anything that can be said here. In general, the radical treatment of chronic cystitis consists in removal of its cause. If the cause is not removable, or if it has been removed, the treatment is palliative. Attention to the general health, the urinary hygiene, the condition of the bowels, and the quality of the urine constitutes the essential background, the passive part of the cure, as it were, while the active work is performed locally.

The Urine must be Modified.—Its specific gravity should be kept below 1.020—below 1.015, if possible. This object is attained by making the patient drink plenty of water. Some balsamic, such as oil of wintergreen, eucalyptus, sandal-wood, or turpentine, is administered, together with an alkali. The addition of a urinary antiseptic is especially valuable in prostatic cases, and may be useful in any event. These internal remedies are conveniently put up in soft capsules, each capsule containing a dose. Favourite combinations are:

℞ Ol. santal. flav. 10 grammes
Potass. citrat. 5 “

M. Fiant caps. moll. No. XV.
Sig.—One capsule after each meal.

℞ Salol
Oleoresin. cubeb. } āā 5 grammes
Copaiba, Para }
Pepsin q. s.

M. Fiant caps. moll. No. XV.
Sig.—One capsule after each meal.

℞ Ol. santal. flav. } āā 5 grammes
Oleoresin. saw palmetto }

M. Fiant caps. moll. No. XX.
Sig.—One capsule after each meal.

℞ Urotropin 5 grammes
Ol. santal. flav. 10 “

M. Fiant caps. moll. No. XX.
Sig.—One capsule after each meal.

Any number of similar prescriptions may be devised. None of them is specific, and I hesitate to lay down any rules for their administration. I am inclined to use urotropin if there is any fever and whenever the kidneys are threatened, and I am never satisfied

with any preparation that disagrees with the patient's stomach. It often seems beneficial to change the prescription once or twice a month unless the patient is doing peculiarly well.

Hygiene must not be Forgotten.—The patient must be made to understand the various dangers to be avoided—alcohol, sexual excess, exposure to cold, overexercise, overeating, etc. (p. 275). Some patients are far more sensitive to those influences than others; and older men, especially prostaties, are the most sensitive. But each patient is a law unto himself, and must find out by his own experience those liberties in which he may indulge and those he must avoid. The surgeon can only help him by general suggestions and careful watching.

The Local Treatment is the most Important.—This is the active, efficient part of the treatment from which a cure is expected; it must be systematic and intelligent. The more acute or recent the inflammation the more advantage there is in using instillations and in pushing the strength of the solution to the limit of toleration. These cases must be managed by the surgeon himself. I have had most success with nitrate of silver, protargol, and permanganate of potash. Chronic, long-standing cases often cannot be cured unless the cause of inflammation is removed. Ammoniacal inflammation may sometimes be overcome by vigorous local treatment, and the attempt should always be made, as the patient is far safer with chronic acid cystitis than with chronic alkaline inflammation. In most of these chronic cases, however—they are practically all due to prostatic hypertrophy, to stone, or to contracture of the neck of the bladder—the surgeon must be satisfied to hold the disease in check as best he may. The patient is taught to use his own catheter systematically, and instructed in the use of a boric-acid solution for irrigation (p. 281). Any acute phenomena may usually be allayed by a few irrigations with stronger solutions at the hands of the surgeon.

To estimate the results of treatment we have a reliable index in the urine. Months of practice are required before the surgeon is able to estimate the import of urinary showing; but once he has become expert, a glance suffices to tell him whether the patient is better or worse for his last treatment. The two-glass test is always to be used (p. 83) and the contents of the second glass especially noted. If the patient's symptoms are acute or his general condition low, these, too, should react to the treatment; but in the majority of chronic cases the symptoms are so mild that the results of treatment show chiefly, if not entirely, in the urine.

Cystostomy.—Drainage of the bladder by means of a suprapubic or a perineal incision is employed for the relief of inveterate

cystitis when other palliative measures fail and the symptoms are too intense to be borne. When the cause of the cystitis is an inoperable tumour, permanent drainage by a suprapubic opening is the only available relief (p. 422). Also, in certain cases of sacculated bladder, interstitial cystitis, and pericystitis, prolonged suprapubic drainage gives the organ the physiological rest it requires in order to rally the forces left to it. If these conditions are not known to exist

cystostomy may still be performed, but it must be recognised to be an exploratory, not a palliative operation, undertaken for the discovery and removal of the cause of cystitis, not merely for the relief of symptoms. Even if there is interstitial cystitis or pericystitis, an essential part of their operative relief is usually the removal of the urethral obstruction to which the inflammation is primarily due.

