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Contributors

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Bryant, Thomas, 1828-1914
Royal College of Surgeons of England

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Tumors of the Abdominal
Walls.

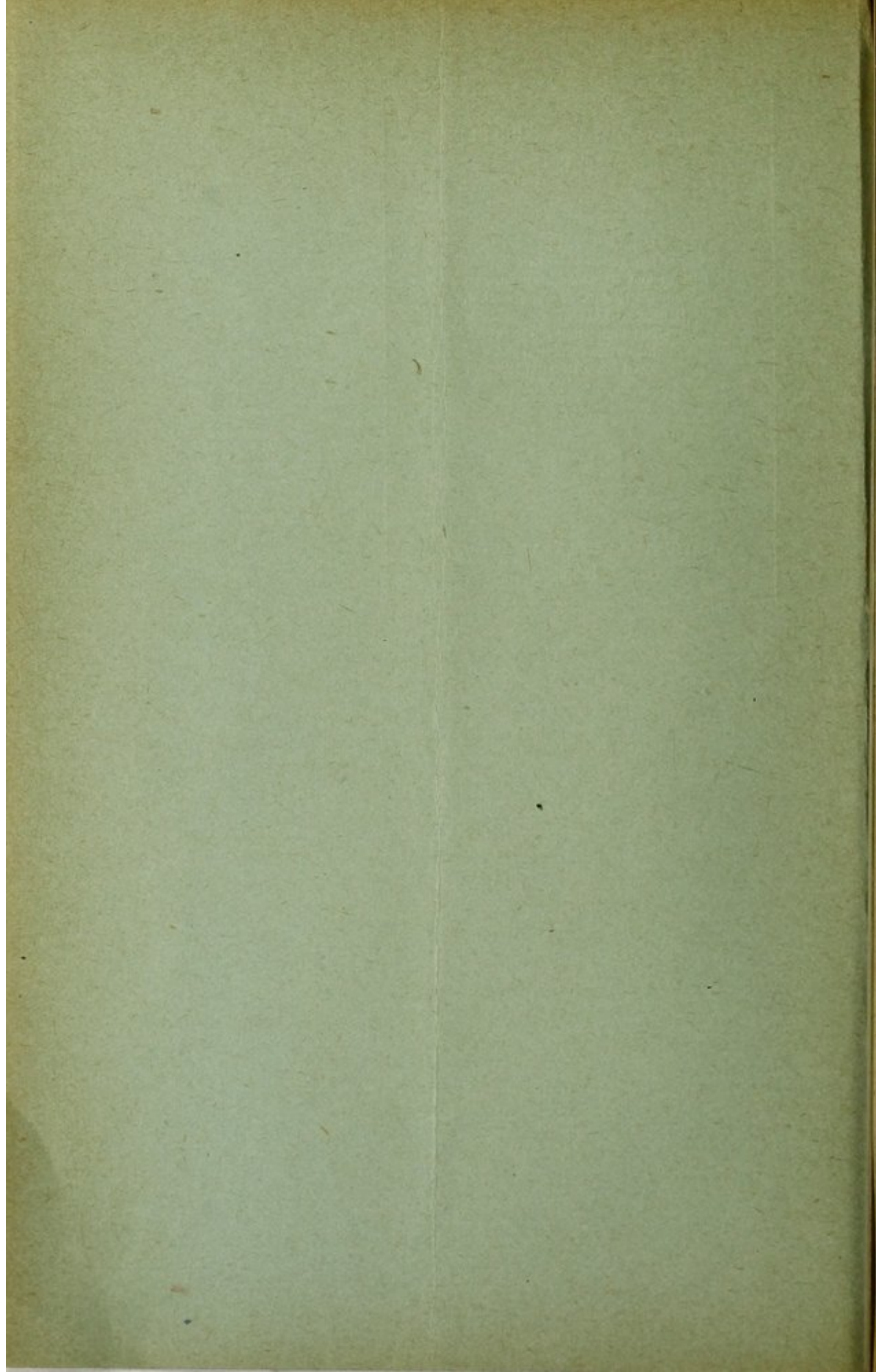
BY

EDWARD J. ILL, M.D.,

Fellow of the American Association of Obstetricians and Gynecologists; Surgeon to Woman's Hospital of Newark, N. J.; Gynecologist to St. Barnabas' Hospital; Consulting Surgeon to the German Hospital and All Souls Hospital of Morristown, N. J.



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TUMORS OF THE ABDOMINAL WALLS.

By EDWARD J. ILL, M.D.,

NEWARK, N. J.

THIS subject is one in which I have always taken great interest, and is, likewise, one of vast importance. Let me say at the outset that under tumors of the abdominal walls I shall understand such tumors as have any connection with, or rather originate in, the soft covering of the abdominal cavity which is situated between the ossa pubis, Poupart's ligament, and crest of the ilium below, the border of the ribs and xyphoid cartilage above, and a line running at right angles from the crests of the ilium, on either side, to the end of the last rib.

As it becomes of the greatest importance to differentiate between tumors implicating the peritoneum, but originating within that cavity, and such as lie entirely outside, I shall have to refer to the former whenever such a differentiation becomes necessary. I shall touch upon hernias only in so far as it will be necessary to distinguish neoplasms and inflammatory tumors from them.

As these various tumors do not remain strictly circumscribed by the tissue in which they originate, I shall classify them as to their pathology rather than after the layer of tissue which may produce them. They will, therefore, have to be divided into three large classes: (1) inflammatory tumors; (2) neoplasms; (3) tumors of the urachus and round ligament.

INFLAMMATORY TUMORS.

I feel the necessity of speaking of these, since it often needs close observation to distinguish them from neoplasms. They may be divided into primary and secondary.

A primary inflammatory tumor may be acute or subacute, either

suppurating or non-suppurating. Any of the various layers may be the seat of such an inflammation. They are the more serious the nearer they are to the peritoneum, and the lower they are on the abdomen and in the subperitoneal cellular tissue—the latter for the reason that pus is apt to gravitate down into the loose cellular tissue about the bladder, and thus seriously endanger life.

The *etiology* is not always easily discerned. Traumatism is a frequent cause. Thus I have seen a large abscess in the rectus abdominis of a negro, resulting from the kick of a horse. This case resulted even though no disturbance in the continuity of the skin was observed. An inflammation or rupture of an abdominal muscle, especially of the rectus, following typhoid fever, is no uncommon cause of abscess. Gunshot and stab wounds, as well as hypodermic injections, are a frequent cause of suppurative tumors.

The *diagnosis* is easy as soon as fluctuation can be discerned, and is very difficult in the chronic form of the disease, especially when deep-seated. The following case will, I think, form an illustration of the chronic form :

CASE I. *Tumor of the abdominal wall simulating a solid growth; operation; abscess; cure.*—Mrs. J. S., aged forty-five years, was referred to me by Dr. Gray, of East Orange, on April 12, 1892. She suffered with occasional attacks of gastralgia for years. Some weeks ago the Doctor noticed, during one of these attacks, that she had a tumor half-way between the umbilicus and ensiform cartilage. It was painful only when pressed upon. At the above date it gave her no inconvenience, except that it was sore when the corset bore against it. She had no fever. The woman is rather stout; has a tumor in the median line measuring five by seven centimetres, with sharply defined outline. The long axis of the tumor is in the long axis of the body. It is not painful on being handled, is freely movable when the muscles are relaxed, and fixed when they are contracted. It is hard and solid to the touch, and its posterior surface smooth so far as it can be reached. The diagnosis of a solid tumor of the muscles or deep fascia was made, and the patient asked to return for observation in two weeks. On April 26th she returned; there was no fever and but little pain. The tumor now measured seven by nine centimetres. The rapidity of its growth was suspicious as to its nature. On May 1st, while under an anesthetic, the great mobility of the tumor and its freedom from any adhesions in the abdomen were remarked upon, as was also a slight

edema over the tumor. An exploratory incision of an inch in depth brought pus and cleared up the diagnosis. She made a good recovery.

