

of the tubercle bacilli. Sooner or later there appear marked caseation and liquefaction, and finally secondary infection with pyogenic organisms; there results then the formation of abscesses and sinuses just as in tuberculous processes elsewhere.

Clinically, primary tuberculosis of the breast presents itself in a variety of ways. It is probable from a study of the clinical histories that not infrequently the condition escapes recognition for a long time, not only by the physician but by the patient. This is likely to occur when it progresses slowly in an individual otherwise healthy and when pain is either absent or insignificant. Thus Shattock reports the case of a girl 21 years of age who six years before noticed a lump the size of a hazelnut in the left breast, which was occasionally the seat of slight and transient pain. During the last year the axillary glands were enlarged. Upon removal and histologic examination it proved to be typically tuberculous. On the other hand, the condition may be painful in its very incipency. Not infrequently there is no pain whatever complained of until, with the advent of secondary infection, an acute inflammatory condition develops. As before remarked, the axillary lymphatic enlargement is apparently the first symptom in a considerable proportion of cases. In other cases this lymphatic enlargement has been absent altogether during the whole course. However, it occurs at one time or another in 75 per cent. of all cases, and according to Delbet, suppuration occurs in the lymphatics as a rule before it does in the breast itself. The physical examination of the mamma will, as a rule, disclose a tumor, rather ill-defined, closely connected with the gland substance, but freely movable upon the wall of the chest and beneath the skin. The edge of the mass has not the sharply defined boundary of simple chronic suppurative mastitis and not infrequently processes extend from the principal mass, similar to those of carcinoma. The induration is most frequent in the external segment of the gland and occasionally a firm cord of thickened lymphatics may be felt, continuous with those of the axilla. In consistence the mass is rarely uniform, save in the very earliest stages. Usual is the occurrence in some place or places of softened areas or even pronounced fluctuation. In some chronic cases retraction of the nipple has been described.

The disease is one of young adults chiefly; more than one-half of the cases have been described as occurring between the ages of 25 and 35 years and in women, with very few exceptions. The left side is considerably more often affected than the right.

Our chief interest in breast tuberculosis must be centered in the diagnosis. When liquefaction has occurred to a considerable degree, when sinuses have formed or when the condition affects a young woman of pronounced tuberculous habit, the diagnosis may be extremely easy; on the other hand, when found in one more advanced in years, say 35 or over, and especially when but little softening has occurred, carcinoma may be ruled out with the greatest difficulty, or not at all. This may be true of chronic simple suppurative mastitis also or even of the chronic interstitial form. When any degree of softening has occurred, an exploratory aspiration may determine the diagnosis definitely, as in my own case, by the withdrawal of broken down material in which tubercle bacilli may be found.

A perusal of some of the casuistic literature on the

subject has brought me to the conviction that mammary tuberculosis is by no means as infrequent as has been assumed by some. Thus, Albert speaks of having seen fourteen cases in all and four of them within one year. The application of modern methods of diagnosis, and the examination for tubercle bacilli in particular, together with a more accurate knowledge of the clinical manifestations of mammary tuberculosis will, I truly believe, cause some cases formerly classed as simple chronic abscess to be placed under the rubric of tuberculosis. This refers especially to those cases occurring in quite young unmarried women with no cause apparent for the development of abscess. As such an example I might cite a case reported by Marcus and operated by Ransohoff. A girl of 17 years, unmarried, had been suffering for years with severe pains in the breast, for which a physical basis had not been found. Rather suddenly there developed the symptoms of suppuration. Pus was discharged upon incision, but a fistula remained, necessitating a second operation, at which the gland was found riddled with suppurating foci. In conversation with the operator he acknowledged the possibility of its having been tuberculosis. The patient is known to be enjoying perfect health at present.

The prognosis of this affection is about what we might assume from *a priori* considerations. If treated by radical surgical intervention, a recurrence *in loco* is in the extreme improbable, but the disease, betokening by its very presence a lowered power of resistance to the invasion of tubercle bacilli, and possibly an environment favorable to their development, is apt afterward to appear in other and more vital organs, the lungs in particular, and thus bring about a fatal termination. This has been the later history in quite a number of instances.

In the treatment of mammary tuberculosis we have but to follow well recognized surgical principles. With Robinson and others I believe it unnecessary to enter the axilla unless there be an appreciable enlargement of the lymph glands. In refraining from partial operations upon the breast itself and making the amputation in every recognized case of primary mammary tuberculosis, we can err only on the side of wisdom.

