

had fallen to 25%, while more recent figures show even better results. Thus Heresco¹ collected 165 nephrectomies for tumour performed since 1890 with only 32 deaths within a month of the operation—a mortality just under 20%; while Israel lost 9 cases out of 43, a mortality of 20.9%. The statistics of individual operators show the same improvement. Morris lost 2 cases, and has since operated 10 times without a death. Tuffier's mortality has fallen from 65% to 5%. Czerny lost 7 of his first 9 cases, and since then has operated 9 times successfully. The late results of this operation have not kept pace with the decrease in operative mortality. Thus of the 89 survivors in Heresco's table, 62 were followed, and of these 22 died of recurrence within three and a half years, 4 of intercurrent disease, while 36 were known to survive from two months to seven years after the operation. Israel records 29 cases operated upon three years before, of whom 7 died as the result of operation or of intercurrent disease. Of the remaining 22, 14 died of recurrence and 8 (36%) remained cured after more than three years, the longest records extending to ten, twelve, and fourteen years. Yet of Morris's 8 cases all died of recurrence except 1, who was well three months after nephrectomy. Until statistics grow larger they will not yield any accurate results. Yet it is obvious that with increasing accuracy of diagnosis operations will in future be performed earlier in the disease, and the successful extirpation of cancerous kidneys will be more frequent.

Contra-indications.—The only absolute contra-indication to operation is extension of the disease along the renal vein, along the lymphatics, or by metastasis of other organs. The opposite kidney can almost always be depended upon, unless there is diabetes (Israel). Chronic myocarditis has been the cause of the majority of the operative deaths. Five of Israel's 8 deaths resulted from heart failure, while 13 of the 39 deaths reported by Heresco were due to the same cause. Other causes of death are embolism, hemorrhage primarily from rupture of the renal vein or the cava, and secondarily from slipping of ligatures or clamps on a diseased vessel.

¹ Thèse de Paris, 1899.

CHAPTER XLIII

IDIOPATHIC RENAL HEMATURIA AND NEPHRALGIA

IDIOPATHIC OR ESSENTIAL RENAL HEMATURIA

WHEN a hemorrhage occurs in the kidneys its outward sign is hematuria. The only condition in which a serious hemorrhage can occur without hematuria is rupture of the kidney, when, as has already been remarked, the blood effused into the lumbar recess or into the perirenal cavity is of far more importance than the relatively small amount that escapes down the ureter. Apart from this condition, renal hemorrhage is expressed by hematuria. The characteristics of renal hematuria have been described in the preceding chapter, for the hematuria that occurs with tumour of the kidney is at once the most important and the most profuse spontaneous hemorrhage from that organ. Bleeding is also a common symptom of renal stone and renal tuberculosis; and when the kidney bleeds, one of these three conditions—stone, tubercle, or tumour—is usually suspected. But there are a great many other diseases, a few of them surgical in their aspects and most of them medical, in which renal hemorrhage—even profuse renal hemorrhage—may occur. To such profuse hemorrhage from an obscure cause has been given the name of essential or idiopathic renal hematuria.

Etiology.—The causes to which this essential renal hematuria has been attributed may be classified as follows:

1. Hematuria, scurvy, purpura.
2. Drug-poisoning (turpentine, cantharides, etc.).
3. Parasites (e. g., distoma, hematobium—Sondern¹).
4. Acute or chronic febrile diseases (scarlet fever, malaria).
5. Surgical diseases (hydronephrosis, renal mobility).
6. The passage of urinary crystals.
7. Angioneurosis.
8. Chronic nephritis.

It is not necessary to consider all these conditions in detail. Distoma, for instance, is practically never heard of in these latitudes.

¹ Medical News, 1897.

Renal hemorrhage caused by drugs or occurring in the course of one of the bleeding diseases has no surgical interest. There remain the hematuria due to surgical causes, that due to angioneurosis, and that due to chronic nephritis. It is possible that any of these three causes may produce a profuse renal hemorrhage. Physical examination of the loins should eliminate hydronephrosis and movable kidney, and there are left for our consideration only angioneurosis and chronic nephritis.

When it was first recognised that an apparently normal kidney might bleed spontaneously and profusely, it was believed that the cause of this hemorrhage was probably some idiopathic dilatation or rupture of the renal capillaries, hence the name of idiopathic or essential renal hematuria was bestowed upon this condition. Without stopping to review the various opinions upon this subject, let it suffice to say that modern investigations have shown that in almost all, if not in all such cases, there is organic disease of the kidney. The disease may be slight, it may be obscure, but some abnormal condition has been found to exist in every case that has been carefully examined in the light of modern pathology.

