

spreads rapidly on the mucous surface, and early infiltrates the surrounding cellular tissue. Logically, they conclude that supravaginal amputation is indicated in cancer of the body and in cancer of the vaginal portion, in the former by laparotomy, and in the latter by the vagina, reserving total extirpation only for cancer of the cervix, when they say the involvement is too extensive to be otherwise removed, adding, however, that should the mortality of total extirpation diminish, so as to be less than that of partial extirpation, it would be, of course, indicated in preference to partial extirpation in all varieties of uterine cancer.

RÉSUMÉ.—1. The results of kolpohysterectomy for cancer have progressively improved with increase of the number of operations.

2. The total number of operations done up to the present time is approximately 341, with a total mortality of 27 per cent. 222 cases were treated with the open peritoneal wound, with a mortality of 22 per cent. Of the 222, 93 had the supravaginal wound covered by peritoneum, with a mortality of 18 per cent.; and of the 93, 50 were operated upon during the past three years, with a mortality of 10 per cent.

3. Of 97 cases which survived operations done previous to 1883, 18, or 20 per cent., are known to have been well at the end of eighteen months or two years.

4. The latest results of kolpohysterectomy for cancer contrast not unfavorably with those of the total extirpation of other organs for malignant disease.

5. The tendency of medical literature is to regard kolpohysterectomy for cancer as a legitimate operation, subject only to the restrictions common to other extirpations for malignant disease.

In concluding, I desire to express my indebtedness to the New York Hospital Society and to the New York Academy of Medicine, for the use of their libraries in the preparation of this paper; also to Dr. P. F. Mundé, who kindly placed his library at my disposal.

PRIMARY SARCOMA OF THE RIGHT KIDNEY.¹

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INDEPENDENTLY of its rarity, the following case possesses some features of interest which appear to be deserving of record:

John D., aged fifty-three years, a brass finisher, was admitted under my care into Sir Patrick Dun's Hospital, October 25, 1884.

¹ Read before the Medical Section of the Academy of Medicine in Ireland, 1885.

His family history was good, and he was not aware of any of his relatives having had "tumour." He escaped syphilis, and had never previously been seriously ill, although up to two years ago he was of intemperate habits, and drank freely of porter. He never suffered from jaundice, but twenty years ago a doctor told him that his liver was getting hard from drink. To the best of his belief he was in perfect health up to about two years ago, when, shortly after his return from America, he perceived a slight pain in the right side below the ribs. This gradually became worse, and some months later he noticed a swelling in the right side. Still he was able to persevere in his employment, which was somewhat laborious, but a month before admission his appetite failed and he gave up work. When in good health he weighed eleven stone, and, although he cannot fix his present weight, is certain that he has lost much flesh, especially within the last six weeks.

Some seven or eight years ago he states that he passed bloody(?) urine, attended with some pain and difficulty. Nothing of the kind recurred until seven or eight months ago, when, without apparent cause, he passed, with pain and difficulty, a "very dark fluid" from the urethra.

The man's aspect is haggard and worn, and he is in low spirits about himself. Physical examination yielded the following results:

Thorax.—Heart's sounds normal, rather feeble. Pulse 72. Respiratory sounds quite healthy: complains of some pain between the shoulders.

FIG. 1.

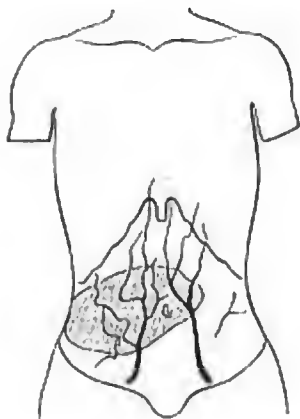


FIG. 2.



Appearance of the varicose surface.

Abdomen.—Skin white, and, on either side, especially the right, is a network of enlarged veins stretching up to the axilla, and also visible posteriorly. There was no evidence of fluid in the abdomen, but a large

swelling projected on the right side, extending from the ribs to within two inches of the ilium, and laterally about two inches to the left of the umbilicus.

The tumor was firm in consistence, with a well-defined and rounded edge, and the swelling could be felt behind in the lumbar region, but could not be moved from side to side, nor did it follow the motions of the diaphragm.

That the tumor was not connected with the liver was shown by the ease with which the fingers could be pressed into the groove which existed between it and the ribs. No pulsation nor sound could be detected, and after repeated examinations it was impossible to make out any zone of clearness in front.

