CLOSED RENAL TUBERCULOSIS

WITH SPECIAL REFERENCE TO THE POSSIBILITY OF HEALING IN THIS DISEASE

BY

A. L. D'ABREU, M.B., CH.B., F.R.C.S.
SURGICAL REGISTRAR, GENERAL HOSPITAL, BIRMINGHAM
(With Special Plate)

The possibility of spontaneous healing in renal tuberculosis must arouse great theoretical interest. Where bilateral renal involvement is diagnosed its possible occurrence would influence prognosis and stimulate the adoption of thorough treatment. It is stated that no case of healed renal tuberculosis of the chronic ulcerative type has yet been noted in the post-mortem room (Boyd),¹ and with this in mind no surgeon would ever employ treatment other than nephrectomy in the attempt to cure unilateral renal tuberculosis, uncomplicated by other factors contra-indicating operation. The healing of artificially produced renal tuberculosis has been observed experimentally,² but there is little literature on the subject by clinicians. The following case is reported as a slight contribution to the subject. There is no pretence to offer a case of healed disease, though it certainly appears to have been arrested. The intensity of the reaction to the disease, the extremely localized nature of the process, and the length of history are features that appear to make the case worthy of record.

CASE HISTORY

An engineer, aged 55, was admitted to the General Hospital, Birmingham, on May 26th, 1932, complaining of frequency of micturition associated with a little scalding pain. There had been two attacks of haematuria in the three weeks previous to admission. The other symptoms were of eleven months' duration. An inquiry into his past history revealed that eight years previously he suffered from an attack of haematuria, which lasted several days, being accompanied by no other symptoms. After that no obvious bleeding occurred until the recent attacks during the three weeks preceding his admission to hospital. His family history was of no importance, and there was no tuberculous disease known.

Examination

The patient appeared to be healthy and of average size and muscular development. He was apyrexial, and the only physical sign observed was some tenderness on palpating the right loin. Urine: specific gravity, 1016; reaction, acid. A cloud of albumin was present, and pus and red blood corpuscles were seen on microscopical examination. No fragments of growth or organisms were detected. Staphylococci were obtained on culture. X-ray examination revealed stones in the upper pole of the right kidney. An interesting finding was that Paget's disease existed in the pelvic bones. No abnormality of the bladder was seen on cystoscopy. Unfortunately accidental bleeding prevented ureteral catheterization. Intravenous pyelography was done with uroselectan B. The left kidney was normal, but the right one showed defective filling of the upper part of the pelvis in addition to shadows in the upper renal pole. The urea concentration test revealed a slight impairment of renal function. The blood urea was 60 mg. per 100 c.cm. The pre-operative diagnosis was "renal calculi."

Operation

On June 6th, 1932, the right kidney was explored by the lumbar route. The lower three-quarters of the organ appeared to be normal. The perirenal fat was firmly adherent to the upper quarter of the kidney. On stripping this off, the renal tissue in this area appeared to be shrunken, and contained several hard nodules. This area was sharply demarcated from the normal kidney substance below by a definite moat-like depression, which suggested that a partial auto-nephrectomy had been executed by a fibrotic process. An exact diagnosis was not obvious, and, a tuberculous process being suggested, nephrectomy was performed, the left kidney being assumed to be normal on the evidence of the pyelographic examination.

The post-operative convalescence was uneventful, and the patient was discharged three weeks later with the wound soundly healed.

Morbid Anatomy

The kidney is represented in photographs (see Special Plate, Figs. 1 and 2) showing the appearances on anterior and cut-surface views. The specimen measures $3\frac{1}{2}$ inches by 2 inches. The upper quarter of the organ is sharply differentiated from the lower three-quarters by a line of demarcation in the form of a definite circular depression. The former portion consists of completely disorganized renal tissue with an irregular bossy outline, contrasting markedly with the smooth normal appearance of the somewhat lobulated lower three-quarters. The first impression suggests a diseased suprarenal body resting upon a normal kidney. This faulty conception is at once corrected by a glance at the cut surface (Fig. 2). Here a portion of the upper pole is destroyed and distorted by a chronic fibrotic mass, embedded in which are several small calculi standing out as dark areas. These contrast well with two points of caseation in the periphery of the affected area. The fibrotic area is sharply delineated from tissue below, which retains the normal renal architecture. The upper calix of the pelvis, around which is a notable deposition of fat, has been destroyed by fibrosis, and provides the pathological basis for the distorted pyelographic appearance. The remainder of the pelvis shows no dilatation. The gross appearance suggests some chronic pyelitis, and the ureter exhibits only a little thickening of its wall, with slight accompanying fibrosis, very different from the condition usually seen in renal tuberculosis of long duration. A microscopical examination of tissues from the diseased area reveals giant cells of the tuberculous type, and the general picture confirms the macroscopic diagnosis of tuberculosis.