According to the older theories the bleeding was an angioneurosis, an oozing from the spontaneously dilated renal vessels. According to the theory now generally accepted, the bleeding occurs in a kidney which is chronically inflamed, and is usually a congestion aroused by some form of toxemia. Exceptionally, it is a bleeding from an ulcerated papilla.¹ Thus, the bleeding that occurs in acute nephritis, the bleeding of scurvy and of malaria, the bleeding that sometimes occurs in the course of a chronic nephritis, the bleeding due to drugs, and the idiopathic renal hematuria, are all much the same in origin. Each and every one of them originates in a congestion caused by the endeavour of the kidney to eliminate a poison. If the poison is sufficiently irritant (e. g., cantharides) it may cause the normal kidney to bleed; but in most cases the kidney itself must be diseased before it will react in this way.

Symptoms.—The brief narration of a characteristic case may suffice for a description of the symptoms of this disease:

Mr. C. D., single, aged thirty, has been treated by me for several attacks of non-specific urethritis, terminating in 1872 in a soft stricture at the bulbo-membranous junction, admitting only a No. 13 F. blunt steel sound. After many relapses and irregularities, in

¹ Hurry, Fenwick, has described two successful operations for renal hemorrhage in which nephrotomy disclosed the existence of a bleeding point upon the tip of a papilla. It is possible that these ulcerations were tubercular or malignant.

1880 this was dilated to 27 F., and has remained well. The patient is nervous; the urine overacid, overheavy, and containing oxalate-of-lime crystals in abundance.

August, 1887.—A spontaneous attack of left nephralgia and hematuria lasting eighteen hours.

April, 1890.—Pyuria and hematuria. A little blood in the urine all the time until

July 29.—An attack similar to that of August, 1887. The blood is bright red; the bleeding ceases spontaneously; the pain is not very severe.

September.—Similar attack.

December 18th.—Similar attack. The left kidney is sensitive. Except under orders he has not been confined to bed during any of these attacks.

February, 1891.—An attack of hematuria lasting five weeks, with pain and tenderness in the left kidney. This continues until

March.—Nephrotomy; left kidney exposed. It appears normal; no stone felt. Needling discloses several areas of tissue so dense that a distinct creaking sound is produced by the needle as it passes through them. Bleeding ceased.

The patient has been occasionally seen since the operation, and in the summer of 1899 I operated upon him for acute appendicitis. He has never had any further hematuria, although from time to time the urine contains oxalate-of-lime crystals, and once (1896) he has had some aching in the left kidney. No stone or gravel has passed at any time, nor has there ever been any real attack of renal colic.

Diagnosis.—The bleeding may last a few hours or it may continue for days; having once occurred it may never appear again; or it may return time after time, and be so profuse as to threaten the patient's life. In the presence of a condition so various in its manifestations, so comparable in its only symptom to the most serious affections of the kidney, so dangerous sometimes in its continuance, a diagnosis is of the utmost importance, and a diagnosis is difficult to obtain. If the hemorrhage ceases, the presence of a trace of albumin and a few casts lends weight to the probability that it was not due to surgical disease. But an appreciation of the fact that the bleeding, which is so often the first symptom of malignant growth in the kidney, may occur two, three, or even five years before any other symptom, cannot fail to impress upon the surgeon the necessity for the utmost caution in deciding the nature of the malady. It is not sufficient that the hemorrhage cease. This it may do spon-

taneously or as the result of the administration of some drug. But the patient should be warned that this bleeding may be the first symptom of some serious renal disease and should be instructed to watch for further developments, and even to report occasionally for examination.

In view of the frequency of idiopathic renal hemorrhage such a course may seem extreme, and in certain cases it may be best to withhold from the patient any knowledge of the real possibilities of the case in order to spare his own nerves as well as those of the surgeon. But the surgeon at least should recognise that the more spontaneous the bleeding and the more entirely free the patient from any other symptom, the greater is the probability of malignant disease. It is for this reason that I am not inclined to discourage exploratory nephrotomy for the purpose of clearing up the diagnosis. This operation has no mortality and few discomforts; and although the hemorrhage may often be checked without it, the assurance that there is no beginning cancer in the kidney is worth having at this cost.

Treatment.—Idiopathic renal hemorrhage may usually be checked by the administration of 0.5 gramme of turpentine in capsules 3 times a day. By this treatment, sometimes adding a fluid diet and diuresis by mineral waters, I have been able to cure some 5 or 6 cases. In one striking case the patient had been bleeding profusely for a month. Every drop of urine passed was stained dark red by the contained blood. One week on turpentine sufficed to check the bleeding absolutely and permanently. Yet in another case the bleeding was checked by turpentine, recurred several years later, and was then not amenable to that drug, nor would the patient accept the suggestion of operative exploration.