In acute cases the usual symptoms of an acute septic phlegmon will present themselves here as elsewhere.

Among its distinguishing symptoms will be fever, acute pains, and edema. When it is due to the rupture of a muscle the sudden pains caused by that accident, and the possibility of its following typhoid fever, must be taken into account.

The chronic form, as in the case above described, will show none of these symptoms, and an exploratory incision is often necessary, especially when it is deep-seated. The amount of adventitious tissue of fibrous density surrounding a chronic abscess in this region is sometimes truly wonderful, and gives the impression to the touch of a solid fibrous growth. At times, where the pus is within the sheath of a muscle, it will be restricted to those portions where there are tendinous adhesions or insertions, and this may guide us in our diagnosis.

The *prognosis* of the acute or chronic form is good under proper management.

The *treatment* is simple as soon as the diagnosis is established. Free incision, curettement, and drainage preferably by iodoform-gauze packing, will speedily cure the case.

The secondary inflammatory tumors do not concern us here to any extent. They are usually discovered to depend upon an inflammatory difficulty within the abdomen, as an appendicitis vermiciformis, pyosalpinx, infiltration of urine, foreign body in the bowel, gall-stones,¹ or an empyema, necrosis of ribs or crest of ilium, etc.

The *prognosis* depends upon the nature of the cause, and the possibility of its removal is always more grave than a primary inflammation.

To differentiate between a large inflammatory tumor in the abdominal walls and a circumscribed peritonitis, we will usually find that the prominence, which is so marked in the former, is

¹ A few months ago I removed from an abscess, six centimetres above and to the right of navel, three small gall-stones. The patient had suffered with jaundice for some weeks.

absent in the latter; besides, there will always be a history of peritonitic irritation, such as vomiting, obstruction of the bowel, or tympanites. Frequently one can notice that the tumor is extra-peritoneal by a slight change in the percussion sound as the intestines rise and fall during deep inspiration and expiration, the percussing being done at the edge of the tumor. If, however, there is a circumscribed peritonitis, there is always the same note from the adherent gut, which prevents this slight change. A full bladder can readily be distinguished by catheterization from the tumor in question. Great difficulty will be experienced in differentiating between a deep-seated hypogastric abscess and an inflamed cyst of the urachus.

The differentiation from intra-abdominal tumors is easy so long as they are freely movable. Their freedom from the abdominal walls is easily demonstrated by their rise and fall at inspiration or expiration; or, when seated low in the abdomen, by placing the patient in Trendelenburg's position, when the tumor will glide up and its mobility be demonstrated. When there is a cystic adherent tumor, not containing pus, the aspirating-needle will certainly tell the story. It goes without saying, that all tumors freely movable in the abdomen would be such as have not developed as inflammatory masses in the abdominal walls.

NEOPLASMS.

From Gurlt's statistics of tumors, collected from three Vienna hospitals, we find that of 16,637 cases there were 43 in the abdominal walls. Of these—

| | | | |
|--------|----------------|----|-------------------------|
| 256 | were atheroma, | 1 | in the abdominal walls. |
| 194 | " angioma, | 3 | " " " " |
| 318 | " lipoma, | 4 | " " " " |
| 699 | " fibroma, | 7 | " " " " |
| 848 | " sarcoma, | 14 | " " " " |
| 11,131 | " carcinoma, | 13 | " " " " |
| 102 | " papilloma, | 1 | " " " (navel). |

VASCULAR TUMORS.—The angioma, simple or cavernous, occurs on the abdominal wall, as well as elsewhere in the body, and presents nothing that would interest the abdominal surgeon especially; suffice it to say that they have not been known to go beyond the

superficial fascia. The diagnostic features are the same as elsewhere. Usually they are congenital. I am not aware of any having been described as occurring at the navel. If such a case were presented for operation, it must be borne in mind that the peritoneum is adherent to the scar of the navel.

CYSTIC TUMORS.—*Atheroma* and *dermoids* of the abdominal walls are rare, as but few of them have been described. According to Ledderhose no cases of the latter have been published occurring outside of the navel. It is probable that some described as dermoids have originated in the ovary and become adherent to the abdominal walls. These tumors, when at the navel, have a tendency to rise above the level of the skin, and therefore become pedunculated (Küster). They are very apt, on account of the poor circulation and pressure from clothing, to have their surface ulcerated.

ECHINOCOCCUS.—These entozoa are exceedingly rare in the abdominal walls. Mandelung finds but one in one hundred and ninety-six cases. In the cases described it was noticed that the tumors were of exceedingly slow growth, Courty having seen a case that lasted thirty-five years. Ten years seem to be an ordinary time for their existence. An important point, according to Mouchet,¹ is that they usually develop in the subperitoneal cellular tissue, and most frequently in the median line and near the navel. They are described as being rarely irregular in outline (Gallez).

The symptoms in the earlier stages are entirely negative. The patient notices a tumor of small size, very slow growth, years passing by before it annoys him. When the tumor reaches a large size pressure symptoms show themselves. Thus also general dyspepsia and constipation are described (Gallez). As soon as an inflammation of the cyst shows itself, the symptoms become more urgent. Severe pains in the tumor are common, as is also fever. Rupture of the sac externally, with tedious suppuration, is apt to follow. This then becomes indistinguishable from chronic abscess with fistula.

The *diagnosis* is difficult. It is usual for echinococci to occur elsewhere in the body when there are any in the abdominal wall, and this may assist in the diagnosis. If, however, cysts have

¹ Montpellier Médical, 1871.

formed in internal abdominal organs, they will produce severe symptoms long before the cyst of the abdominal wall would. The characteristic hydatid fremitus has rarely been observed in this location (Mouchet). Fluctuation is commonly absent on account of the great thickness of the capsules enclosing the cysts. Its differentiation from other tumors in the abdominal walls or those closely connected with the peritoneum is almost impossible; especially is this the case when the tumor has reached a large size. Growths most likely to be taken for this kind of tumor would be adherent ovarian cysts, localized peritonitic fluid exudate, cysts of the urachus, and possibly abscess. Physical conditions peculiar to these diseases would have to help us in our diagnosis. Lastly, the chemical and microscopical examination of the fluid would probably tell the story.

The *treatment* would consist in incising the tumor and clearing out its contents. Stitching the cyst capsule of the skin and careful drainage have been recommended. Aspiration and injection of tincture of iodine have proven useless in the hands of Arnould, and only after incision was the patient cured. Whenever the cyst wall has become loosened from its surrounding capsule by inflammation, all may be extirpated. Great care must be taken in all these operations not to open the peritoneum, or at least to prevent the cyst contents from getting into the cavity, as fatal results would be likely to follow.

HEMATOMA.—This form of cystic tumor, if it may be so called, is rare except as a result of rupture of the muscle, following protracted typhoid fever, from external violence or over-exertion. It is interesting as a possible cause of the production of fibroid tumors.¹

The history, with the suddenness of its appearance and impossibility of reducing the tumor, the fluctuation in the earlier stages of the disease, and possible discoloration of the skin, would make the *diagnosis* probable. If, with all this, the ends of the ruptured muscle could be felt, the diagnosis would be certain.

The *treatment* would be expectant, unless suppuration should take place, when it should be treated as an ordinary abscess.

¹ Freund: Ledderhose, p. 58.

SUBPERITONEAL CYSTS.—Cysts of a subperitoneal variety are sometimes met with as an accidental discovery during operation for other tumors. The following is a case in question :

CASE II.—Mrs. P., aged forty-two years, was seen in consultation with Dr. Diffenbach. She presented symptoms of obstruction of the bowel following an illness of several months, during which time all symptoms were referable to the pelvis. An abdominal section revealed an adeno-sarcoma of both ovaries and peritoneum. To the left of the incision, not connected with the pelvic organ, was a cyst of the size of a fist and entirely subperitoneal. It contained perfectly clear serum.

