

THE 1946 YEAR BOOK of UROLOGY

OSWALD S. LOWSLEY, M.D., F.A.C.S.

*Director, James Buchanan Brady Foundation, New York Hospital;
Visiting Urologist, Saint Clare's Hospital; Consulting Urologist,
Hospital for Ruptured and Crippled, Peekskill Hospital,
etc.; Member, International Urological Association,
Pan-American Medical Association, Pan-American
Medical Confederation, International College
of Surgeons; Officer of the National
Order of Merit and Honor of Haiti*

THE YEAR BOOK PUBLISHERS

INCORPORATED

304 SOUTH DEARBORN STREET

CHICAGO

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UROLOGY

GENERAL CONSIDERATIONS

In less than two years of urologic service in one of the large West Coast Naval hospitals, James C. Sargent¹ has seen a number of cases of *Reiter's syndrome*. Most of them were accompanied by relatively minor genito-urinary manifestations, but three severe cases posed major urologic problems.

These three cases emphasize the fact that the disease may go considerably beyond the simple triad of poly-articular arthritis, urethritis and conjunctivitis. The arthritis may become deforming. The conjunctivitis may involve the cornea and anterior eye chamber. The urethritis may extend to the bladder and cause pronounced urinary symptoms (frequency, dysuria, pyuria, terminal hematuria). Moreover, prolonged low grade fever secondary anemia and general loss in health may be prominent. Superficial ulceration of the glans penis usually extending to a general balanoposthitis is common in the more severe cases. Clusters of large vesicles that finally ulcerate may occur on the soles. Mucous ulcers similar to those of the genitals may appear on the inner lips and buccal mucosa.

The disease has a rather rapid onset. Manifestations appear promptly and tend to increase in extent and severity for one to four weeks. The arthritis, at first fleeting, tends to settle in one or two joints, which for many months are chronically inflamed, stiffened and swollen. Eye symptoms, prompt to occur, are many months in receding. The urethritis, even if it becomes severe and involves the bladder, tends to recede and is the first of the major manifestations to disappear. Ulcerative lesions of the mucosa of the genitals and the mouth, together with

(1) J. Urol. 54:556-564, December, 1945.

those of the plantar foot surfaces, seem to appear in the wake of the other major lesions and, although they are persistent and refractory to local treatment, heal before the disease proper has run its course. All authors have emphasized the exceeding chronicity of the disease and its tendency to exacerbation, even after long periods of apparent arrest.

The three cases reported throw little light on the etiology beyond the simple fact that the disease is not due to any presently known organism. Certainly gonorrhea is not a part of its etiology. It may be pertinent to record that two patients were attached to the same battalion and that their duties led to rather close association for several months prior to the illness. Other authors have not presented anything to suggest that the disease may be contagious. With one exception, all reported cases have appeared in men and most of them in military personnel. It has been suggested that vitamin deficiency might be responsible. In each of the three cases reported, as well as other milder cases observed by Sargent, there was no question of dietary inadequacy. Withal, an infectious cause is strongly suggested. Further study may prove that it is a virus disease.

No specific or even notably effective treatment has been suggested. Response to sulfonamides and penicillin is not spectacular. Salicylates offer unimportant symptomatic relief. Local antiseptics apparently have little value in various surface lesions. Mydriatics and dark glasses are recommended. Immobilization of involved joints during the acute stages and diathermy as the arthritis becomes chronic offer symptomatic relief. Repeated foreign protein shock with typhoid vaccine intravenously seems definitely to benefit the eye and joint manifestations, especially after the first weeks of the disease. Whole blood is effective and needed whenever secondary anemia develops and the patient's general health becomes impaired.

[The editor has noted that treatment of the prostate such as massage may cause severe exacerbation of the eye symptoms, particularly if begun too early.—Ed.]

Fletcher H. Colby¹ considers *venous thrombosis and pulmonary embolism in urology*. None of the many recent reports on vein interruption for prevention of fatal pulmonary accidents has dealt with the urologic patient exclusively. Certain signs are sufficient evidence of venous thrombosis or of early pulmonary infarction to justify vein interruption. Tenderness in either calf is perhaps the earliest sign of venous thrombosis; a simultaneous postoperative rise in the temperature, pulse and respiration in a patient who is otherwise doing well is early evidence of pulmonary infarction. Often in convalescent patients, signs attributed to coronary disease, pneumonitis, atelectasis and so forth have been in reality due to unrecognized pulmonary embolism. Some of these patients have had no evidence of changes in the legs. Many of them have had heart disease, and death has been attributed to a pre-existing cardiac condition, whereas the true cause of death has been pulmonary embolism. Though occasionally the embolus comes from the heart, Colby believes that even in these patients its origin is usually in the veins of the legs.

Since, on the urologic service at Massachusetts General Hospital the incidence of fatal embolism seemed highest in prostatic surgery, all operations for prostatic obstruction in the years 1939-40 and 1943-44 were analyzed. These years were selected because the same types of operations were performed during both periods and because in 1939-40 no vein interruptions were done on the prostatic patients, whereas in 1943-44 vein interruptions were done and practically every patient was required to be out of bed the day after operation and daily thereafter.

