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SURGICAL-UROLOGY

BY

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OF UROLOGY IN THE HUNGARIAN ROYAL PÉTER PÁZMÁNY
UNIVERSITY, BUDAPEST.

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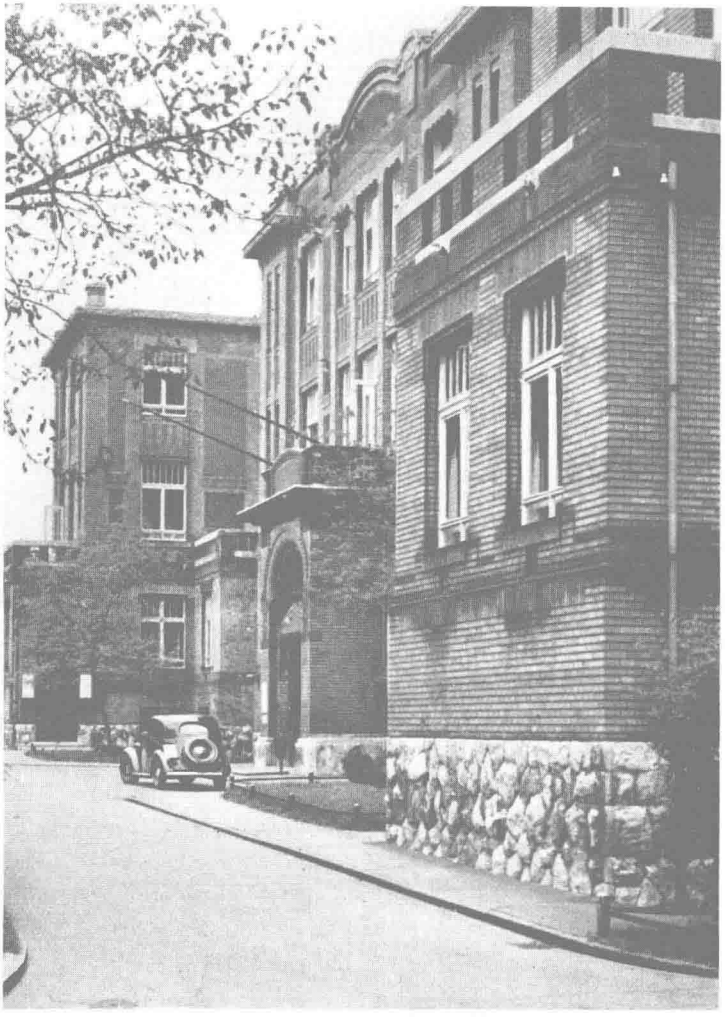

THE CLINIC OF UROLOGY OF
THE HUNGARIAN ROYAL PÉTER
PÁZMÁNY UNIVERSITY, BUDAPEST

PUBLISHER'S NOTE

Negotiations for this book were started a few months before the outbreak of the Second World War. From June, 1940, until 1945 we received no word from the author, neither were we able to communicate with him. Some months after VJ Day we learned from Professor Illyes that the book was completed in 1942, and that he had managed to get it set into type. Printing continued during the war, slowly and in the face of many difficulties. In May, 1947, we were advised that finished copies were on their way to England, but we had to wait many months more before the shipment eventually reached London.

"SURGICAL UROLOGY" was written in English by Professor Illyes, and set up by Hungarian craftsmen. It was inevitable that certain errors in terminology and grammatical construction should have resulted. For the reasons given above it was impossible to make corrections to the proofs, and where an error might give rise to confusion, it is corrected below.

It is hoped that this work, written from extensive personal experience, beautifully illustrated, and enriched by the description of many individual cases, will be of value to the urologist, the general surgeon and the senior student.

January, 1948

ERRATA

Page 120 The last line should come after line 4 of the page.

Page 143 Figure 99—should read "Pyelogram of a Double Right Ureter."

Page 274 *et seqq.* "Recidivation" should read "Recurrence."

Page 324 Figure 214—"Secundaer" should read "Secondary."

Page 331 "Decubitis" should read "Bed."

Page 496 *and elsewhere* "J. v. Pyelogram" should read "Intravenous Pyelogram."