The tumor, which was diagnosed as a malignant renal swelling, was uniformly dull to percussion, and it was concluded that no portion of the intestine lay in front of the tumor, this striking exception to the general rule being surmised to be due to the intestine having contracted adhesion to the lower edge of the tumor in an early stage of its growth.

The hepatic dulness was not markedly increased upward, and there was no enlargement of the inguinal or other glands. The testes were unaffected.¹

His appetite was fairly good; he had vomited frequently before admission, but only once since. The bowels were very costive, and the skin dry.

Neither at the time of his admission nor at any subsequent time was there the least appearance of oedema of the legs or feet. Pain was seldom complained of during his stay in hospital, and the tumor could always be freely handled without causing him distress.

The urine presented some characters of interest. It was usually bright and clear, very acid, sp. gr. about 1.012. It frequently deposited stringy and flaky masses, and the microscope showed numerous mucous corpuscles, and crystals of oxalate of calcium, and sometimes transparent tube-casts, of fair size, and occasionally spiral in form.

Albumen was constantly present in considerable quantity, to about one-sixth. When the clear urine was acidified with a few drops of acetic acid (or solution of tartaric acid, etc.) no immediate change occurred, but after a few seconds cloudy streaks appeared, and the opalescence gradually increased and spread through the fluid until the whole became semiopaque. This opalescence was not cleared away by a gentle heat, and was readily produced even when the urine was previously diluted to two or three volumes. It may be inferred, therefore, that the opalescence was due to the precipitation of a body of the mucin class. When the urine was simply diluted to three or four times its bulk, and allowed to stand, it became milky (globulin?).

No color change with ferric chloride. Tested for indigo substances with strong hydrochloric acid and chloride of lime, it became opaque and of a deep slate-violet color. Floated on cold hydrochloric acid, the latter assumed a violet color which was extracted by chloroform. Boiled with hydrochloric acid it became dark red. It has been already mentioned that the urine was liable to contain flaky shreds, but on December 13th, after slight difficulty in micturition and momentary obstruction,

¹ Niemeyer calls attention to the frequency with which cancer of the kidney is complicated with cancer of the testis, reminding us of the still more common coincidence of tubercles of these organs.

he passed a curious looking mass *per urethram*. It consisted of a filiform piece about three inches in length, terminating in a cluster of sacciform tassels. It was mostly white, but in part reddish; and was very elastic. On subsequent occasions he passed numerous other bodies of the same general character, which I preserved in spirit, but during the last few weeks of his life none were seen.

Toward the end of December the tumor had enlarged in every direction, became more prominent in front, and the cutaneous veins more distinct, especially posteriorly. Beyond the latter sign, however, there was no evidence of interference with the abdominal circulation, and the emaciated limbs were quite free from oedema. The bowels did not move except by enema; but, strangely enough, this obstinate constipation yielded after a time, and toward the end of his life the bowels acted naturally.

During the months of January, February, and March, his general condition changed but little, except that he gradually wasted to an extreme degree, his appetite slowly failed, his strength ebbed away, and he died quietly at 10 p. m., on April 14th.

The *post-mortem* examination was made twelve hours after death.

Scarcely a trace of subcutaneous fat was visible. Upon opening the abdomen, not more than an ounce or two of fluid was seen lying in the pelvis, and there were no traces of peritonitis, except a few old fleshy adhesions. Before the position of the viscera was disturbed, it was observed that *no part of the intestines lay in front of the tumor*. The colon was closely adherent to its lower edge. The liver was not displaced or twisted on its axis, an occurrence which has been often observed in other cases of renal tumor on the right side. A large vein crossed the tumor toward the left side, passing from beneath the liver to the great omentum, and a close network of veins was visible on and beneath the loose fibrous capsula which covered the tumor. In some places these veins were continuous with those of the abdominal walls. The hemorrhoidal veins were engorged. The vena cava as it passed under the liver was distended by a large laminated thrombus terminating superiorly in a blunt cone. The right renal vein was likewise occupied by a soft thrombus; the left renal vein was small and free from clot. The large intestine was contracted; the small intestines grayish colored. Mesenteric glands dark, nearly black, and very slightly enlarged.

The spleen was swollen and very soft on section. No infarcts. Liver increased in size, firm, and yielded amyloid reaction with iodine. Anterior surface of its capsule marked with fibrous reticulations.

Left kidney amyloid, scarcely enlarged. Double ureter on left side. There was no calculus in either kidney.

Bladder healthy; contained a soft quadrangular mass similar to what had been passed with the urine during life.