There were approximately one third as many cases of venous thrombosis and pulmonary infarction in 1943-44 as in 1939-40. Incidence of fatal pulmonary embolism was reduced by two thirds. However, femoral vein in-

(1) J. Urol. 56:124-129, July, 1946.

terruption and early ambulation failed to eliminate entirely these serious complications or even reduce them to such a degree as to suggest freedom from danger. Femoral vein interruption, as a prophylactic procedure, is now done more often on selected patients, and it is hoped that it will further decrease postoperative mortality from pulmonary embolism.

Most investigators agree that the cysts of *pyelitis*, *ureteritis* and *cystitis cystica* are due to downward proliferation of lining mucous membrane and overgrowth of epithelium or to upward proliferation of connective tissue, severing the connection of cell buds and forming cell nests. The cysts are formed by degeneration of the central cells or by definite secretion of mucin-like material by goblet cells. It is also agreed that the lesion is caused by a chronic inflammatory process. Jules H. Kopp² (Washington Univ.) reports on three cases, in one of which diagnosis was made during life.

The chief complaint is lumbar pain, acute or dull, constant or intermittent, of long duration. Severe pain for one or more days may be followed by a dull ache. Chills and fever are frequently present, often with nausea and vomiting. The condition is usually associated with chronic inflammation of the urinary tract, and stones are frequently present. In some cases congenital malformation or urinary obstruction with retention has been found.

On physical examination costovertebral tenderness on the involved side is usually present. On cystoscopic examination the trigone is covered with many small translucent cysts, and the ureteral orifice of the involved side is usually red and edematous. The ureteral catheter meets with temporary obstruction due to the rupturing of cysts as it is passed. Blood appearing around the catheter is significant in *ureteritis cystica*. Relief of pain after passage of the catheter is also diagnostic. Appear-

(2) J. Urol. 56:28-34, July, 1946.

ance of the dye may be delayed, but kidney function is usually not impaired. The characteristic roentgen appearance of the lesion, as described by Kindall, is diagnostic: filling defects in the ureter, usually in the upper two thirds, give it a bubbly or frothy appearance. These defects can easily be mistaken for nonopaque calculi or air bubbles. Coexistent renal disease will also be revealed. Treatment consists of dilating the ureter, thereby rupturing the cysts, and the instillation of 2 per cent silver nitrate to destroy traumatized cysts. Successful treatment of the lesion with sulfathiazole has been reported.

A. Keller Doss³ (Fort Worth, Tex.) emphasizes the *diagnostic value of translumbar aortography in urology*. No test of renal function is truly adequate. Because it would seem that an organ's function is no better than its blood supply, evaluation of the arterial supply to the kidney should make possible more intelligent management of the renal economy, particularly from a surgical standpoint. All other factors being equal, a good blood supply is an indication for saving the kidney, and a poor blood supply, an indication for nephrectomy.

By renal arteriography, renal function may be estimated visually. Doss has used the method almost routinely for the past five years. It strikingly demonstrates the condition of the kidney above a completely or partly obstructed ureter in which the obstruction cannot be passed by a ureteral catheter and seepage of urine past the point of obstruction is slow. The large hydronephrotic kidney and the kidney filled with a staghorn calculus, often considered fit only to be removed, have been found, with the aid of arteriography, to be well worth saving.

The method has been of great help in the study of renal neoplasm, cyst, ectopia, duplication and agenesis, retroperitoneal tumor, hypertension and ureteropelvic junction obstruction. A diagnosis of renal disease rests

(3) J. Urol. 55:594-606, June, 1946.

largely on study of the shadow produced on the roentgenogram by the renal circumference, pelvis and calices. Often deformity of these outlines occurs relatively late in disease. Roentgen study of parenchymal arteries, by revealing deformities in the arterial tree, makes possible earlier recognition of pathologic processes.

[The editor wishes to caution against the routine use of this method and its use by any but an expert. Henline lost 11 of 12 dogs in experiments with the method, and there have been some human deaths.—Ed.]

Nils P. G. Edling⁴ (Stockholm) presents a *urethro-cystographic study in the male with special regard to micturition*. His material consists of 21 normal and 216 abnormal urethro-cystograms.

In the normal cases, retrograde injection produced a uniform roentgenogram with distention of the anterior urethra, which was usually wider in the bulb than in front; the membranous urethra was conical, and the prostatic urethra, where the colliculus relief always appeared, showed a narrow lumen. During micturition, the posterior urethra was also distended, passing with a broad lumen into the bladder. The bladder shadow was oval, the long axis being transverse to the body during the filling phase; during micturition the bladder was raised and during contraction showed a suggested division or drawn-out apex which did not appear in repose. During micturition, the bladder and prostate were lowered by relaxation of the pelvic floor. No contrast filling outside the lumen of the urethra or the bladder was seen in normal cases.

Edling contends that micturition investigation is an important complement to retrograde urethro-cystography.