PREFACE.

Urology is a new department of science the material of which has arisen from and for some time developed within the scope of internal medicine and surgery. In more recent times, however, the steady advance towards precision of diagnostic and conservative surgery has secured such a rapid progress of this branch of science that it has overgrown the limits of the above mentioned mother sciences. Today it is indispensable to be deeply absorbed in this branch of science in order to possess all the assets with which it provides us. Indeed, it provides us with a great deal. If recollecting my younger years, when as a surgeon I was also occupied with urology, I can see the utmost difference between the urology of those days and that of the present time. In those days it was possible to take it as a bye subject while today it has a special chair in our universities as well as in many other countries; large departments of urology are established everywhere and the study and practice of the subject requires the whole concentration of a man with fulltime work.

It is the aim of this book to present urology in its present advanced stage of development. By the omission of the theories not yet fully established I endeavoured to keep the subject in practical lines which would be of use also to the general practitioner.

The methods of examination, the clinical symptoms, the therapeutic measures and methods of operative treatment are discussed in such a manner as it was found to be most suitable by experience obtained in the Clinic of Urology of the University of Budapest. This special department, which disposes of 106 beds, has a considerable run, and it is reserved and established entirely for patients of urologic surgery.

At the end of each chapter we present our statistics and report some of our cases of special interest.

The book contains 391 partly coloured illustrations which make long descriptions superfluous and most of which represent our own cases. We also used some figures of the following publications: *Eiselsberg:* Lehrbuch

der Chirurgie, *Kirschner:* Operationslehre V/2., *Marion:* Traité d'Urologie II. *Lichtenstern:* Urologische Operationslehre, *Bier–Braun–Kümmel:* Chirurgische Operationslehre, *Corning:* Topographische Anatomie. The illustrations of cystoscopy are drawn with such alterations that they may well be regarded as original.

Before passing on this book to my readers I would fain offer my special word of thanks to my pupils (Prof. extraord.: *A. Ádler–Rácz*, *Gy. Minder*, Docents: *A. Babics*, *J. Borza*, *J. Dozsa*, *J. Herman*, Assistans: *F. Ágota*, *I. Fa*, *T. Gerendai*, *T. Huth*, *E. Illyés*, *L. Kádár*, *A. Lenhof*, *B. Melly*, *B. Pitrolffy–Szabó*, *T. Remete*, *A. Simonyi*, *N. Vondra*, Doctors: *Z. Kolbenheyer*, *A. Lukáts*, *I. Marczell*, *J. Molnár*, *F. Varsányi*, *I. Virányi*, *Gy. Vizkelety*, *K. Wodzik.)* who supplemented some parts of the various chapters, collected and arranged the statistical data, selected some cases of special interest and offered great help in the technical preparation of this book.

Budapest, Hungary.

G. DE ILLYÉS.

CONTENTS.

A) The surgical diseases of the kidney.

VOLUME I.

GENERAL PART.

Symptomatology.

In the diagnosis of a given disease a careful history and a consideration of the symptomatology plays a very important part. This is especially true of the diseases of the urinary tract, because here the more precise methods of examination such as instrumentation of the urethra, the bladder and the kidneys amount to a surgical procedure and are not to be considered lightly. A careful consideration of the symptomatology of the case guides us in placing the indications for such an instrumental examination, and sometimes allows us even to arrive at a diagnosis without it.

The history of the case.

An exact knowledge of the history shows us, in what direction and along what lines we should make our examinations to arrive at a diagnosis. In the personal history we must consider *previous diseases* and the *family history*.

In urology one most frequently finds *gonorrhoea* among the previous diseases. Among all others it is also the most important, because its existence for a longer or shorter time may explain many subsequent conditions. During the acute stage of gonorrhoea, a catarrhal inflammation of the renal pelvis, an acute arthritis of the knee joint, or of any other joint, an acute endocarditis, or acute epididymitis, or an acute retention of the urine caused by an acute prostatitis may occur.