Cantharides in small doses has been serviceable in the hands of some, and the fluid extract of *senecio aureus* has its supporters, though it has not proved as useful in my hands as turpentine.

Most surgeons have submitted these cases to nephrotomy, and so often has a cure followed exploration of the kidney that, in order to explain the fact, the theory has been devised that incision of the organ relieves the congestion and so checks the bleeding. This theory fits well with that of Harrison and Edebohls concerning nephrotomy for chronic nephritis. Yet in this connection it is noteworthy that in several instances the bleeding has stopped after such efforts as my own related above, in which the kidney was neither incised nor split; while other kidneys continued to bleed in spite of the exploration. In this desperate extremity nephrectomy may be considered if the patient's life is threatened by the continued hemor-

rhage. Ordinarily speaking, nephrotomy may properly be performed not so much to check the bleeding as to prove the innocence of its cause.

IDIOPATHIC NEPHRALGIA

Although the occurrence of renal pain without renal lesion has not attracted so much attention as has essential renal hematuria, this is due to the relative insignificance rather than to the rarity of the pain as compared to the bleeding. Renal pain and even renal colic are often due to hysteria or to the passage of crystals of uric acid or of oxalate of lime without the presence of any actual calculus. Such pain may assume the proportions of renal colic, and may be associated with the most characteristic symptoms of stone, especially in overworked men and in hysterical women. The narration of two characteristic cases will throw more light upon this subject than pages of discussion.

Case I.—The patient is a short, thick-set muscular individual, the president of a large corporation, and has been engaged in the manufacturing business for many years without any vacation. He had never been ill a day in his life until his present troubles began, and believes himself to be organically sound. But his pulse is rapid; in comparison with that of his brother who accompanied him his complexion is sallow and his air dejected and spiritless. His present complaint began in the summer of 1897, with an attack of sharp colicky pain in the right loin. This pain having recurred on several occasions, he comes with the diagnosis of renal stone expecting operation. The pains are typical attacks of renal colic, beginning in the right loin, running down into the groin and testicle with retraction of that organ. They last for several hours and terminate as suddenly as they begin. No stone has ever been passed. Recent attacks have occurred as follows:

November 17th.—Pain from 2 to 4 A. M.

November 23d.—Pain from 8 to 10.30 A. M.

November 25th.—Pain from 2 to 9 A. M.

November 29th.—Pain from 2 to 5 A. M.

December 1st.—Pain at 2 A. M.

He passes 32 ounces of urine a day. Examination of that fluid shows it to be acid, of a specific gravity of 1.030, containing a trace of albumin and a few blood cells to account for it; no sugar; loaded with oxalates, urates, and phosphates.

Patient eats too much, exercises too little; is constipated; weighs 203 pounds; has been married five years, and has no children. Neither kidney is tender or enlarged.

The following treatment was instituted:

1. Low diet, meat only once a day.
2. Rest from business.
3. Walk six miles a day.
4. Suwannee water, 4 quarts daily.
5. Citrate of potash, 4 grammes 3 times a day.
6. Calomel, rhubarb, and soda.

Since beginning treatment he has never had another colic. Occasionally the loin is sore. He was several times awakened at 2 A. M. by a profuse night-sweat. The exercise and diet were indefinitely continued. During the following six months he gained 21 pounds, impregnated his wife, and was operated upon for appendicitis (!) in another city. The specific gravity of the urine dropped to about 1.020, the crystals, albumin, and blood disappeared, and in April, 1900, he reports himself perfectly vigorous, weighing 172 pounds (a proper reaction from his first excessive gain in weight), and free from all trouble so long as he continues to eat lightly, to exercise freely, and to take a reasonable vacation from business.

Case II.—Female domestic, thirty-nine years old, comes May 7, 1900, complaining of a stone in the left ureter. Six years ago she had some pain in her pelvis, especially during the menstrual period. This was attributed to uterine retrodisplacement, and was treated mechanically without much relief. Since then she has continued to have considerable pain during menstruation and some soreness between times. The pains are pelvic and confined to the left side. On April 12, 1900, she was seized with a sudden sharp pain in the left loin, the pain lasting a few hours and being accompanied with nausea. The attack recurred on April 16th and was relieved by morphin. It was followed by a profuse flow of blood, although menstruation was not due. Since then she has not passed more than a pint of urine during any day. There has been continual pain in the loin, interrupted by four attacks of renal colic, during which she had complete anuria for as long as twelve hours. No stone has ever been passed. The left kidney is just palpable, but not tender. There is one markedly tender spot where the ureter crosses the brim of the pelvis. Vaginal examination is negative. The urine has a specific gravity of 1.010 and contains blood cells and albumin.