COMMENTS

The patient gave a history of renal disease, which commenced at least eight years before the nephrectomy. The first symptom was haematuria. Was this due to a renal calculus or was it the first sign of tuberculous disease? The fact that the bleeding occurred without other symptoms such as pain is strong presumptive evidence in favour of a tuberculous rather than a calculous cause at that time. This view would point to the calculi being secondary to the tuberculous disease rather than to the assumption that a tuberculous process had developed in a kidney damaged by stone. Calcareous material is frequently noted in renal tuberculosis.³ The length of time, eight years, during which tuberculosis existed in this kidney without marked advancement is remarkable. Thomson-Walker speaks with surprise of a case in which he observed haematuria as long ago as two years before the onset of any other symptoms.³ The resistance of the kidney to the disease is demonstrated by the macroscopic appearances, by the mildness of the symptoms, by the absence of tubercle bacilli in the urine, and by the remarkable freedom of the ureter and bladder from obvious involvement. These factors led to the incorrect pre-operative diagnosis. While there can be no doubt that nephrectomy was the only treatment to be considered, the kidney reveals a remarkable degree of healing. It is conceivable that in rare cases complete healing, as a result of sequestration of the caseous areas by a ring of fibrous tissue, might occur. It is to be noted, however, that in the case described the development of symptoms after many years' quiescence suggests an advance rather than a retrogression of morbidity.

It remains to classify this specimen according to the usual grouping adopted in this country. Four types are considered.

1. Miliary tuberculosis, in which the generalized nature of the disease excludes surgical interest.
2. Ulcero-cavernous tuberculosis, which commences in the pelvis and extends outwards.
3. Caseous or massive tuberculosis, which is an advanced form of No. 2.
4. Tuberculous hydronephrosis.

The two latter are considered by some authorities to constitute "closed" tuberculosis, but the term does not appear to be quite accurate, as the pelvis is so extensively involved. It is difficult to place this particular specimen in the groups mentioned. If placed in Group 3 almost complete destruction of the whole kidney would be implied, and this is far from being the case. Such a specimen might be rightly considered as one of "closed renal tuberculosis," and be placed accordingly in a final and fifth group under that heading. The term "closed" could then be considered inadmissible in cases falling into Groups 3 and 4.

I am greatly indebted to Professor Seymour Barling for permission to publish this case and for his advice and help.

REFERENCES

- ¹ Boyd, William: *Surgical Pathology*, second edition, 1931, p. 477.
² Mediar and Sasano: Experimental Renal Tuberculosis, with Special Reference to Excretory Bacilluria, *Amer. Rev. of Tuberculosis*, 1924, p. 370.
³ Thomson-Walker: *Surgical Diseases and Injuries of the Genito-Urinary Organs*, 1914.

NEW GROWTHS OF THE KIDNEY*

WITH ANALYSIS OF SIXTY-FIVE CASES

BY

R. H. JOCELYN SWAN, O.B.E., M.S., F.R.C.S.

SENIOR SURGEON TO THE CANCER HOSPITAL; CONSULTING SURGEON,
ST. PAUL'S HOSPITAL

(With Special Plate)

The following survey is entirely limited to new growths occurring primarily in the kidney, and excludes all those renal enlargements due to hydronephrosis, calculus, or cystic disease. I have collected all my private and hospital cases, and, for the purpose of arriving at some statistical figures, have added some notes of specimens of renal tumours from the pathological museums of the Cancer Hospital and St. Paul's Hospital. I would like to thank my colleagues for their permission to make use of these cases. In this way I have fairly complete clinical and pathological records of sixty-five cases from which to draw my conclusions.

The subject of new growths in the kidney presents many features of great interest—interest to the pathologist, clinician, and surgeon alike. Pathologists have for several years expressed many and varied opinions as to the origin and the true nature of these tumours, and even at the present time no definite conclusion has been arrived at. The clinician has improved his methods of examination in so marked a degree that he is able to demonstrate almost with certainty whether a renal growth is present or not.