Kœberlé (Ledderhose) also describes two cases of "excessive development of the sub-umbilical lymphatic vessels," which formed into cysts of eight centimetres in size, and were discovered and removed during operation for ovarian tumors. There is a form of serous cyst about the navel, usually due to a hernia, the neck of which has become closed by adhesion. I have seen such cysts during the course of an abdominal section, and removed them with the navel. Roser describes such a cyst, of congenital origin, which he removed by ligature. It was covered by granulation tissue and contained a serous cyst.

LIPOMA.—Lipomata are found : 1. In the subcutaneous tissue. 2. Between the layers of muscles—*i. e.*, in the cellular tissue between the muscles. 3. In the subperitoneal fat.

I fail to see the use of such a classification as Tillaux suggests :¹ "For clinical purposes they are divided into such as develop in the inguinal region and such as occur in the linea alba."

Those that occur in the subcutaneous tissue present nothing but what we find in the subcutaneous tissue elsewhere. There is, however, a form where it is difficult to distinguish between what is an abnormal development of fat and a tumor—so large and so circumscribed will be the deposit of fat on the abdomen.

When lipomatous tumors take on a rapid growth, their malignancy may be suspected. Owing to long-continued irritation, either from rubbing of the clothes or from a chronic congested condition, they are apt to take on a fibrous degeneration, and are then called

¹ Leon Gallez, p. 126.

fibro-lipoma. This variety grows very large. Tumors of forty pounds have been removed and large bloodvessels encountered.

On account of degenerative changes which these tumors undergo, it is well to recommend their early removal.

Lipomata of the intra-muscular variety are certainly of rare occurrence. Péan¹ describes them: Being located between the muscular layers, they would naturally be severely compressed and produce a sensation of a very solid tumor to the examining hand. Their diagnosis is exceedingly difficult, and probably the true nature of the tumor would not be made out until it had been extirpated.

The subperitoneal variety of the lipoma are those that must interest us most. Sometimes they simulate the subcutaneous variety by their peculiar displacement or protrusion through the median line. These tumors sometimes remain between the peritoneum and transversalis fascia, producing little, if any, symptoms, thus escaping recognition. At times, however, they protrude into the peritoneal cavity, become pedunculated, and even separated from their original attachments, thus forming perfectly free bodies in the peritoneal cavity. According to Virchow, these free bodies of the peritoneal cavity are usually fibro-lipomatous in character and were separated from such an attachment. When they have pushed themselves into and through the conjoined tendon at the median line, they form an important form, of which I shall speak at length. They have been variously described under many names. Gavengeot, in 1743, first described them, but thought that their contents consisted of a portion of the stomach, and thus called them "gastrocele." August Gottlieb Richter (1778, Bd. i. page 14) gives them the same name. He says, however: "Nicht sowohl weil der Magen darinnen enthalten ist, sondern weil er in der Magengegend entsteht." Gunz,² of Leipzig, soon discovered that they usually contained nothing but fat from the suspensory ligament of the liver or subperitoneal fat. Leville (1812) recognized the misnomer, and from their most frequent location called them, more properly, "hernia epigastrica." Vidal (1851) and Bardeleben³ have studied and described this form of tumor minutely. The German term

¹ Ledderhose, p. 41.

² R. Dittmar, 1889.

³ Lehrbuch der Chirurgie, Bd. iii.

"Fettbrüche" probably describes this form best, and is the form I must speak of in this paper.

As to the location of the tumor, it is most frequent between the xyphoid cartilage and the navel, at either side of the median line, most frequently to the left. At times it is found in the rectus muscle. This is rare.

The hernial ring is caused by a defect at the interlacing of the tendinous cords of the linea alba, possibly at the point of exit of the nerves or bloodvessels.

When an incision is made into the tumor the following structures are encountered: First, the skin; second, the subcutaneous fat; third, the subperitoneal fat; fourth, the peritoneum. These soon all become blended together so as to make their separation difficult. It is not in the province of this paper to describe those large herniæ which contain large portions of viscera, and are produced by immense separation of tissue as a result of abdominal section, wounds, or abscesses. They are usually easily distinguished from the other forms of tumors which I am especially asked to describe. The origin of these fat herniæ, so easily taken for lipomata, is frequently attributed to a fall or over-exertion. In a monograph by Bonnet, on the radical cure of hernia, he attributes three out of ten cases to this cause.

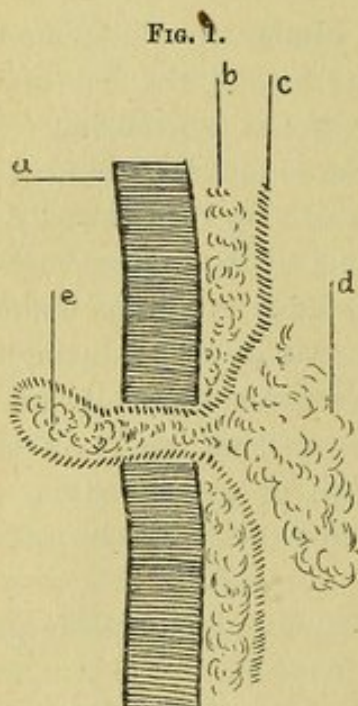
There are four forms in which the tumors in question present themselves:

1. *Omental lipoma.* It is produced thus: A small protrusion of peritoneum through one of the bloodvessels or nerve apertures takes place. Into this a small piece of omentum slips, becomes adherent, and, owing to an irritation at the neck of the hernia from incomplete constriction, soon takes on growth. During its earlier existence it can often be reduced. Later, as it becomes larger than the opening in the fibrous sheath, it becomes irreducible and the source of much difficulty and annoyance. The accompanying diagrammatic drawing (Fig. 1), taken from Ledderhose, represents this form well.

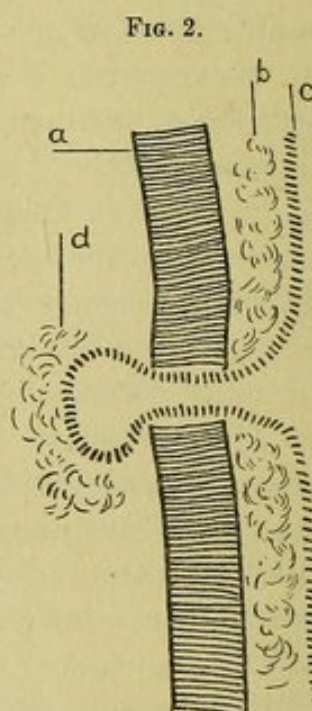
2. A second form of hernia adiposa is where the lipoma grows on or over the hernial sac. These cases are apt to become cystic by inflammatory adhesions at the neck of the tumor. Virchow calls them "hernial hydrocele with peripheral lipoma formation." At times the peritoneal sac becomes obliterated, and nothing marks

its existence except a scar and adhesions at the parietal peritoneum. The accompanying diagrammatic drawing (Fig. 2) represents this form of tumor.

3. Wernher describes a third form of hernial lipoma. In these cases the hernial sac is not always present, and, if so, is of secondary formation, being drawn through the hernial ring by the lipoma. Its etiology is doubtful. Its formation is explained by a lobule of fat having protruded through one of the interspaces, described



a. Fascia transversalis. b. Subperitoneal fat. c. Peritoneum. d. Omentum. e. Lipomatous omentum.



a. Fascia transversalis. b. Subperitoneal fat. c. Peritoneum. d. Lipoma.

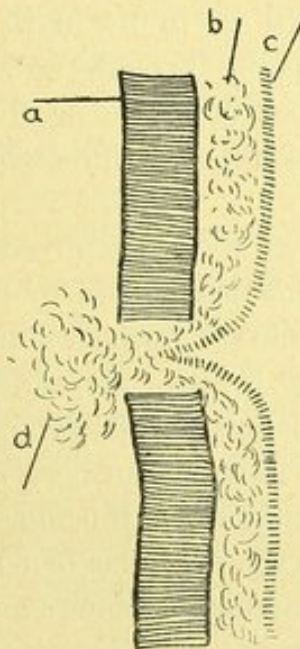
above, of the fascia transversalis of the linea alba. It then takes on a growth and possibly drags the peritoneum after it. Whether the second form, above described, is not originally of this kind, it is difficult to say. The accompanying diagrammatic drawing (Fig. 3) represents this form of tumor.