Under the impression that a stone was impacted in the ureter, the patient was ordered to drink 6 pints of beer a day. On the following day there was a slight colic, followed by a copious flow of urine, and on May 14th the kidney was no longer palpable, the ureteral tender point had disappeared, and she felt perfectly well.

In July she had a succession of renal colics, associated with pyuria and pollakiuria. A week later a very tender spot appeared in the fundus of the vagina to the left of the median line. On the supposition that there might be a stone in the bladder or at the lower end of the left ureter, the patient was anesthetized, the bladder searched, and the left ureter catheterized by means of a Kelly cystoscope with a Chetwood urethroscope light; no stone found. An elastic movable mass was felt behind the uterus, and a month later I removed a cyst the size of a billiard-ball from the right ovary, and several smaller cysts from the left. Since that time she has had no pains whatever, either pelvic or ureteral. She was last seen perfectly well in December, 1901.

Case I is a good example of renal colic due to the passage of crystals. The characteristic colic and the traces of blood in the urine are calculated to lead to the suspicion that actual stone is present. The X-rays should solve this question. Even without employing this technical means of diagnosis it is often possible to estimate the true nature of the condition by appreciating the physical quality and tone of the patient. Such attacks usually occur in men between the ages of forty and sixty; men of a heavy, gouty tendency; men who have worked hard and incessantly and who have deprived their large muscles of needed exercise in order to overwork their brains. They are often successful business men, accustomed to bearing the mental burden of large corporations or large financial interests. When these attacks occur the physical condition of the patient is poor; his muscles are large and soft; he is often overfed; his circulation is sluggish; he is not unlikely to have a slight chronic interstitial nephritis; and he is liable to intestinal pains, prostatic neuralgia, etc.

The treatment of such cases consists of an alkali, diuresis by mineral waters, rest from business, overexercise and underfeeding, and, as in the case related, while the immediate results may be excellent, the functional trouble can be kept in abeyance only by a continued respect for these hygienic rules.

Case II is of another category. Here the hysterical element predominates, and, as is so often the case, a slight disturbance of the pelvic organs gives rise to various extraordinary and more or less inexplicable symptoms. Had this woman possessed a floating kidney, doubtless it would have been tied up ere this, and probably with no relief to her symptoms. The case merely serves to show the advantage of caution and of waiting to let the symptoms themselves aid in clearing up an obscure diagnosis. Had she come more recently for diagnosis I should have employed the X-ray.

A similar and even more striking case of anuria and retention of urine in a hysterical woman is recorded by Dr. Alfred Gordon.¹ There was practically complete anuria for two days, followed a few days later by an attack of complete retention. Both attacks were cured by the external application of a mixture of chloroform and alcohol, and by suggestion.

¹ Med. Record, 1900, lviii, 289.

CHAPTER XLIV

OPERATIONS UPON THE KIDNEY—RENAL FISTULA

THE preliminary stage of renal surgery has passed. A surgeon is no longer justified in performing a nephrotomy or a nephrectomy according to his own whim. It is no longer proper to sacrifice a whole kidney when a part of it may be saved, nor to sacrifice any part of a kidney when the whole of it may be saved; nor is it proper to perform nephrectomy without the assurance that the opposite kidney is sound. Thus surgery of the kidney has begun to be conservative. It will doubtless progress further along the same lines. Exploratory nephrotomy is being more and more replaced by the X-ray and the ureteral catheter; and it is to be hoped that the day is not far distant when no operation shall be performed upon the kidney without a perfectly definite knowledge of the condition of that organ, so that the surgeon can make up his mind beforehand just what he intends to do, and, by the precision of his knowledge and the accuracy of his diagnosis, spare the patient that prolonged anesthesia which is so often fatal.

In the following paragraphs the more important operations upon the kidney are discussed. Special points of technic have been considered in the chapters relating to each special disease. Yet the surgeon must remember that in many cases it is impossible to perform a typical operation. One nephrorrhaphy is much the same as another, and in exploratory nephrotomy there are not many variations of technic. But when the surgeon undertakes nephrotomy or nephrectomy for the cure of the various suppurative, calculous, tubercular, and malignant diseases of the gland, his experience will suggest minor modifications proper to each case, modifications which it is impracticable and useless to enumerate. But they will all tend to the same ends—to obtain a wide operative field and, as far as possible, to save a kidney which may still be of some service.

Instruments Required.—Besides the clamps, scissors, knives, etc., necessary for any major operation, certain instruments are especially applicable to operations upon the kidney. It is well to have