The thoracic viscera exhibited nothing noteworthy, with one exception. The heart was very small, the lungs were free from any secondary disease, but behind the trachea and between the bronchi was a group of lymphatic glands, enlarged, matted together, and infiltrated with white masses resembling malignant deposits. Subsequent microscopic examination showed that the gland tissue was simply in a state of caseous degeneration. Hence it may be said that there was no metastasis or secondary involvement of distant parts.

Right kidney was entirely converted into a mass of new growth. It

weighed nearly four pounds. The tumor was enveloped in a sort of loose capsulo of connective tissue, but was readily separated from adjacent parts. The ureters were not eroded.

The ureter was pervious, not dilated. The pelvis of the kidney was occupied by a firm fibrinous plug, which fitted closely and tapered down into the ureter. It was white or yellowish, elastic, and exactly resembled in appearance the clots passed *per urethram*, and when hardened and examined microscopically possessed the characters of a blood-clot.

The right suprarenal capsule was loosely attached to the summit of the tumor, and upon section exhibited a nodule or two of whitish, cheesy material. The renal tumor was divided in its length, and the cut sur-

FIG. 3.



Appearance of right kidney.

faces presented a mottled appearance, traversed by intersecting bands of firm fibrous tissue, forming imperfect loculi. The greater part was of a yellowish-white color, but parts were red and stained with blood, and here and there, areas of a yellow gelatinous deposit were to be seen. Portions of the tumor were hardened for microscopical examination, and I am indebted to my friend, Dr. Henry Bewley, for mounting some slides.

The tumor proved to be a spindle-celled sarcoma, and the appearances are fairly exhibited in the accompanying drawings.

FIG. 4.



Appearance of right kidney after incision.

FIG. 5.



Low power.

High power.

Microscopic sections of tumor.

Good illustrations of the macroscopic characters of malignant disease of the kidney are to be found in Rayer, *Traité des Maladies des Reins*, 1837, Pl. xlv. Fig. 1; Pl. xlvi. Fig. 1; and in Pl. xlvii., which depicts a thrombus in the vena cava, as in my case. Cruveilhier, *Anatomie Pathologique*, 1829, 18e Livr., Pl. 4, left kidney; 18e Livr., Pl. 1, right kidney and adrenal.

The foregoing case suggests a few remarks, and, for convenience, I shall arrange them in separate paragraphs.

1. *Rarity.* Malignant disease of the kidney appears to be of rare occurrence. In Ireland only one or two cases are alluded to in the *Transactions of the Pathological Society of Dublin*, and comparatively few are published in the *Transactions of the Pathological Society of London*. In 1877, I exhibited before the Pathological Society a specimen of a large sarcomatous tumor of the left adrenal, removed from an elderly male subject in the dissecting-room. The left kidney and all the other abdominal viscera were normal in structure.

In the Children's Hospital at Prague, Steiner observed but four cases of renal cancer among 100,000 children, although, as is well known, a notable proportion of the cases occur within the first decade of life.

2. *Diagnosis.* In my case little difficulty attended the diagnosis as to the existence of a renal tumor, the shape of which bore out Sir W. Jenner's dictum, that a diseased kidney preserves its rounded form and never acquires a sharp edge. (For a series of instructive outline diagrams of abdominal aspects of renal tumors, cf. Dickinson, *Renal and Urinary Affections*, III., 1885, p. 710.)

But it is well known that the diagnosis is not always so facile, and competent authorities lay down that swellings of the kidney are perhaps more often the subject of errors of diagnosis than those of any other abdominal organ. Two points in especial are deserving of comment in the above case:

(a) The absence of intestine in *front* of the tumor. Great stress is laid, and properly, upon the diagnostic value of the clinical fact that the colon almost invariably lies in front of a renal swelling, and Dickinson remarks that the exceptions are so rare that they have the interest of *lusus naturee*. A case of Dr. Bridges is quoted by Dickinson (p. 717), in which a malignant tumor of large size of the right kidney grew in such a way that it entirely excluded the colon from any contact with the front of the tumor. The exceptions, when they occur, are more likely to be met with on the *right* side, because the colon on the right side is not so closely connected with the kidney as on the left. The colon is attached to the posterior abdominal wall higher and more extensively on the left side than on the right (cf. Landou on *Movable Kidney in Women*, New Syd. Sec., 1884). The bowel is never found in front of an enlarged spleen, and suprarenal tumors are not necessarily crossed by bowel.

(b) The numerous fibrinous clots which were passed at intervals for some weeks. These were mostly elongated and decolorized, and some vermiform in shape, evidently moulded in the ureter. According to Dickinson, ureteric casts are infrequent.