4. A fourth form has been described, where a subperitoneal lipoma is found inside of a hernial sac, and still not in the peritoneal cavity. This is difficult to understand until one has closely followed the formation of such a condition. Thus, when a lipoma is formed alongside and at the neck of a hernial sac, it may by its growth push the peritoneum below it and grow into this hernial

sac. The accompanying diagrammatic drawing (Fig. 4) will describe this form better than words.

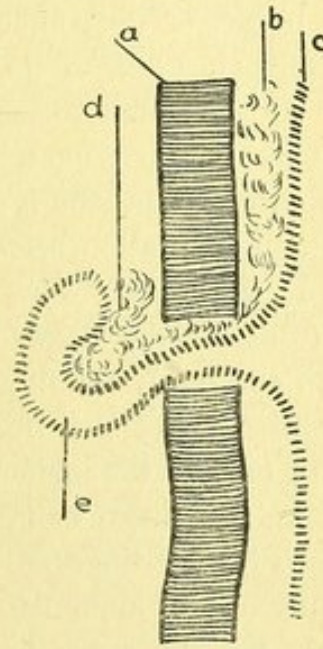
The *symptoms* of this difficulty are peculiar. The patient complains of severe drawing pains, especially on such exertions as coughing, stretching, or straining in the epigastrium. These symptoms may be only very slight, and symptoms referable to the nervous system be more prominent. Patients are apt to become hypochondriacs and lose their appetite. Dyspeptic symptoms

FIG. 3.



a. Fascia transversalis. b. Subperitoneal fat. c. Peritoneum. d. Lipoma.

FIG. 4.



a. Fascia transversalis. b. Subperitoneal fat. c. Peritoneum. d. Lipoma. e. Hernial sac.

supervene. Frequently these patients have been treated for years as dyspeptics. Gastralgia and enteralgia are usual accompaniments. It is evident that these symptoms are due to a dragging of the peritoneum at a point of fixation. That the symptoms are due to this difficulty is shown by the fact that removal of the tumor and closure of the fascia cure the patient. It is, therefore, of vast importance to look for this difficulty in all patients who have obscure symptoms of indigestion, gastralgia, or enteralgia. Strangulation occurs rarely, and less so when the tumor becomes large and is nourished by adhesion from without.

From what has been said it will be seen that the *diagnosis* is by

no means easy. The tumor is frequently no larger than from a bean to a hickory-nut, and is found with difficulty when the patient is a fat person. The examination is best conducted while the patient is in the upright position and slightly bent forward. The usual physical symptoms of hernia should be looked for.

The *differential diagnosis* between these fat herniæ and an ordinary lipoma must be naturally very difficult. When a traumatic origin or sudden appearance with pain can be demonstrated, or when the tumor was known to have been reducible at an early stage, then the diagnosis of a hernia adiposa is certain. As to the exact nature of its contents we shall still be in the dark, except that we shall know of its being a lipoma by its characteristic surface. If the tumor has undergone fibrous or cystic degeneration, its differentiation from a fibroma or cyst becomes impossible, and an exploratory incision a necessity.

The differentiation between a lipoma and a fibroma presents, as a rule, no difficulty. The lipoma is a lobulated, softish, movable mass (unless it be of very large size), while the fibroma is perfectly smooth and hard, not movable when the muscles are rigid. The differentiation between this and a sarcomatous tumor becomes more difficult only in the earlier stages of the latter. But here, also, we shall find the fixed condition of the tumor when the muscles are contracted, since the usual seat is within the muscular or tendinous structure of the abdomen. When the sarcoma becomes more advanced, the difference becomes more apparent. Their apparent fluctuation, the pain, the adhesions, possibly the appearance of the patient and rapid emaciation, and, lastly, their rapid growth, would lead us to suspect their malignant nature.

As a rule, lipomata of small size will rarely present themselves for *treatment*, as they produce no symptoms. Their extirpation is a simple matter here as elsewhere on the trunk.

When the lipoma is connected with a hernia of the median line, great care should be taken not to wound an intestine which might be contained in a sac. The same care should be taken with all lipomata found in the median line, as it may prove to be a lipomatous hernia. It is therefore best to cut the tumor in half by careful strokes with the knife until one feels sure that nothing of an intestinal nature is contained in the tumor. When a hernial sac is found, it should be drawn out, well ligated close to the fascia, the

superabundant tissues cut off, and the stump returned. The fascia should be stitched with fine silk or catgut, and the wound closed over it. It goes without saying, that careful antiseptic measures only will insure success.

Treatment by truss when the tumor is reducible is, as a rule, unsatisfactory. The application of a close-fitting abdominal supporter is of much greater value and comfort to the patient than the use of a truss.

FIBROMA AND SARCOMA.—Fibroma and sarcoma must be spoken of under one heading. It is difficult at times to say where one starts and the other ceases. There are in the main two sources from which these tumors originate: First, the skin; and, secondly, the muscular apparatus (fascia). The former will receive our attention first.

Fibroma molluscum is the name of a multiple tumor of fibrous character which is most commonly found in the skin. They are distinguished from the fibroids which originate from the fascia by their intimate connection with the skin, their frequent pedunculated form, their softish, pseudo-fluctuating character, and their mobility upon the subcutaneous cellular tissue. From lipoma they are distinguished by their smooth surface, rarely appearing lobulated. They have been removed for their large size; thus, Kosinski removed one from a girl of twenty years, weighing thirty-three pounds. Their removal must be directed by the ordinary rules of surgery.

Sarcomata of the skin are very apt to have a rapid growth, and frequently partake of a melanotic character, especially so when recurring after extirpation. They appear uneven and nodular, hard in recent portions of the growth and soft in the older portions. From fibroma they are distinguished by their rapid growth and painfulness. Their irregular surface has a tendency to ulcerate. Their growth extends into the surrounding tissue, and recurrences after extirpation and early metastasis are the rule. The importance of early extirpation cannot be impressed too much upon the surgeon.

For all forms of tumors originating in the fibrous tissue, Johannes Müller introduced the term *desmoid*. They are the common tumors of the muscular apparatus as compared with any other form. With rare exceptions they originate from the posterior sheath of

the rectus abdominis muscle (fascia transversalis), and very rarely in the superficial fascia.

A paper by Richard Lencke, "Ueber Fibroma des präperitonealen Bindegewebes," is no doubt a misnomer, as all his cases are tumors of the fascia transversalis. Continuing to grow, they separate and absorb the muscular tissue. They therefore naturally produce an elevation in the abdominal walls, but, on account of the large deposit of fat on the abdomen, rarely affect the skin. As a rule, however, they also grow toward the abdominal cavity. Thus they may be found to have gone as far as the loose subperitoneal cellular tissue, or they may become closely and inseparably adherent to the peritoneum, and even may break into and through that membrane (Volkmann). The latter ones are, however, most apt to be sarcomatous. Laterally they may grow to take in the muscles of the loin, and above or below become adherent to the bone of the pelvis or the cartilage of the ribs. Thus it happened that they were thought to originate from those structures and were pedunculated. The form of the tumor is usually round or oval; at times that portion of the tumor which is connected with the fascia transversalis becomes contracted, and then the form of a shirt-stud results.

The size of the tumor, of course, varies. Commonly a patient will not seek the advice of a physician until the tumor has reached a considerable size, or because of the pain it produces. These growths are fed by the deep epigastric, which enters the rectus at about eight centimetres above the ossa pubis; also, the superior epigastric, internal mammary, and lombales. Those who have closely observed the origin of these tumors agree that they almost invariably originate in the fibrous sheath of the muscles, and never lie loose between them, as they would did their growth start in the muscles. The tumor, as a rule, is quite dry and not very bloody, though the blood which oozes from the large cut veins on its surface is sometimes amazing. This is due to their inability to retract.

