

Clinical Surgery

GENITO-URINARY SYSTEM

CONSULTANT EDITOR

J.D.FERGUSON

CLINICAL SURGERY—6

GENITO-URINARY SYSTEM

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CLINICAL SURGERY

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PREFACE

This volume provides a review of the clinical aspects of genito-urinary disease supported by a brief outline of the measures appropriate to its diagnosis and management. Since much of the urinary tract is deeply positioned and relatively inaccessible it is scarcely surprising that supplementary methods of investigation are frequently called for and, indeed, are accepted as an essential counterpart to clinical assessment. No excuse, therefore, is needed for a short introductory section which embraces the basic principles of laboratory, radiological and instrumental examination.

The arrangement of the rest of the volume follows the traditional pattern in dealing with the various conditions according to their major anatomical distribution. In recent years, however, the earlier emphasis on regional pathology has given way to a wider concept of the functional aspect of the tract as a whole and the requisite standards of investigation and treatment have thus become correspondingly altered. Where possible, therefore, the clinical descriptions follow this trend by referring not only to the local features but also to any associated disability affecting the remainder of the genito-urinary symptom or the overall status of the patient. In this respect special sections have been introduced on renal failure and uraemia, disturbances of bladder function and urinary diversion, and on sexual dysfunction including impotence and sterility, while in the case of more generalized forms of disease it is expected that further reference will be made to other volumes in this series.

All the contributors are British and each has been chosen for his special knowledge and first-hand experience of the subject concerned. It is hoped that the close harmony which prevails among all those practising the speciality in Great Britain will be found reflected in the text.

January, 1965

J. D. FERGUSSON

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URINARY DISEASE

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CHAPTER 1

SYMPTOMATOLOGY AND CLINICAL EXAMINATION

J. P. MITCHELL

Symptoms and signs in urological patients can be so similar from one to the other that every detail in the history is essential, and it is advisable to have a system of questioning so that no possible observations are omitted. Those of main importance are (*a*) pain, (*b*) haematuria, and (*c*) disturbances of micturition, and it is largely with variations in their quality and interrelationship that the clinician is chiefly concerned.

PAIN

RENAL AND URETERIC PAIN

The angle made by the twelfth rib and the erector spinae muscle is known as the renal angle, and it is to this point that pain from the kidney is referred. It may vary from the dull ache of pyelonephritis to the severe colic of a stone impacted in the pelvi-ureteric junction. This pain will often radiate laterally to the flank or even round to the subcostal area anteriorly, but only when the ureter is also involved such as in the passage of a stone will the pain radiate to the right iliac fossa and even to the testicle or the labia. Severe renal colic will cause the patient to double up in agony and is often associated with vomiting and shock.

Pain from the bladder is localized to the suprapubic area, and gradually increases as the bladder distends. At the end of micturition the mucosal lining of the bladder comes into contact with its opposite wall and if inflamed it may produce a cramp-like pain suprapubically and deep in the pelvis. The pain of cystitis is often associated with the pain of urethritis as the two conditions occur together. The severe burning pain with micturition or the sensation of "passing broken glass" is due to urethritis. Strangury is the sudden involuntary arrest of micturition, which results from the extreme pain as the urine passes down the urethra.

Occasionally patients will describe pain at the tip of the penis when there is no obvious external inflammation of the meatus. This may be due to some object in contact with the trigone of the bladder, such as a vesical calculus or the tip of an indwelling urethral catheter.

Pain from the prostate gland can be difficult for the patient to localize. It may be described as arising in the urethra or at other times in the rectum, while the occurrence of low backache is not uncommon.

HAEMATURIA

Whatever the age of the patient, haematuria requires full investigation. First other colouring agents must be excluded, as from certain drugs (for

SYMPTOMATOLOGY AND CLINICAL EXAMINATION

example Dindevan) and foodstuffs (beetroot, and so on); and secondly, the presence of free haemoglobin must be distinguished from red blood corpuscles in the urine.

PAINFUL OR PAINLESS HAEMATURIA

The occurrence of haematuria without pain is ominous at all ages. In the older patient it is suggestive of neoplasm somewhere in the urinary tract, while in the younger patient either nephritis or urinary tuberculosis will be suspected until proved otherwise. Painful haematuria will probably be due to infection or stone.

RELATIONSHIP TO THE STREAM

Initial haematuria indicates posterior urethral bleeding, while haematuria equally mixed with the whole urinary stream suggests that the bleeding is arising from the bladder or the upper urinary tract. The source of terminal haematuria is, on the other hand, not so obvious. Invariably it is found to be arising from a lesion somewhere in the region of the bladder neck, and presumably occurs as a result of contraction of the bladder at the end of micturition.

CLOTS

The severity of the haematuria can be assessed on the depth of colouring of the urine and the presence of clots. Patients can best describe haematuria in terms of a "vin rosé" or a "port wine" colour. As the bright red haematuria fades to a dark brown, so it indicates that the blood is no longer fresh and that the source of bleeding is stopping. The appearance of the clots can vary considerably from the bright-red jelly of a fresh clot to brown or even black particles, sometimes described by patients as looking like pieces of liver or tea leaves.