Subsequently, some years after the original infection, disturbances in the passage of the urine may occur due to obstructions in the urethra (stricture). Further, a chronic prostatitis may cause an ever recurring urethritis, and by harbouring gonococci unnoticed for many years, may serve to infect the bladder and even other organs as well as the urethra, when the favourable opportunity presents itself. Infection may also be conveyed in this way to other individuals.

The long existence of a gonorrhoeal process in the urogenital organs develops favourable conditions for tuberculous infection; and the gonorrhoeal disease may gradually change unnoticed into a tuberculous one.

A previous *trauma* may have important consequences. Injuries, such as falling and striking the perineum upon a firm object, so that blood appears at the external meatus may cause extensive cicatrization of the urethra, so that severe difficulty in urination may result.

In fracture of the pelvic bones splinters of bone may injure and tear the urethra and bladder with even more serious consequences.

Rough and unskilled instrumental examinations, followed by severe bleeding, and with the production of false passages, may also serve as a source

of trauma. Non-sterile instrumental examinations may result in severe infections. A history of such a non-sterile procedure may often aid us in clearing up the source of the trouble in cases, where the patient ascribes the cystitis or other inflammatory condition of his urinary tract to catching cold.

Among *previous infectious diseases* tonsillitis plays an important rôle in the production of pyonephrosis, perinephritis, and also chronic nephritis.

Pyelitis and cystitis may occur after an attack of typhoid fever, kidney abscesses after a furunculosis, perinephritis after unnoticed skin wounds, and prostatitis in cases of general infection.

A tuberculous lesion in the urogenital organs never originates as the primary focus of the disease in the body ; but in every instance, from a preexisting focus in another organ, which may be detected from the history of the case.

When a thin, pale, young individual, who gives a history of cough, haemoptysis and slight elevations of temperature, complains of urinary frequency and pyuria due to no apparent other cause, we shall seldom go for astray, if we think of a urogenital tuberculous process. If, in addition, he has had pains in either kidney region, the suspicion of a beginning renal tuberculosis will often be confirmed by cystoscopy and ureter catheterization, combined with the necessary bacteriological tests (demonstration of the micro-organism in the urine).

In women a history of pregnancy, of metritis or perimetritis, or changes in the position of the uterus may give a clue to the proper diagnosis. Previous gynecological operations may be the cause of fistulas of the ureter ; while recurrences in the adnexa after operations for uterine carcinoma may produce a compression of the ureters, which lie embedded in the tumour mass, and may explain the complete anuria, which often occurs in those cases.

The possibility of inheritance should also be taken into account. When a young individual passes bloody or cloudy urine for no observable reason, and there is at the same time a history of tuberculosis in the family, we should suspect a urogenital tuberculosis and guide our examinations in this direction.

Hypertrophy of the prostate also seems to be a familial disease. I know of one family, in which the father suffered from prostatic hypertrophy. I did a prostatectomy for the same cause in four of his sons, the fifth of whom also has a greatly enlarged prostate.

Lithiasis also occurs in families. Uric acid diathesis may appear in one member as a gouty affection, while in others it may manifest itself as a ureter or kidney stone or as gravel.

An inherited predisposition is also to be observed in cases of *urethral stricture*. Not every case of gonorrhoea develops a stricture, only those who are so inclined. The same hereditary tendency is seen in *arteriosclerosis* of the kidney and in those urologic disorders caused by *hysteria* and *neurasthenia*.

Disturbances in the passage of the urine.

The urine is conveyed into the bladder by means of a peristaltic contraction of an increasing rapidity, starting periodically out of the renal pelvis and passing along the ureters. The number of the waves conveying the urine and passing along the ureters depends, under normal conditions, on the quantity of the urine secreted by the kidneys. The rapidity of the waves and their number are under the influence of the autonomic nervous system ; sympathetic irritation increasing, parasympathetic irritation decreasing the number of the contractions.

The ureters perforate the bladder wall obliquely, forming a valve-like closing, and preventing the back-flow of the urine from the bladder into the ureters.

The bladder wall consisting of smooth muscles is made up of three layers: the outer longitudinal, the middle circular and the inner longitudinal layer, whereas the urethra is composed of two layers only, the internal layer of which, connected with the bladder muscles, forms the sphincter vesicae internus, also made up of smooth muscles. The sphincter vesicae externus is made up of striated muscle fibres.