Structurally they are composed of dense fibrous tissue when non-malignant. When sarcomatous all those forms occur which are found originating in fibrous tissue. The growth of the fibroma takes place by the production of intercellular fibrous substance. In this way it appears that the cellular tissue is in some portions

of the tumor larger than in others, and therefore it will often be difficult to tell whether one portion of the tumor is sarcomatous or still purely fibroid. At times the fibrous tissue will accept (by metamorphosis) a colloid or mucoid appearance. Never, however, has a fatty degeneration been observed. A calcareous condition has been reported by Gauche. A sphacelated, ulcerated, and gangrenous condition, however, is not infrequent, and hemorrhage of a deadly character has occurred. Very frequently the growth begins during pregnancy and continues to grow with more or less rapidity. Suadican (Esmarch) has observed a cessation of the growth after confinement, as has also Reed, of Cincinnati. Complete disappearance by absorption has not been recorded, though Dr. Reed says that "at the time of her accouchement it had practically disappeared." The female is more prone to suffer from these tumors than the male. In males they are most apt to be recurrent; thus, in four cases in men reported by Volkmann, only one case remained without recurrence. In these cases the recurrent tumors were of a soft, sarcomatous character.

Etiology. Concerning this very little is known. Grätzer (Cohnheim) considers that its foundation is laid in the embryo. It seems doubtful, however, whether the origin of these homologous tumors can be explained by his theory. Traumatism, to which Herzog,¹ Freund,² and Atkins³ attribute their cases, is charged with this form of tumor; in fact, the observations within the last three or four years, as has been shown by quite a number of cases, have demonstrated the probability of this as a prominent factor in the production of fibroma and sarcoma.

Symptomatology. As a rule, patients will not present themselves to the doctor until the tumor has reached a large size, or unless it is in some portion of the body where pressure is exerted upon it. We can, therefore, consider that they produce but little trouble in the early stages. When they become large they become troublesome by compression of the abdominal organs, by the disfigurement of the patient, or by the inconvenience produced by the pressure of the clothing, as in my own cases. When they become still larger, gangrene of the skin over the most elevated portion of the

¹ "Ueber Fibroma der Bauchdecken," München, 1883.

² Ledderhose.

³ Atkins: "On Excision of the Abdominal Wall for Traumatic Malignancy."

tumor, and thus septic infection or deadly hemorrhage, may take place. It has been observed that these tumors are more sensitive during menstruation than at any other time. Under ordinary circumstances they are but slightly sensitive to touch.

Diagnosis. The fact that between eighty and ninety per cent.¹ of all cases will be women must be taken into consideration when a diagnosis is made; also, that the tumor rapidly increases during a pregnancy, though it may have been present before or of very slow growth.

By inspection the tumor will appear above the surface of the abdominal walls, if it has reached any large size and the patient is not overfat. The skin, possibly, is covered by large veins; this will be more so the larger the tumor appears. During respiration the tumor will be lifted forward and backward only, the patient being on her back. When the tumor is of excessive size, forced respiration might cause an upward or downward movement of the growth. There will be no lifting up of the abdominal walls from the tumor on deep inspiration, as is so often seen in intra-abdominal growths.

By palpation the tumor will be found to be very circumscribed, at times perfectly smooth (unilobular), at others uneven and rarely nodular (multilobular), and generally of solid, board-like feel. Occasionally fluctuations will be noticed, as was observed in Dr. Weir's case. If not too large, and occurring in a multipara, the fingers of both hands can almost pass around the tumor and the posterior smooth or nodular surface may be distinguished; this, however, will not be the case when the patient is directed to contract the abdominal muscle, as then the tumor will appear immovable. This must be an important point in the differential diagnosis between a tumor situated within or outside of muscles and fascia; for when the tumor is situated in the subcutaneous cellular tissue it will be movable, no matter what condition the muscles are in. If the tumor is intra-peritoneal, any contraction of the muscle will not send the tumor back to its place, as would be the case with a tumor situated in the muscular or fibrous layers of the abdominal walls. If the tumor were in the deep layer of the abdominal muscles, any contraction would tend to throw the tumor into the abdominal

¹ In a collection of Ledderhose, ninety of one hundred cases were women.

cavity; if in the outer layer, the tendency would be to raise the tumor above the level of the abdominal walls. The tumor will not often be sensitive to pressure.

The percussion note, of course, will be dull all over the region of the tumor. Percussion will often help us out in differentiating between tumors of the abdominal walls and an enlarged spleen, especially when the growth is situated in the left hypochondriac region. In one of my cases there was a distinct tympanitic resonance between the tumor and the location of the normal spleen dulness. Thus it was, also, that tympanitic resonance between the left lobe of the liver and the tumor could be noticed only when the patient made a deep expiratory effort. While the dulness over the liver rose and sank by inspiration and expiration, the dulness over the tumor remained stationary. Whether there would be resonance between the kidney and the tumor, if the tumor were situated in the flank, would depend upon the size which the tumor had reached and how far it was pushing itself into the abdominal cavity. In case of a tumor of the kidney, the percussion over the lumbar region of the affected side would be dull, while if it were a desmoid the percussion sound would be normal. The dulness of the tumor or a full bladder could only be mistaken if the bladder was not carefully emptied of its contents or fluctuation not discovered. The same might be remarked to some extent about a large amount of feces in the colon.

If the tumor is in the lower part of the abdominal wall, possibly closely connected with the ilium and very large, the diagnosis becomes more difficult and the examination under an anesthetic would probably give the required result. When the tumor is in this region and becomes very large, its differentiation from uterine fibroids, solid tumors of the ovary or round ligament might become impossible, and exploratory incision becomes the proper procedure. A case of localized peritonitis, which originated during pregnancy in the left hypochondrium and simulated a desmoid in many respects, was only understood after aspiration and careful thermometric observation. It seems to me hardly possible that there could be any difficulty in differentiating between malignant tumors of the intestine or omentum and a desmoid.

An adherent displaced kidney might be taken for a tumor in the abdominal walls. But the form of the kidney, and resonance

over that portion of the lumbar region where the kidney was missing, and the muscular symptoms of which I have just spoken, would probably give the necessary information.

The sense of touch given by adipose tissue, whether as a lipoma of the omentum or subperitoneal or subcutaneous fatty tissue, is so very different from that of a desmoid that they could hardly be confounded with each other. Thus, also, an umbilical hernia containing a lipoma of the omentum would present a soft, lobulated condition, which is never the case in the desmoids.

A ventral or umbilical hernia could, if strangled, produce a tumor which is very hard, but the symptoms of strangulation and the outer appearance of the tumor, and other points in the history of the case, would leave no doubt as to its nature. Cysts of the urachus could be confounded with solid tumors only when small and when there was complete absence of fluctuation. Dermoids of the abdominal wall are rare and always occur at the navel, while, according to Labbé and Rémy, fibromata have never been found in that location. The treatment is extirpation, and the sooner this is done the better for the patient. While the tumors are still small and in a location where the peritoneum is not closely adherent to the deep fascia, extirpation without opening the peritoneum may be resorted to, and must be our aim, but it will rarely succeed. As a rule, however, extirpation with resection of the peritoneum will be, under careful antiseptic precautions, the safest by guarding against recurrence should the tumor prove to be sarcomatous. When large surfaces of denuded peritoneum are left after removal of the tumor, gangrene may result from want of sufficient blood-supply.

The *prognosis* of the non-malignant fibromata by removal is quite good. Billroth lost but two out of sixteen cases, and these were in the pre-antiseptic days of surgery. In Ledderhose's collection of one hundred cases sixteen per cent. died. Many of these cases were also operated upon before the days of antiseptic surgery.

The prognosis without extirpation in a malignant case is certainly bad, while in non-malignant cases it is, to say the least, doubtful, if not fatal, unless in such fortunate cases as Suadicani's or Reed's. Thus, also, will partial removal result disastrously, as Esmarch's second case would prove.