The passage of a clot down the urethra can be painful but the actual pain of passing the clot should be distinguished from the pain of the lesion causing the bleeding. In other words, if pain is only arising from the passage of the clot itself, the diagnosis should still be focused on the causes of painless haematuria.

DISTURBANCES OF MICTURITION

FREQUENCY AND URGENCY

The commonest symptom in urology is frequency of micturition. This may be the nocturnal frequency of the man with benign prostatic hypertrophy who is disturbed so often at night that he loses sleep, or it may be the intense diurnal frequency of the female with cystitis and urethritis who finds that once she falls asleep in bed she is no longer disturbed. The degree of frequency that worries the patient will to some extent depend upon his occupation. For example, the man who often has to attend committee meetings will find a frequency of less than 2 hours by day is a considerable embarrassment, whereas the gardener, who has somewhere near at hand to pass urine probably does not even notice he is having to empty his bladder every hour. Urgency of micturition is usually associated with frequency, and if the sensation cannot be accommodated incontinence may supervene.

DISTURBANCES OF MICTURITION

STREAM

The patient with a stricture will often say that by contracting his abdominal muscles he can produce a thin projectile stream, whereas the patient with prostatic hypertrophy cannot produce any increase in the flow by straining and has to stand and wait for his bladder to empty. Sometimes the hesitancy in starting may be several minutes, particularly when the patient is disturbed in the middle of the night.

Occasionally the patient who has an adequate stream but pain on passing his water will state that he has difficulty. It is therefore important to analyse exactly what is meant by difficulty with micturition. The term dysuria can be misleading, as the prefix "dys-" indicates to some clinicians pain with micturition, while to others it means difficulty.

If the patient complains of a forked or split stream, a stricture of the urethra near the external urinary meatus may be suspected.

The patient in acute urinary retention will be in considerable distress. Whereas if there has been a large amount of residual urine for some weeks prior to the acute retention, then the bladder wall will be less sensitive and the pain from the acutely distended bladder will be correspondingly diminished. The assessment of the degree of distress that the acute retention causes is therefore a clear indication of the extent of chronic retention preceding the episode of acute retention (acute on chronic retention).

INCONTINENCE

True incontinence

True incontinence is a state where all urine flowing into the bladder immediately dribbles away; in other words, the bladder is unable to retain any urine at all. This is an uncommon condition and is due either to an extremely inflamed bladder with reduced capacity, or to certain neurological conditions involving the lower urinary tract.

Overflow incontinence

Overflow incontinence is the final stage of chronic urinary retention. In any male patient complaining of persistent dribbling incontinence, chronic urinary retention should be suspected until the bladder is proved clinically empty. The patient may be quite unaware of the distension of the bladder. He may appear to pass urine normally without excessive frequency, and yet on examination a painlessly distended bladder may be found.

Stress incontinence

Stress incontinence occurs in women where the support of the pelvic floor has been weakened (usually through childbirth) and any increase in intra-abdominal pressure, such as occurs during laughing, sneezing or making any sudden movement, is liable to result in the escape of some urine.

Enuresis

Enuresis denotes involuntary micturition during sleep and is a remarkably common symptom of all ages. Occurring in children under the age of 6 years with sterile urine it is seldom worthy of further investigation unless there are other urinary symptoms. From the age of 6-9 years, pathology may be found in approximately 5 per cent of enuretic children, but thereafter, this propor-

SYMPTOMATOLOGY AND CLINICAL EXAMINATION

tion rises until after puberty when nearly all young adults with enuresis will be found to have some organic cause for their bed-wetting.

Terminal incontinence

Terminal incontinence is a very common complaint in middle-aged men. Although occasionally it is an indication of some obstruction to the urinary flow, in a majority it proves to be nothing more than a failure of the bulbous urethra to empty completely at the end of micturition. If this fact is explained to the patient and he is told how to compress the bulbous urethra with a finger on the perineum after he has completed micturition, the remaining drops can usually be ejected.

PNEUMATURIA

The passage of bubbles of gas with the urine during micturition suggests the possibility of a fistula between the bladder and the bowel such as may occur in the more advanced stage of diverticulitis or carcinoma of the colon. Air left in the bladder after cystoscopy can also produce this symptom. Rarely pneumaturia can occur in a diabetic whose urine is infected with a sugar-fermenting organism.

CLINICAL EXAMINATION

GENERAL ASSESSMENT

In view of the age of many urological patients a general assessment is important, particularly if surgery is envisaged. Fitness for operation is an almost impossible state to define. So often the patient with apparently poor cardiac reserve or chronic bronchitis in whom trouble has been anticipated pre-operatively, survives surgery uneventfully. Nevertheless pre-operative examination in these respects is essential.