The smooth muscles of the bladder and those of the inner sphincter are under the control of the autonomic nervous system. The symphathetic fibres proceed to the bladder in the nervus hypogastricus starting from the 2—5 lumbar segment, while the parasympathetic fibres starting from the sacral segment proceed in the nervus pelvicus.

In ordinary circumstances, in a resting condition, the bladder is in a constant state of tonus, and so is the inner sphincter, on which the passing of the urine is partly depending. The effect of the autonomic nervous system is carried out in such a manner that sympathetic irritation decreases the tonus of the detrusor (longitudinal muscle fibers of the bladder), while parasympathetic irritation increases the same, and at the same time the tonus of the sphincter internus becomes stronger upon sympathetic irritation, and upon parasympathetic irritation it becomes weaker. The consequence of this contrasted innervation is, that when the detrusor contracts, the sphincter internus opens, and vice versa.

The passing of the urine is therefore carried out in such a manner that the pressure of the urine in the bladder brings about partly a subjective desire to pass urine, partly in consequence of parasympathetic irritation it increases the tonus of the detrusor but, at the same time, it relaxes the sphincter internus. Upon realisation of the desire to pass urine we are able to close and to loosen at will the sphincter externus consisting of striated muscles which are voluntary muscles controlled by the brain. The consequence of the voluntary and autonomic double innervation is that with children, owing to the undeveloped brain centres, urine is passed automatically; likewise with persons having a spinal injury, in consequence of the interruption of the connection with the brain, urination takes place automatically, periodically, or it drips away without the person's being aware of it.

Under pathological conditions the state of equilibrium existing between the sphincters and the detrusor is altered. A smaller quantity of urine may produce the desire to urinate, or on the contrary, the stimulus threshold may be so raised that the desire is rare or entirely absent.

In the former case we speak of *frequency of urination (pollakiuria)* which, if it is accompanied by a painful stimulus, is referred to as *strangury*.

Frequency of urination may occur under normal conditions, as after the ingestion of larger quantities of water, or in cases, where the quantity of urine is remarkably increased, as in diabetes insipidus. The most frequent causes are, however, *inflammatory conditions of the posterior urethra and the bladder*. The inflamed mucosa is then very sensitive to distention, and depending upon the intensity of the process and its location, various degrees of frequency may result. In the milder types but little change may be noticed, while in those cases, where ulcerative processes accompany the inflammatory change in the bladder, the patient may have to urinate every 10—20 minutes and may be tortured with

severe and spasmodic pain during the act. This may occur by day as well as by night, so that he is awakened from his sleep by the painful and urgent desire to pass his urine.

Diffuse catarrhal conditions of the bladder mucosa often cause frequency and pain, while circumscribed processes rarely do so, unless located on the trigon. In the male, irritation of the trigon due to various causes (stone, catarrh) are characterized by a pain localized at the end of the penis.

Congestion of the organs surrounding the bladder also gives rise to increased frequency. This is especially to be seen in cases of prostatic hypertrophy. Following long sitting in one place, as in long trainrides or when the bowels are not kept properly open, increased frequency may develop. Congestion also develops during the night, especially during the second half. Prostatics often suffer from nocturnal frequency which is greatest toward dawn. During the day, especially when the patient walks about, it may disappear completely.

Frequency may appear in the female during pregnancy or just before menstruation as a result of congestion of the pelvic organs. In inflammatory processes about the bladder, as in adnexitis, tumours of the uterus, appendicitis, prostatitis, the cause of the frequency is also the pelvic congestion.

Among the cases of frequency due to *nervous causes* we may mention that due to neurasthenia. The frequency here occurs during the day and disappears at night, so that the patient may not be once disturbed during his sleep by the desire to urinate.

Frequency may also occur in myelitis, in progressive paralysis, and in tabes, when it may be accompanied by spasmodic pain (vesical crisis). In this nervous group we may place those cases of frequency, which are often seen in various renal diseases and which are referred to by the French authors as «reno-vesical reflex». This is seen in pyelitis, pelvic stones, and in the early stages of vesical tuberculosis.