CARCINOMA.—Under this head we must distinguish those of primary and those of secondary origin. The latter do not concern us here; they are, for the most part, the growth by contiguity from intra-abdominal tumors, as from cancer of the stomach, gall-bladder, bowels, etc. The most frequent location for a primary carcinoma is the navel. There have been well-authenticated cases recorded of primary carcinoma of the skin of other parts of the abdomen. They are very rare and present nothing of special importance to distinguish them from cutaneous carcinoma of other portions of the body. Carcinomata of the navel have been found of as great interest as they have been rare and important. Fabricius von Hilden described and operated on a case as early as 1652.¹ I find the case often quoted, but it seems to me, from the drawing accompanying the observation, that it is probably a papilloma. The extreme rarity of primary tumors generally in this location is shown from the fact that Bérard² could report but three cases, while E. Küster has been able to add but five more in 1874, and O. Burkhart in 1889 reports twelve cases not published by the foregoing. Of all these cases, eighteen were probably some form of cancer, while the rest were papillomata (two) and dermoids (one). It seems to be doubtful in five of these cases whether they were primary, as no post-mortem examination was made. In the author's experience he has seen but one true epithelioma of the navel.

Secondary carcinomata of the navel are certainly very frequent and commonly follow cancer of the liver, bowel, or peritoneum. From what we would call a local predisposition to cancer the navel should be the seat of cancer more frequently. It contains a scar, frequently the remains of cylindrical (ductus omphalo-entericus) and flat (urachus) epithelium. It is frequently the seat of chronic eczema and long-continued irritation from uncleanness.

All forms of cancer have been described, from a scirrhus to a colloid cancer. The course of the disease is usually a rapidly fatal one on account of its proximity to the peritoneum, and the probability of its ulcerating into that cavity if it be an ulcerating cancer.

¹ Fabricius von Hilden, Observation lxii. Fünftes Hundert, 1652 (in possession of the author), 27.

² Dict. de Méd., vol. xxx., 1827.

According to some operators, secondary growths have been noticed in the axillary as well as in the inguinal glands and those of the retro-peritoneal space.

The *diagnosis*, when there is any doubt, will probably lie between a carcinoma of the proliferating kind and a granuloma or papilloma. Even here the microscope will sometimes have to decide. Those tumors which have a tendency to spread under the skin may certainly be considered under the malignant variety. If the tumor is a growth of early life, carcinoma may be excluded, and one of those forms of tumors spoken of above must be considered.

Concerning the *prognosis* after extirpation, much cannot be said from such an experience as is at present at our command.

The *treatment* would be early extirpation. There are no blood-vessels of any size that would have to be considered. An elliptical incision on both sides of the navel in the vertical direction, and complete removal in healthy tissue, including the peritoneum, seem to have been the aim of all operators since the antiseptic era. To leave the peritoneum, which is immediately adherent to the navel, would not be wise or even always practical. In my opinion a special examination of the umbilico-hepatic ligament and the urachus would be advisable as to their freedom from disease. Any adhesion to the omentum would be the best treated by removal of the adherent portions. The closure of the wound would be made by the methods now usually practised in all abdominal sections. In fat individuals it would probably be necessary to divide the skin above and below the navel so as to expose the navel proper.

TUMORS OF THE URACHUS.

Tumors of the urachus present themselves chiefly as cysts. I have been unable to find any record of primary malignant disease of the organ. A case of secondary colloid cancer of the urachus following cancer of the navel is related by Heu and Jaquin.¹ Cysts of the urachus have been understood to some extent only within the last few years, and chiefly through the agency of Hoffmann, Tait, W. Roser, and Wolff. There was a time when it was thought that cysts of the urachus would rarely, if ever, reach a

¹ Union Médicale, 1867, No. 112.

size sufficient to require the interference of the surgeon. Luschka was the first who predicted the probability of large cysts of the urachus, and that they would need operative interference.¹ This prediction was soon verified by Prof. Hoffmann.² He describes four large cysts which he proves to be cysts of the urachus. It is very likely that cysts of this character have been removed and called "parovarian cysts adherent to the anterior abdominal wall."

The urachus, the remains of that portion of the allantois remaining within the abdomen, is lined with flat, rounded epithelium which, according to Luschka, is surrounded by fibrous connective tissue and elastic fibres. The latter gradually change in the lower third into non-striated muscular tissue, are inserted into the detrusor urinæ, and may be looked upon as a prolongation of this muscle, as the lining epithelium may be looked upon as a continuation of the epithelium of the bladder. It is important to know this, as frequently the character of a tumor will not be understood except from these fundamental structures of the urachus. The urachus in the young adult is commonly pervious, unequal in its diameters, presenting the appearance as if it were knotted or had excrescences. Its perviousness usually ceases for a short distance from the bladder, and its entrance is shown by a small point of retraction of the mucous membrane at the fundus of that viscus. In old adults complete obliteration is very often attained.³ It happens that at the contracted portions of the canal adhesions of its surfaces take place, while the intervening portion expands into small sacs, often developing laterally and containing a small quantity of yellowish or brownish fluid. When these sacs expand into tumors, they may grow so much laterally as to appear to have a lateral origin instead of one in the median line.

As a rule, however, large cysts originate from the whole urachus, excepting those small portions situated at the navel and the bladder. The sizes of the cysts vary greatly, and may attain one sufficiently large to contain fifty litres of fluid.⁴ The contents of these large cysts are usually of a serous character, at times containing the

¹ Luschka, Virchow's Archiv, 1862, Bd. xxiii.

² Archiv für Heilkunde, Bd. xi.

³ Förster, Handbuch, Bd. xi. p. 531.

⁴ Hoffmann, Archiv für Heilkunde, Bd. xi. p. 373.

products of inflammation, pus, and fibrin. Lawson Tait, in his book on *Diseases of the Ovary*, describes several cases where the inflammatory condition was well advanced and contained "thirty pints of brown, thick fluid, with an abundance of flaky, yellow deposit consisting chiefly of pus mixed with large fibrinous masses." Frequently, owing to fatty degeneration of the tissue, small lumps of fat are discovered in the fluid. Corpora amylacea are said to have been discovered by Luschka. When there is any communication between the bladder and urachus, urine will get into the cyst, and its contents then are decomposed urine. At times it will occur that cyst fluid escapes through the bladder, making an alternate increase and decrease in the size of the tumor; thus, in twelve cases described by Tait, three were connected with the bladder in this way.

Cysts have been known to be produced where there was an obstruction to the urine in its normal passage. The urine would gradually be forced into the urachus, and even escape from the navel.

When the tumor becomes large, the cyst wall sometimes fills up the whole pelvic cavity, stripping up the peritoneum on the posterior wall of the bladder and anterior surface of the uterus and broad ligament; anteriorly and above it has been known to strip up the peritoneum to the border of the ribs.¹

The *history* of these cases is that of a gradual and slow growth; sometimes, however, it seems to have been awakened to new energy and takes on a rapid growth. Thus, in a case of my own, the patient had noticed a tumor of small size for about ten years, when it suddenly took on rapid growth during a pregnancy, and contained five litres of fluid by the third month. Incision and drainage cured her. She miscarried two weeks after the operation. This miscarrying after the operation is by no means rare (Tait and Roser). This very slow growth was noticed in one of Hoffmann's cases.