THE ABDOMEN

In most patients the lower pole of both kidneys is palpable in the loin, but in those with well-developed abdominal muscles neither kidney may be palpable. To palpate the left kidney, the examiner passes his left hand underneath the small of the patient's back, so that the patient is lying on the examiner's forearm. He can then palpate bimanually with the right hand over the subcostal region anteriorly. Only when the kidney is 2 or 3 times its normal size will enlargement be distinguished on clinical examination. As the size of the kidney increases, so it will be felt, first in the loin, then extending more laterally into the flank, and finally downwards to the iliac fossa. If the perirenal tissues are involved, some swelling may be visible in the loin and if the cause of the perirenal swelling is a haematoma, then there may be ecchymosis of the skin of the loin. The physical signs of an enlarged kidney are those of a retroperitoneal mass, but it can be pushed forward from the loin and will move with respiration as long as the perirenal fat is healthy. The "band of resonance" ascribed to the colon is of little value as a physical sign because enlargement of the kidney will push the colon downwards and medially.

A hydronephrosis will be felt as a mass in the loin only if it is tense. Quite often a hydronephrosis consists of a flaccid enlargement of the renal pelvis, in which case it may not be palpable and the examiner will only be conscious of a fullness in the loin.

CLINICAL EXAMINATION

In chronic retention of urine the bladder is painless, even though it may be grossly distended. Sometimes the intravesical tension is as little as 5–10 cm. of water pressure, and the distended bladder may not be palpable, in which case it can only be recognized by a constant area of dullness suprapubically. Provided the bladder wall is not so stretched that its sensation is completely lost, gentle pressure on the lower abdomen will usually induce a desire to micturate.

THE EXTERNAL GENITALIA

The meatus is examined for any stenosis, at the same time massaging the urethra towards the meatus to see if any discharge can be expressed. The prepuce is retracted to inspect the glans. The whole length of the anterior urethra can be palpated and induration associated with a stricture of the urethra or fibrosis of the corpora cavernosa (Peyronie's disease) may be detected. The scrotum is then examined to check the descent of both testes and the presence of both vasa. Any swelling of the scrotum is examined with reference to its relationship to the normal scrotal contents. The scrotal mass may be attached to the testis or entering the scrotum from above, such as a hernia. Transillumination will distinguish a hydrocele or a spermatocele from a solid mass, unless the wall is so thick that the light will not penetrate it. Loss of normal testicular sensation will suggest possible neoplasia.

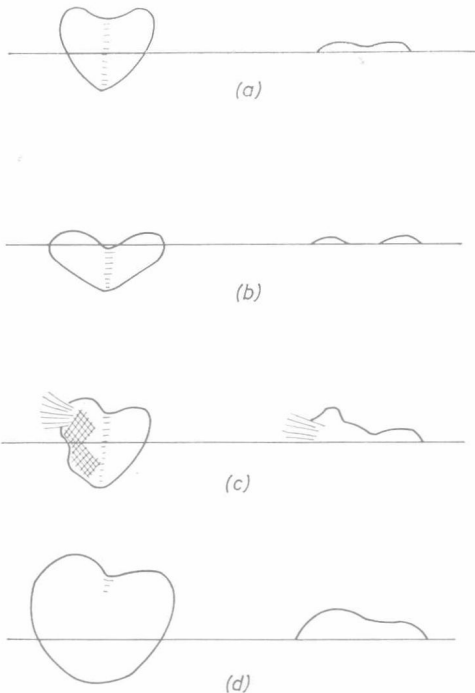


Figure 1.—Diagram representing the prostate gland on rectal examination. (a) and (b) show two varieties of a normal prostate, (c) represents a carcinoma involving the left lobe of the prostate with invasion of the left lateral sulcus, and (d) shows a benign hypertrophy of the prostate gland.

RECTAL EXAMINATION

Rectal examination of the prostate (see *Figure 1*) can be carried out with the patient either in the left lateral, or in the knee–elbow position. In the left

SYMPTOMATOLOGY AND CLINICAL EXAMINATION

lateral position, the examiner has to rotate his hand so that the pulp of his finger comes into contact with the posterior surface of the prostate, which means that he probably has to kneel beside the bed. On the other hand, a thorough examination of the rectum can be made before rotating the finger onto the prostate. In the knee-elbow position, the examiner has the advantage of being able to stand for the examination and can assess the equality of the two lobes of the prostate much more easily. Occasionally the right lateral position is used, with the patient facing the examiner. This has the advantage that the examiner does not have to rotate his hand, but a thorough examination of the rectum is not possible from this position.

The prostate is assessed as to size and consistency, with particular reference to any areas of induration indicating neoplasia or possible localized inflammation. The depression between the two lobes (the median raphe) is palpated, and the finger is then passed up the sulcus on each side between the lateral lobe of the prostate and the lateral wall of the pelvis. In carcinoma of the prostate this lateral sulcus may be obliterated by extension of the growth laterally, causing some fixation of the gland, which can normally be moved by the palpating finger, or if the patient strains as on coughing. Fixation of the mucosa of the rectum is only found in advanced cases.