The choice between the suprapubic (p. 459) and the perineal (p. 457) route cannot be decided categorically. The safety with which suprapubic cystostomy may be performed in these surgical days, and the excellent opportunity for inspection and palpation of the bladder

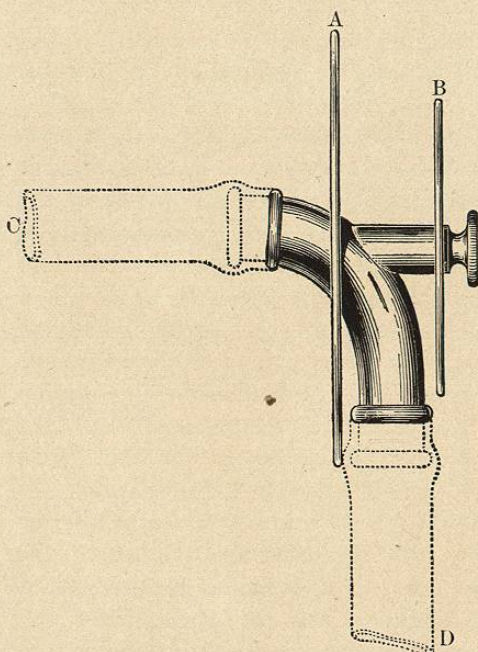


FIG. 92.—PERMANENT SUPRAPUBIC DRAINAGE-TUBE. A, plate fitting against abdomen; B, plate to go inside of belt; C, rubber tube into bladder; D, rubber tube to urinal.

which this route affords, make the operation above the bone the surgeon's choice in most cases. But urethral obstruction of one sort or another is such a constant cause of chronic cystitis that I have a strong leaning towards the perineal operation, which gives, if anything, better drainage than does the suprapubic route, and through which any form of urethral obstruction, stricture, hypertrophied prostate, or contracture of the neck of the bladder may be removed. A thorough digital exploration may also be made from the perineum, but inspection of the interior of the bladder is not possible. In any case, if the perineal or the suprapubic opening proves unsatisfactory,

a counter opening may be made with little added risk. The suprapubic route is better suited for permanent drainage. Of the many forms of tube employed to keep the fistula open I have derived the most satisfaction from the one figured herewith (Figs. 92, 93). It may be made of silver or hard rubber. The tube must be of a sufficient calibre to carry off thick mucus and clots. A short rubber drainage-tube is slipped over the extremity A, and this is introduced through the fistula into the bladder. The tube is held in place by a home-made washable belt passing outside the smaller disk (not between the two), and tight enough to press the inner disk firmly against the skin, so that no urine can escape outside of the tube. Continuous drainage may be maintained by attaching the outer end of the tube to a leg urinal.

If the bladder will contain a little fluid, it is more convenient to cork the tube and allow "hypogastric urination" only at stated intervals. All attempts at obtaining a muscular hypogastric orifice are foredoomed to failure. The corked tube is the best we have. If no tube is employed the fistula narrows down to a dribbling hole which is entirely unmanageable.

Treatment of Interstitial Cystitis and Pericystitis.—Interstitial cystitis and pericystitis are usually evidence of a neglected chronic cystitis. The adequate treatment of the inflamed mucous membrane will prevent inflammation of the underlying tissues. Even after interstitial cystitis and pericystitis have appeared much may be accomplished by palliative measures; but oftener operation will be necessary. Cystostomy releases the bladder from the slavery of incessant straining and gives it a needed rest. Perivesical abscesses are to be opened wherever they point. After a suprapubic tube has been worn for some weeks or months the bladder may be ready to resume its functions, and the suprapubic fistula may be allowed to close.

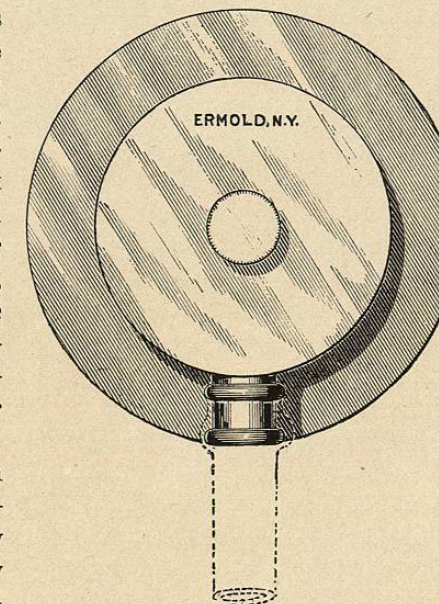


FIG. 93.—FRONT VIEW OF DRAINAGE-TUBE.