The *diagnosis* is by no means easy, unless the tumor is small and its intimate connection discovered with the abdominal wall. When the patient has a relaxed abdominal wall, or is under the influence of an anesthetic, its posterior wall can be felt, as also its

¹ Tait, Journal of the British Gynecological Society, November 6, 1888.

intimate connection with the navel. This last symptom is of great importance. In a small tumor with a thick wall there might be difficulty in distinguishing fluctuation, and, if so, a solid tumor of the abdominal walls might be thought of. Here the aspirating-needle alone would give the desired information. When the cyst has reached a medium size, the diagnosis is still possible by physical exploration. Its differentiation will chiefly be from that of a parovarian cyst, ascites, chronic (tubercular) peritonitis, localized peritonitis with a serous exudate under the anterior abdominal wall, and an over-distended bladder. The usual mobility of a cyst of the ovary, and the rise and fall of the abdominal wall by the interposition of intestines between the tumor and abdominal walls during deep inspiration and expiration, will usually exclude this form of tumor. This holds good only so long as there are no adhesions between tumor and abdominal wall. In my own case this symptom was so entirely absent that I could readily diagnose between a non-adherent parovarian tumor and a cyst of the urachus. In ascites the change in the level of the fluid is pathognomonic. The means of differentiating between a cyst in question and the condition of a localized peritonitis with serous effusion, when it occurs in this location, are very meagre. Fever does not hold good in the one, when there may be an inflamed cyst in the other. Subjectively pain may occur in both. It is said that in a peritonitic exudate gradual increase of dulness from the intestinal border to the tumor proper is very marked, owing to the adherent intestine, while in a cystic tumor the dulness is very abrupt.

In tubercular peritonitis, where the intestines are bound down by adhesions and fluid rises above them, we must rely entirely upon the probability of finding nodular masses in the abdomen, or upon exploratory incision. For those who think it proper to aspirate, the finding of flat, rounded epithelium of the bladder variety, as well as the discovery of such elements as the urine might contain, would give a valuable clue to the diagnosis. This leads us to the possibility of its being confounded with a distended bladder; in the male the catheter, and in the female this and vaginal examination, would settle that portion of the question. But even at an operation or an exploratory incision the nature of the tumor may be questioned. Here the excision of a portion of the cyst wall and its histological character will tell the story.

Portions of the lower part of the cyst should be removed for this purpose; here we should expect its being lined with flat epithelium and surrounded by non-striated muscular fibre. When there remains a fistulous opening at the umbilicus and cyst contents escape by that opening, or when the cyst was known to empty by the bladder, the diagnosis is made with absolute certainty. When the tumor has become very large, there is no chance for differentiating it from other large cysts except by exploratory incision.

The *treatment* of all these cases is by operation. In small tumors complete extirpation of the sac would be the proper mode of procedure. Its connection with the cellular tissue is very loose and its separation easy. The peritoneum is probably not so devoid of bloodvessels as to become gangrenous. When the tumor has reached a large size, however, and a large piece of peritoneum would become stripped from its underlying tissue, gangrene is likely to result. This was Mr. Tait's experience.

In these cases, then, the proper thing is to incise the tumor and drain. The most disastrous thing for all such operations, whether it be a cyst, a chronic abscess, or fistula, is too small an incision. The incision should include all the tissue between the navel and pubes, if the cyst be any way large. To keep this open properly it is necessary to stitch the cyst wall to the skin, and the sac should be filled with iodoform gauze after thoroughly drying it by rubbing with sterilized napkins. Such a dressing I have left in for ten or twelve days without a change, and the cyst was obliterated in six weeks. The scar became a very strong one, and no hernia followed.

If the cyst is complicated by an opening into the bladder, it would probably be advisable to denude the tissue around it and unite the edges, or else split the tissue between bladder and cyst wall and unite the edges with fine silk or catgut. If this were not done, a urinary fistula will result (Tait and Roser). It is important that complete obliteration should take place, otherwise a chronic fistula will remain, which will resist all forms of treatment short of complete extirpation. Such a patient, operated upon in England, was sent to my office by my friend Dr. Fewsmith. The odor from the patient's sore was indescribable and made life a torment to himself as well as his surroundings. To prevent such an accident it might be wise to swab the cavity with a five per

cent. solution of chloride of zinc, if it did not show an early attempt to granulate and contract. *Fistulæ* of such cysts at the umbilicus should not be treated by ligature, cautery, or suture, but by complete division of the tissue from the umbilicus down to the lower end of the fistulous cyst, or even down to the bladder, as the case may be. If there be an opening into the bladder, this also must be closed, as described above.

TUMORS OF THE ROUND LIGAMENT.

These interest us only so far as they occur in the canal from the internal to the external opening. We must speak of them because of the importance of distinguishing these tumors generally in this region. There are three forms met with in the organ: the cystic, the fibro-myoma, and the sarcoma.

The cystic is not often met with. An interesting case presented itself at St. Barnabas' Hospital, of Newark, on September 11, 1891:

CASE III.—A. L., aged thirty-two years, Hungarian, married, no children, has been complaining for three years of a tumor in the left side which occasionally gave her much pain. Physical examination revealed a tumor, of the size of a hen's egg, in the left inguinal region and in the position in which the round ligament is situated. It is freely movable in its small diameter, but not in the direction of its long diameter—*i. e.*, the course of the round ligament. It is smooth except at its upper end, where there is a slightly nodular appearance. It is fluctuating. There is no impulse on coughing. Aspiration removed clear yellow serum. *Diagnosis:* Probable cyst of the round ligament. Tumor was aspirated several times, but always returned. On February 20, 1892, she was admitted, and the whole cyst laid open from the upper portion of the vulva to the internal abdominal ring. At the latter place there were several small cysts. From the appearance of the tissue it was evident that it had developed in the muscular tissue of the round ligament.

I have seen a similar case described somewhere, but am unable to lay my hands on it at present.¹

¹ Since this has been in print I have received an article by J. Felix Etienne Münch, 1892, describing a large number of cases under the title of *Hydrocele Muliebris*.

Fibro-myoma and fibroma are found at times in this region. They are of slow growth, smooth to the touch, and painless, rarely multilobular, and of elongated form. When small, they are movable, and when large become fixed by forcing themselves into the tissue around them. They are distinguished from desmoids of the fascia occurring in this region by their mobility when small; when large, the differentiation becomes very difficult. Not infrequently the uterus contains myomata at the same time. They must also be distinguished from irreducible hernia, whether in the form of an omental lipoma, hernia of the ovary, epiplocele, sarcoma, or cysts. The history and the softness to the touch will be sufficient to differentiate the former two from the solid fibroma or fibro-myoma. If an ovary be in the hernial sac, the peculiar pain on pressure, the absence of an ovary on the corresponding side in the pelvis, and the stationary size of the tumor, will be found. The cysts will give early fluctuation, and thus are distinguished from the solid tumors.

Sarcomata of this portion of the round ligament are of very rapid growth, frequently cystic, usually take on an elongated form, and involve the large labia, are exceedingly malignant, metastasis occurring early in the abdomen and lungs. Through the kindness of Dr. Servus, of New Providence, N. J., I saw a young single woman with a large tumor, which started at the internal inguinal ring and took in the whole vulva down to the commissure. It had been growing for four months. The tumor was so large as to cover the whole external genitals, and measured fifty-five centimetres in its greatest diameter. It was semi-fluctuating and slightly fixed. Diagnosis, cysto-sarcoma of round ligament. Its removal necessitated an incision of forty-five centimetres, and proved it to be a cysto-sarcoma of the round ligament. She left the hospital in about two weeks, apparently well. Her doctor reported that she began to have a return in about six weeks, and died from sarcoma of the lung in less than four months.

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DISCUSSION.

DR. ROBERT T. MORRIS, of New York.—Mr. President: I was very much pleased with Dr. Ill's paper, and simply desire to refer to one point, and that is in reference to the treatment of cysts of the patent urachus with caustics, or the treatment of cysts of the abdominal wall due to patent urachus by using strong caustics. These cysts generally are typically embryonal in character and construction, and the more caustics we use the more inflammation we set up about the region of the cyst. In two cases in which I have operated I have found marked adhesions between the peritoneum and the abdominal wall and intestines or omentum in the vicinity, as a result of "curing" these patent urachus cysts by caustic injections. It is a great mistake and a point that is altogether overlooked by the practitioner who does not realize the true character of the growth. I think those of us who wish to refer to this subject of tumors of the abdominal wall will do well in the future to consult Dr. Ill's paper in the *Transactions*. He has covered the ground in an elaborate way.