It may seem strange that, while these fibrinous clots were repeatedly passing out with the urine, yet no trace of blood was discovered in the urine on more than one occasion when it was looked for. The explanation appears to be this: The conical fibrinous coagulum which plugged the pelvis of the kidney and mouth of the ureter being slowly urged on from behind by the pressure of the increasing new growth, and by accretion of the clot posteriorly, hits the plug were from time to time broken off, and so found their way to the bladder. The plug, like a tight valve, fitted the orifice of the ureter so closely, that nothing could escape past it, and hence the absence of hæmaturia. The non-occurrence, however, of hæmaturia does not count much one way or the other in a diagnostic point of view; for, taking Roberts's, Ebstein's, and Dickinson's statistics, we arrive at the conclusion that, roughly speaking, hæmaturia occurs in scarcely half the cases of malignant renal disease.

It might be asked why did not the kidney dilate, or at least cysts form, if the ureter were completely obstructed, and the reason probably was that, owing to the total destruction of the glandular renal tissue by the invading new growth, no secretion of urine occurred, the left kidney doing the entire work. Judging from the cases on record, it seems to be the exception to find the whole of the kidney tissue replaced by the neoplasm.

3. *Character of the urine.* (a) *Albuminuria.* This was persistent throughout, and varied little in amount. During the patient's lifetime it was inferred, and correctly, that this symptom betokened disease, probably non-cancerous, of the left kidney, which, it will be remembered, was afterward found to be affected with amyloid degeneration. The coincidence of malignant disease on one side, and amyloid degeneration of the other kidney, is noted by Ebstein as of very rare occurrence.

(b) The persistent excretion of a mucin-like substance. The urine, clear and free from viscidities, upon neutralization with any acid, invariably yielded a turbidity, which gradually developed and increased in degree, and was not cleared away by cautiously warming.

4. *The absence of either ascites or œdema* of the legs is noteworthy when we consider the size, position, and weight of the tumor, and the fact of the thrombosis in the vena cava, not to speak of the coexistence of amyloid disease in the other kidney.

5. *Feasibility of operation.* Metastatic deposits are stated to have occurred in seventeen out of forty-one cases collected by Dr. Bertram Windle,¹ and in the light of the post-mortem evidence I regret that the

¹ Primary Sarcoma of the Kidney, *Journal of Anatomy and Physiology*, vol. xviii.

question of surgical interference was not more seriously entertained during the patient's lifetime. From the autopsy it appeared that, considering the nature and attachments of the tumor, the chance of a successful result from operation would not have been inconsiderable. A successful use of nephrectomy for round-cell sarcoma of the right kidney in a boy aged three is reported by Mr. Croft, in the *Lancet* for May 23, 1885; and in the same journal for August 15, 1885, is an unsuccessful case of operation by Mr. Whitehead for sarcoma of the right kidney in a man aged forty-six years. Death from peritonitis ensued on the fourth day. A list of cases in which the operation has been performed is given by Mr. Baker in *Trans. Med.-Chir. Society*, vols. 63 and 64.

6. *Histological nature.* It is curious to note the vagueness and diversity of statement among recent authors upon this point. Thus Roberts (*Urinary and Renal Diseases*, 4th ed., 1885, p. 575): "The species of cancer found in the kidney is almost invariably the encephaloid (fungus hematodes), and scirrhous is very rare in the kidney." Ebstein refers the majority of cases to scirrhous carcinoma; and Wilks and Moxon (1875) state that "carcinoma is the kind of cancer most commonly present in the kidney." They do not allude to sarcoma.

The fact is that scirrhous, though often spoken of, is rare as a renal growth. Malignant tumors of the kidney have been so generally described as cancer that Dickinson (loc. cit.) was much surprised to find, upon examining a number of specimens, that cancer, as structurally defined, was comparatively rare among them. "By far the larger number of malignant renal growths fall within the definition of sarcoma;" and Windle (loc. cit.) remarks that the "definitiveness of sarcoma of the kidney has only been recently recognized."

Of eight tumors catalogued as cancer in the Museum of St. George's Hospital, two of which were specified as scirrhous, six proved to be not cancer, but sarcoma; the term "scirrhous" having been applied in each instance to a hard sarcomatous growth. A profusely cellular, highly malignant, round-celled sarcoma is the most common of all renal growths (Dickinson). But the spindle-celled variety of sarcoma is also known to occur, and the case I now record is a good example of this kind of growth.