CLASSIFICATION AND PATHOLOGY

With the uncertainty that exists as to the true pathology of renal tumours it is somewhat difficult to attempt any exact classification, but for clinical purposes the following will cover all forms of growth:

RENAL TISSUE	Innocent	Adenoma Fibroma Lipoma Angioma
	Malignant	Carcinoma—Papillary adenocarcinoma Alveolar adenocarcinoma Hypernephroma Sarcoma, including embryonic tumours
RENAL PELVIS	Innocent	Papilloma
	Malignant	Villous carcinoma Squamous epithelioma

* A clinical lecture delivered before the Fellowship of Medicine on November 24th, 1932.

The benign tumours of the renal parenchyma can be dismissed in a few words. They are usually found in post-mortem examinations, and very rarely give rise to any clinical symptoms. Adenomata are found as small rounded nodules, especially in a kidney affected with interstitial nephritis, and are of some interest in that they may form a focus in which carcinoma is likely to arise. Small fibromata and lipomata have been found in the kidney, and I have described a case of cavernous angioma of the kidney which gave rise to such profuse haematuria as to necessitate nephrectomy as a life-saving measure. Only about twelve similar cases have been recorded.

The Neoplasms

It is the malignant new growths of the renal tissue that have caused so much discussion as to their true pathology. At one time they were variously classified as sarcoma and carcinoma, and the first great interest was kindled when, in 1883, Grawitz² published his paper describing these tumours as arising from "adrenal rests." The latter are small subcapsular islets of suprarenal tissue left in immediate conjunction with the renal cortex in the process of development. Grawitz based his opinion on the similarity of these cells to those of the suprarenal cortex—particularly in that they both contain fat and highly refractile particles—on the fact that the cells are quite unlike those of the normal renal tubule, and that the growths are found beneath the renal capsule, a place where adrenal rests are found. He also made a point of the occurrence of a fibrous core in the central part of the tumour, from which pass septa dividing the tumour into lobules. In 1893 Sudek³ described these Grawitzian growths as actually arising from the renal tubules, and in 1908 Stoerk⁴ showed that the tumours had a papillary basis, an opinion which was upheld by Wright⁵ in 1922, after a very critical examination of nineteen specimens of renal growths, most of which were removed from patients under my care in the Cancer Hospital. Doubt has been expressed by some as to whether aberrant suprarenal rests do actually occur under the renal capsule, but Shaw Dunn⁶ and Ewing⁷ definitely state that they do exist. Arguments have been put forward from the embryological side that these adrenal rests may originate from the remains of the Wolffian ridge, from which the testes and ovaries are developed, and in which organs somewhat similar tumours have been rarely recorded. These tumours, however, differ from renal tumours in that they contain no fat and no haemorrhagic or necrotic areas, while they further possess a uniform structure. Though I cannot attempt to discuss the histogenesis of these tumours, there exists a very interesting specimen, which to my mind throws a good deal of light on the origin of them. This specimen was found in the kidney of a man aged 75 who died in the Cancer Hospital from advanced epithelioma of the tongue. He had no symptom referable to the urinary organs, but on post-mortem examination a small, rounded, yellowish tumour about 1½ cm. in diameter was found wholly embedded in the renal tissues. It was separated from the capsule of the kidney by a covering of normal renal substance quite 1 cm. in thickness, and thus could not possibly have originated from a subcapsular adrenal rest. In cross-section the growth is lobulated, necrotic in the centre, shows some small areas of haemorrhage, and is surrounded by a thin capsule. Histologically the structure is typical of a hypernephroma with large vacuolated cells.

Ewing, in his last work on *Neoplastic Diseases*, gives his opinion that these tumours arise in the renal epithelium, and divides them into papillary and alveolar adenocarcinoma, reserving the term "hypernephroma" for the rare tumours arising from adrenal rests. This division

V. B. GREEN-ARMYTAGE AND S. K. DATTA: ENDOMETRIOMATA

FIG. 5.—*Endometriosis of the uterus.* Section shows scattered areas of cellular connective tissue with tubular glands embedded in them (resembling endometrial tissue), surrounded by muscle bundles.

FIG. 6.—*Endometriosis of transverse colon.* Section shows a cystic space at top of figure, lined by low columnar epithelium. In the fibrous wall of the cyst are seen islets of endometrial glands with typical stroma cells.

A. L. D'ABREU: CLOSED RENAL TUBERCULOSIS

FIG. 1.—External appearance of the removed kidney.

FIG. 2.—Cut surface of the removed kidney.