#### REFERENCES.

- Billroth: Krankh. d. Brustdrüse, 1880.  
 Velpeau: Diseases of the Breast, Sydenham Society, p. 221.  
 Delbet: Traité de Chir. (Duplay et Reclus), tome vi, p. 207.  
 Powers: Annals of Surgery, vol. xx, p. 159; vol. xxv, p. 86.  
 Shattock: Transactions Pathological Society, London, vol. xl, p. 89.  
 Gaudier et Péraire: Rev. de Chir., 1895, p. 769.  
 Robinson: British Medical Journal, 1892, i, p. 1237.  
 Marcus: Cincinnati Lancet Clinic, vol. lxxv, 1891, p. 69.

## NEPHRECTOMY.

Read before the Michigan State Medical Society, May 6, 1898.

BY J. H. CARSTENS, M.D.

Chief of Staff and Gynecologist to Harper Hospital; Professor of Obstetrics and Clinical Gynecology at the Detroit College of Medicine; Ex President American Association of Obstetricians and Gynecologists, etc.

DETROIT, MICH.

Formerly removal of the kidney was a most formidable operation as the mortality was from 85 to 90 per cent. It was only performed in the very last stages, as a *dernier ressort*. Diagnosis also being very difficult, the morbid conditions for which we now operate and remove the kidney, were treated by internal or external medications. But with the advent of aseptic surgery, great improvement has taken place, and the death record following operations has been so much lessened that, today, it is as low as the general run of

operations involving the peritoneum. The technique has been simplified, so that today no abdominal surgeon hesitates to remove the kidney when indicated.

*Diagnosis.*—The diagnosis of pathologic conditions requiring removal of the kidney is not easy, the symptoms in many cases being very obscure. Pain in the back is among the symptoms considered indicative of kidney troubles, and still how seldom is this the case. I suppose pain in the back has not once in fifty times any connection with renal disease, but if there is a supposition that this is the case, a careful examination of the urine must be made.

Urine analyses, as a rule, are made very superficially and the simple test for albumin or sugar is not sufficient. A most careful microscopic examination must be made, as well as chemic analysis. The microscope will show us epithelium from various parts of the urinary track, if it is diseased, and by the character of the epithelium we can tell where the disease is. Very often we will find no epithelium, and the urine must be examined repeatedly; and even then in a great many cases of diseases of the kidney of various kinds absolutely nothing will be found in the urine to help in diagnosis. One reason of this is that in a great many of these cases the ureter of the affected kidney is closed up, and consequently we only get the urine from the healthy kidney.

When there is an enlargement, a tumor, it is easy to make a diagnosis, because we get the swelling in the region of the kidney. Still, frequently, adhesions to the liver have taken place and it is absolutely impossible to diagnosticate from disease of the liver; but by careful palpation and percussion, enlargement of the kidney can, as a rule, be readily made out, except in very fat subjects.

Renal calculi, on account of the excruciating pain and the previous history, can more readily be diagnosticated. It is only by the most careful attention to the history and progress of the disease, and all the symptoms connected with the particular case, that the diagnosis can be made; but sometimes it is impossible and it can only be made after an exploratory operation. To show how very difficult it is, I mention one case operated on last year.

A woman, 60 years old, was taken with chills and fever, which continued for five months. She was first treated for typhoid fever, then chronic malaria toxemia, having a temperature varying from 102 to 104 degrees. She was finally attended by an able practitioner, who made the diagnosis of septicemia, but could not locate the pus. He sent her to me. The urinary analysis was negative, the abdomen was enlarged, the muscles were rigid so that palpation was impossible; the whole abdomen seemed evenly distended, and the liver seemed enlarged. The woman walked around feeling perfectly well, and had absolutely no pain anywhere, but every few days she would have a severe chill, and had a constant temperature of from 101 to 105 degrees. I put her under an anesthetic and when the abdominal walls were completely relaxed, I could distinctly feel an enlargement below the liver, evidently a kidney filled with pus, with the ureter closed. The next day I removed the kidney, which contained a quart of pus and she made an ideal recovery.

#### INDICATIONS FOR REMOVAL OF THE KIDNEY.

1. The reflex and other symptoms produced by a movable kidney, sometimes require its removal, after repeated efforts have been made to stitch it in place.

2. Renal calculi, although frequently these can be removed, and the kidney left in place. 2. Incurable urinary fistulae. 4. Suppurating kidneys, hydronephrosis. 5. Tumors of the kidneys, benign or malign.

*Technique of the operation.*—The kidney may be reached from the loin or from the front through the abdomen. It seems to me that the selection must depend upon the character of the case. If the kidney is small, it can be reached from behind, and removed without opening the abdomen; but if the kidney is large, that is suppurating, hydronephrotic or contains a tumor, it is best to make the opening anteriorly, at the edge of the peritoneum, which must not necessarily be opened, unless the case is obscure and where it is necessary to explore the other abdominal organs.