In stone of the bladder frequency occurs, but only when the stone is tossed about by shaking due to rapid walking, or driving in a carriage over rough ground. When the patient sits or lies down, the painful urgency usually disappears.

In the tumours of the bladder frequency may be due to an infiltration of the bladder wall which reduces the elasticity and hence the capacity of the bladder. If an ulceration has occurred the bladder wall will be very sensitive to minor degrees of distension. Papillomas, which involve only the mucosa, do not give rise to ferquency.

Retention of urine is another cause of frequency, regardless of whether infection of the bladder is present or not. Since the bladder is always partially filled by the residual urine remaining in it, a small quantity of urine coming down from the kidneys is sufficient to produce enough distention to cause the desire to urinate. It is characteristic of prostatic hypertrophy, which is the most frequent cause of retention, that the frequency occurs mainly at night. During the night the prostate swells producing an increase in the residual urine ; and so less urine from the kidneys is necessary to incite frequency. Further, the blood circulation through the kidneys is more perfect at night due to the recumbent posture of the patient, with the result that a greater amount of urine is secreted than in the day-time.

We must also mention the frequency due to *a change in the composition of the urine*. In urticaria, in various diseases accompanied by fever, in phosphaturia, and in oxaluria, the cause of the frequency and of the burning feeling in the

urethra is the salt crystals, which are precipitated in the urine and which irritate the mucous membrane mechanically. The frequency and burning on urination disappear if the precipitation is prevented by an ordered way of living combined with suitable dietary or medicinal measures, so that the salts remain dissolved in the urine as under normal conditions.

In certain diseases of the central nervous system accompanied by a disturbance in the innervation of the bladder produces no desire for urination. After a period of time the patient realizes, that he has not urinated and proceeds to empty his bladder. He may experience a sense of distention or of heaviness due to the overfilling of the bladder and still have no real desire for urination.

In some cases this desire to urinate may be absent, even though the contractility of the detrusor is intact. In others this may also be defective, and the patient cannot empty his bladder at all.

Retention of urine.

Retention is that condition, in which the patient cannot empty his bladder. If he can empty it only partially, we speak of *incomplete retention*, and the quantity of urine remaining in his bladder after the completion of the act of urination is spoken as *residual urine*. *Complete retention* exists, when the patient cannot void any urine at all from his bladder. Retention may be of short duration, existing only for hours or days (acute retention), or of longer duration (chronic retention).

The causes of retention of urine are very numerous :

I. *A mechanical impediment* to the outflow of urine from the bladder is caused most frequently by *prostatic enlargement*, which may give rise to both acute and chronic retention. The acute retention in these cases follows sudden enlargement, while the chronic form occurs following gradual increase of the glandular tissue itself. The enlargement of the prostate may be due *to carcinoma*. *to inflammation*, or *to abscess* formation. As other impediments to the outflow of urine from the bladder we may mention cicatricial *strictures of the urethra* due to gonorrhoea or to trauma, impacted *stones of the urethra*, *bladder stone*, *pedunculated bladder tumours* lying in the vicinity of the internal vesical orifice and *phimosis*.

Compression of the urethra from without, may likewise cause an impediment to the outflow of urine. Thus in the female tumours located in the uterus or in the broad ligament may compress the urethra. Displacements of the uterus may cause deviations of the urethra, and during labor the head of the child may cause compression.

II. In the absence of a mechanical impediment retention may develop due to *dynamic causes* such as

1. *Diseases of the central nervous system*, and
2. *Disturbances of innervation*.

1. Among the former we may mention the brain tumours, apoplexy, meningitis, tabes, myelitis of the spinal cord, multiple sclerosis and injuries of the spinal cord ; among the diseases of the peripheral nervous system, the neuritis caused by arsenic, mercury, phosphorus, alcohol, lead, and the infectious diseases such as typhus, dysentery, tetanus, and sepsis. In these cases the muscle sense is absent and so the patient feels no desire to urinate.

2. Among the disturbances of innervation the commonest example is the everyday observation that certain individuals cannot discharge their urine in the presence of others. This is due to the inability to coordinate the contraction of the