Aage Friese-Christiansen⁵ (Viborg) discusses *urography in children after administration of the contrast substance by mouth*. He has used this method 16 times in 13 patients, aged 5-12. Indications for urography were clinical symp-

(4) Acta radiol. supp. 58, pp. 1-144, 1945.

(5) Ibid. 27:197-201, 1946.

toms referable to the urinary tract, such as hematuria, renal colic or pyuria, or abdominal disturbances suggestive of urinary tract disease without macroscopic or microscopic changes in the urine, or of an intra-abdominal disorder, especially chronic appendicitis or tuberculosis of mesenteric glands.

PROCEDURE.—The child is thoroughly cleaned out and receives no food or fluid after the evening before examination. Children under 10 are given 10 Gm. and older children 15 Gm. hippuran dissolved in very sweet oatmeal broth. After ingesting the contrast substance, the child lies on the right side for 30–60 minutes. Exposures are then made at intervals of $\frac{1}{2}$ –1 hour, depending on the rate of filling. The examination is usually completed in three or four hours.

Satisfactory pictures were obtained in 10 of the 16 instances; filling, though shadow intensity was weaker, was about the same as that obtained in intravenous urography. In two instances of still weaker shadows, the shape of the renal pelves and the course of the ureters could be seen. In the remaining four instances, diagnostic conclusions were not possible.

Because of the contrast substance in the stomach and intestine, especially the small intestine, interpretation of the first exposures is difficult; however, within three hours the substance is almost completely resorbed or scattered over a large area. In the one instance in which compression was used, the result was not relatively better than when it was not used.

The 10 good and 2 fairly good results were obtained in the 10 patients (13 examinations) who had symptoms referable to the urinary passages; the result of the examination was poor in only one patient with such symptoms. The other three poor results were in patients without definite signs of urinary tract disorder, and none was revealed by other examinations. In these cases, better results might have been obtained by using slight compression.

To a boy, 12, in whom intravenous urography showed

normal excretion on the left and none on the right, supplementary hippuran was given by mouth; after eight hours a nicely filled hydronephrotic pelvis was revealed on the right. In one instance, the result was confirmed by retrograde examination, and in another, by intravenous urography. The roentgen and surgical findings agreed in the four patients undergoing operation.

Norman Heilbrun and George Chittenden⁶ (M.C., A.U.S.) emphasize the *value of the 24 hour urogram in delayed excretory urography* and cite three cases in which early studies failed to establish the point of obstruction but in which the collecting system and ureter on the involved side were clearly outlined in the 24 hour study. In one case the shadows were still present after 48 hours.

In the first case an excretory urographic study was made after obstruction had been met during an attempt to catheterize the left ureter. Symptoms suggested low obstruction, and this was confirmed by catheterization. However, a stone noted at the ureteropelvic junction on the plain film was also considered a possible cause. The 24 hour study clearly showed that the obstruction was in the lower left ureter and not due to the stone in the upper tract.

In the second case a 24 hour urogram revealed obstruction at the site of a diverticulum which had developed after previous ureterolithotomy; at retrograde examination, the ureteral catheter was blocked by a small stone just above the ureterocystic junction and 3 cm. below the site of actual obstruction. In all probability clinical symptoms were due to the obstruction at the site of the diverticulum and not to the passage of the stone down the ureter.

In the third case the exact cause of obstruction at the ureterocystic junction was not determined. Hydro-nephrosis and hydroureter observed at the 24 hour ex-

(6) Radiology 47:51-58, July, 1946.

amination indicated that the block had been present for some time. Pain was relieved by catheter drainage, and the patient made an uneventful recovery. Observation five days after relief of obstruction showed marked improvement in the degree of hydronephrosis.

In most cases of acute ureteral obstruction in which excretory urograms are made, obstruction has been present for a few hours. The collecting system proximal to the obstruction becomes distended with urine, with resultant back pressure on kidney tubules and glomeruli. Excretion of diodrast by glomeruli and tubular cells on the involved side is delayed because of the increased pressure in the collecting system, in contrast with excretion within a normal time on the uninvolved side. Because of increased pressure in the collecting system, the dye is retained in the tubules and tubular cells. The retention in tubules and that in tubular cells account for the positive roentgen picture. The more complete the obstruction, the greater the back pressure and the delay in diffusion of the contrast substance through the urine to the point of ureteral obstruction. This difference in the degree of back pressure would seem to account for the difference in the time at which the tract is outlined to the point of obstruction. With fairly complete or complete obstruction, even though the acute pain has subsided, the diffusion may not occur for many hours; hence the value of the delayed study at 24 hours.

The clinical state should determine whether a patient with acute ureteral obstruction should be studied by excretory or retrograde urography. Excretory studies are indicated if obstruction is found during ureteral catheterization or if the plain film shows a stone and obstruction is suspected. For complete evaluation of the clinical state, the involved urinary tract should be outlined to the point of obstruction if possible.

[Delayed emptying of an enlarged kidney pelvis is an exceedingly important surgical indication.—Ed.]