Frequently there are gall stones complicating these cases, and then it is a good thing to make the incision at the outer edge of the rectus, remove the gall stones, close your peritoneal cavity, and then shove the peritoneum aside, making your way around it to reach the kidney.

In all large growths, it is very difficult to remove the kidney from the rear, difficult to get at blood vessels, and it is advisable to make your incision well forward, say from the anterior superior spine of the ilium straight upward; sometimes make a transverse incision from this, cut toward the back as far as necessary, make a T-shaped incision, although I like to avoid it and usually make a plain straight cut.

All surgeons have found by experience, that cases come in groups, and so I have lately come across a number of cases requiring removal of the kidney.

*Case 1.*—Mrs. B., aged 58 years, had an immense growth on the left side, which had been coming on for a year. Thirty-three years previously she had fallen and then noticed "a lump on the left side," but it never caused much trouble until a year ago, when it began to enlarge and continued to do so until I saw her. She had passed the menopause and was otherwise in fair health. She did not suffer much from pain, but the increasing size of the tumor alarmed her very much. It was a plain case of enlarged kidney, probably hydronephrosis. She went to Harper Hospital and I operated on her January 7. I made an incision at the outer edge of the rectus, opened the peritoneum for the purpose of exploring the abdominal cavity, and feeling the right kidney, I found everything all right. I closed the incision in the peritoneum, and made a transverse cut backward for two and one-half inches, shoving the peritoneum to one side. I could easily reach the growth and enucleate. Leaving in a small rubber drain, I closed the incision with silkworm sutures, and the patient made a rapid recovery, being up in ten days.

*Case 2.*—Miss R., aged 28 years, had been ailing for a year with gradual decline, and swelling in the left side in the region of the kidney. She was sent to me by Dr. Croman of Mt. Clemens. I diagnosticated a suppurating tubercular kidney. She was sent to St. Mary's Hospital. Finding her greatly emaciated, and evidently suffering from tuberculosis, I did not think it advisable to remove the kidney, but simply made a transverse incision between the ribs and the crest of the ilium down to the kidney, which I opened. About a pint of pus was removed, the cavity washed out, and a gauze drain inserted; the latter was removed in forty-eight hours and another one inserted. The patient made a rapid recovery, and in a few days developed a voracious appetite. In two weeks I allowed her to go home, although there was still a discharge, telling her that the kidney would probably have to be removed. She gained for six weeks and then began to decline. She returned to the hospital, where I removed the kidney, February 3, just two months after the first operation, keeping in a good large drain for a few days. Afterward she rapidly gained, and is now perfectly well, there being no evidence of tubercular deposits anywhere else.

*Case 3.*—Mrs. W., aged 24 years, had always been delicate from childhood, and a swelling had been noticed in the region of the left kidney ever since she could remember. She was married, menstruated regularly, but had no children. During the past three months the growth on the left side increased and caused considerable distress. I considered it a hydro-nephrotic kidney, and urged its removal. She went to Harper

Hospital, February 22, and I removed it, making a transverse incision just below the ribs. I easily reached the growth after cutting through the muscles. It was certainly cystic but did not seem to be a kidney, so I drew off the fluid and then could easily enucleate it. From its general appearance, although greatly distended, I decided it was a kidney. Examining the cavity again, I was astonished to find another kidney apparently perfectly normal, but small; having put my finger into the peritoneum, I reached over to the right side and found the right kidney normal. The kidney removed had evidently never functionated for years, if ever, one of those rudimentary, supplementary kidneys very rarely found. The woman made an uninterrupted recovery. Dr. Bird, who kindly sent her, reports today that she is feeling better than in years.

*Case 4.*—Mrs. S., aged 57 years, brought to me from Indiana, had a large tumor filling the abdomen and reaching down to the pelvis. The doctor supposed it to be an enlarged spleen and after careful examination I concurred in this. It reached down to the right iliac fossa, was semi-fluctuating and might have been taken for an ovarian tumor, but careful examination showed that it was connected with the pelvic organs, and the history, which is perfectly clear, showed that it started on the left side just below the ribs and had grown downward, increasing steadily. She went to Harper Hospital and I operated on her, March 9, making an incision from the ribs downward at the outer edge of the left rectus into the peritoneum. Introducing my hand into the abdominal cavity, I found the growth behind the peritoneum. The right kidney was all right. The liver and spleen and all the abdominal organs were normal. The tumor was behind the peritoneum, and evidently connected with the kidney. I closed the incision in the peritoneum and made a cut backward shoving the peritoneum forward. I had little trouble in reaching the growth, tapped it and removed over a gallon of fluid, and could easily shell it out, finding it to be a kidney containing a stone. I put in a gauze drain and sewed up the wound with silk worm sutures. The whole operation took twenty-three minutes. She made a splendid recovery and in fifteen days returned home.

These cases occurring within three months and all recovering, is very fortunate. In all the cases, I use dry sterilized catgut ligatures, chloroform as an anesthetic and, for external sutures, silk worm gut.

## DERMOID CYST OF THE OVARY, WITH REPORT OF TWO CASES.

Read before the Union Medical Association of N. E. Ohio, at Akron,  
Ohio, Feb. 8, 1898.

BY J. F. FOX, M.D.  
NEW PHILADELPHIA, OHIO.

A dermoid cyst may be defined as a heterotopic tumor, containing the products of epithelial proliferation, fat, hair, teeth, cholesterol, bone, etc. They were first described by Lebert in 1852, who applied the term "dermoid" to all cysts lined by a cyst wall resembling in structure that of the external skin. These cysts are found in nearly all parts of the body, the ovaries, testicle, orbit, floor of the mouth, brain, eye, lungs, anterior mediastinum and mesentery. They occur, however, far more frequently in the ovary. In 188 cases of dermoid cysts collected by Lebert, the ovary was found to be the seat of the tumor in 129 cases, being nearly 70 per cent. of the entire number recorded.

According to Senn the wall of a dermoid cyst is composed of connective tissue, its inner surface is often smooth resembling a serous surface, but microscopic examination always reveals an epithelial lining composed, according to the character of the epithelial cells, of one or more layers. If the cysts are lined with columnar or ciliated epithelium, the cells are arranged, as a rule, in a single layer; if on the contrary the matrix represents skin in place of mucous membrane, pavement cells in many layers line the cyst. In cyst wall supplied with the appendages of the skin, these appendages are seen and occupy the

same relation to the cutis as in normal skin. Hair is the most frequent of the cutaneous appendages in dermoids. The hair in a dermoid, called by Virchow lanugo, is fine and of a blonde or light brown color, even in negroes. It is interesting to note that the hair found in ovarian dermoids of aged persons is white. also baldness of the inner surface of dermoids is as often met with as baldness of the scalp; the hair grows, as on the skin, from perfect hair follicles. The teeth found in these cysts are composed of dentine, enamel and cementum, arranged in the same manner as in normal teeth, and they are developed on the same plan.

Senn also claims that the cutaneous lining of dermoid cysts, like the external skin, is subject to the formation of benign and malignant growths. Carcinoma may develop in a dermoid cyst. Benign epithelial tumors, papilloma and adenoma are frequently met with.

In regard to the origin of these peculiar growths, physiologists have been very much at sea; many theories have been advanced; the theory of impaction advanced by Verneuil and accepted by a number of other investigators seems to be the most tenable. At one time the finding one of these growths in the ovary of an unmarried woman was presumptive evidence that she was unchaste, but this idea was dissipated as soon as examples were reported existing in children. According to the theory of Verneuil, a portion of the blastoderm is forced by pressure into the tissues, there remaining dormant for a while, afterward developing, thus producing by its growth an erratic development of normal tissue.

With reference to the period of life at which they were found, Pigné may be quoted. He analyzed 18 cases with the following results:

Five existed in virgins under 12 years old; 6 in children from six months to 2 years; 4 in the female fetus at term; 3 in fetuses cast off at eight months. On the other hand many cases are reported where they were found at puberty, middle life and old age. Potter reports, in examining postmortem the body of a woman 83 years old, found a similar growth, which though weighing five pounds and nine ounces, had occasioned no symptoms during life. It appears that up to the period of puberty the dermoid occurs oftener than any other form of ovarian tumor.

The contents of these cysts vary considerably in different cases. Sebaceous matter is always found in abundance. Hair is frequently found, short and stubby in some; in others again it is found quite long, as in the oft quoted case of Mundé where a switch of hair was removed measuring five and one-half feet. Again teeth are occasionally found in great numbers. Schnabel found more than one hundred attached to three pieces of bone removed from the walls of a large dermoid cyst in the case of a girl 13 years of age. Another case is reported by Autenrieth in which over three hundred teeth were removed. The presence of teeth constitutes one of the most remarkable feature of dermoid cysts. They may be attached to bone or cartilage within the cyst wall, while their crowns extend into its cavity. Sometimes their fangs are surrounded merely by connective tissue; while again the entire tooth may be entirely imbedded in the cyst wall, no portion showing except when exposed by an incision. Occasionally teeth are well formed and of a distinct type. They are usually, however, faulty in point of development and shape, the crown, fang,