DR. L. S. MCMURTRY, of Louisville.—I think the Association is under obligations, and the profession also, to Dr. Ill for grouping together tumors of the abdominal wall and making a study of them in one paper. It is a subject that is very interesting, and until operative work became so common in and about the abdomen these tumors were very generally misunderstood. I only wish to add one thing to Dr. Ill's paper, namely, one of the tumors to be found about the abdominal wall. Perhaps Dr. Ill has alluded to it in his paper, as I observe he did not read all of his manuscript. I exhibited a pathological specimen here last evening of scirrhus cancer of the umbilicus, which was a typical illustration of that condition. In conversation with the Fellows, I have found only one gentleman who has seen a similar case—Dr. Ross, of Toronto. I simply mention it in this connection as one of the tumors that we are liable to meet in the abdominal wall. This was treated by thorough excision, *i. e.*, by taking out

a section of the abdominal wall. The patient has made, so far as known, a complete recovery.

DR. C. A. L. REED, of Cincinnati.—When I read the announcement of Dr. Ill's paper, and in connection with it read his excellent contribution on this subject which appeared in one of the earlier volumes of our *Transactions*, it occurred to me he would come before us and thresh over some old straw. Dr. Ill, however, has not duplicated any of the matter contained in his previous contributions, and therefore his present paper is a well-timed and deserving supplement to his other contributions.

I was in a position to discuss his first contribution on this subject. I had had some experience along the line mapped out in his former paper, but I am entirely at a loss to discuss his essay on the present occasion from the standpoint of personal experience. I have seen a few lipomata, particularly of the subcutaneous variety, and I have in my possession a photograph of a very striking specimen of this sort, the photograph of the tumor having been taken in connection with the patient, who was operated upon by Dr. Dandridge at the Cincinnati Hospital, the tumor weighing ninety pounds. Those of deeper origin, which spring from beneath the fascia, I have not observed unless it was perhaps in an unconfirmed case. I was once called in consultation by a surgeon of considerable reputation, and found preparations made for an ovariectomy. There was very extensive abdominal enlargement, but there was an absence of the fluctuation of cystomata and also of that semi-fluctuation which we find in lipomata of subcutaneous origin and location. We were in the hands of an ultra-conservative on that occasion, and the attending physician insisted that before an exploratory incision were attempted, an exploratory puncture be made. Puncture was employed to the depth of about five inches, with a perfectly dry tap. That scared off the ultra-conservative physician referred to, who objected to any operation whatever, and carried the family with him; hence nothing was done. In thinking that case over with all of its peculiarities, it remains in my mind as one of the deep lipomatous growths located beneath the fascia. There were no ovarian symptoms, no uterine symptoms, and manifestly the growth from its history and point of development originated in the abdominal wall.

As to the method of procedure, I seriously question the expediency of cutting down upon and through these growths as a preliminary step in the operation, as I understood it to be recommended. We may be mistaken in diagnosis, and a bold stroke such as indicated might

lead us into a hernia with disastrous results. I prefer making an elliptical incision, just as I have done in dealing both with tumors of the abdominal wall and with herniæ. In both instances a safe approach to the tumor is effected, and all the conditions placed under safe control before anything further is attempted.

Dr. Ill has alluded, with characteristic precision, to the question of differential diagnosis in these growths, and I am glad that he has elaborated this subject so amply, yet from a practical standpoint I question the necessity of wasting time in attempting to determine the exact variety of these tumors. Unless they are the smaller lipomatous growths, I believe they all need operation. Their rapid development indicates the possibility of malignant degeneration, and they should be condemned on suspicion.

I was not a little impressed with the suggestion of treating cysts of the urachus by caustics. I have never seen a distinct cyst of the urachus in the sense of an isolated sac. I have seen several cases of distinctly dilated urachi with which I did not meddle, because they did not appear to offer any symptoms. If, however, we are dealing with a large cyst of the urachus, we have an extensive surface covered over with epithelium, and in the treatment of that sac and for the purpose of securing its obliteration we are compelled to destroy all of that epithelium. Where we leave epithelium on proximal surfaces adhesion does not take place; hence, in the treatment by caustics, it occurs to me these cysts should be treated in the open way, so that the interior of the cavity can be placed at command, and the utmost care taken to destroy all the epithelium that may be presented.

I simply join with what I believe to be expressed by other Fellows of the Association, that we feel a sense of personal obligation to Dr. Ill for his research and industry in this direction, and we trust that his two papers may appear conjointly and made more accessible to the general profession than in separated volumes of our *Transactions*.

DR. J. H. CARSTENS, of Detroit.—Independently of a few small lipomata, I have never seen in my own practice any of the tumors described by Dr. Ill. I have seen two cases, however, in consultation with another physician: one a melanotic sarcoma of the umbilicus, almost like the case exhibited by Dr. McMurtry last night, except that it grew rapidly. It was removed, but still recurred in a short time and destroyed the patient. The other was a case where there had been a few years before some inflammation and pain in the right side, and a tumor developed about the size of a pigeon's egg on that side. It had caused no trouble for years, but of a sudden the man

received an injury, whereupon it became inflamed and sore. He sought a surgeon, who operated and found a small encysted tumor, but no one could imagine what that tumor contained. It contained a number of gall-stones, and was entirely separated from the abdominal wall. It evidently was the result of an inflammation and adhesion of the gall-bladder anteriorly, the formation of stone, this gradually working through the abdominal wall, just as Dr. Ill has described. The opening was finally closed; the gall-stones became encysted, lying there for years; they were irritated by the injury, and removed in the way described. I think this case should be recorded in connection with the paper; hence I report it.

DR. W. P. MANTON, of Detroit.—In my paper to be read to-morrow morning I intended to report a case of fibroid tumor of the abdominal wall. I have seen several cases of dilated urachus and one or two small lipomata. This is the only fibroid of the abdominal wall that I have ever met with, and it presented several points of interest, so that I think it will be well to report it now in connection with Dr. Ill's paper, and omit it to-morrow morning. (See Dr. Manton's paper.)

The patient was a young and delicate-looking Swedish woman, who had entered the Northern Michigan Asylum some three years before (1887), suffering from puerperal insanity. The records state that she was the wife of a laborer, and that three weeks previous to her admission she had given birth to a child. Her mental ailment had come on immediately following delivery. In March, 1890, the attendants discovered that the patient's abdomen was enlarging, and examination revealed a tumor which extended laterally from near the median line to the right wing of the pelvis, and upward from the pubes to just below the umbilicus. It was noted that the growth was hard, non-fluctuating, and apparently pedunculated. Three weeks later, the record states, the growth had increased in size, and had become so noticeable through the clothing that it gave the patient much concern to conceal its existence. By April the growth had extended upward to the lower margin of the ribs and across the median line toward the left, and "stood upward from the surface with the prominence of a gravid uterus." Fluctuation could not be made out, but it was thought that, from the rapid increase in the size of the tumor, it was probably an ovarian cyst. The patient fancied herself pregnant, and was rather pleased at the state of affairs. At the request of Dr. J. D. Munson, Medical Superintendent, I operated for the removal of the growth. I cut down and found a tumor outside of the peritoneum, although it dipped down so into the pelvis that it actually impinged upon the layer

of peritoneum between it and the uterus, so that I doubt very much whether a careful vaginal examination would have revealed the nature of the growth. The tumor was easily shelled out of its bed; there was, however, considerable hemorrhage from a number of large vessels beneath the skin. The patient made a good recovery. The delusion as to her pregnant condition disappeared with the removal of the growth.

DR. ROBERT T. MORRIS, of New York.—I would like to say to the Fellows that when they have specimens of morbid growths from the umbilicus they will do well to examine them for mesenteric remains. Two years ago, in Berlin, I presented a paper, published in the *Transactions of the Tenth International Medical Congress*, in which I propounded the theory that in almost all cases of malignant growths from the umbilicus we find also mesenteric remains. If observers could furnish data bearing upon the subject, it would be of value to us.

DR. A. H. CORDIER, of Kansas City.—I believe there is one class of tumors occurring occasionally that the Doctor did not mention, namely, a cystic condition of the round ligament. While this is not strictly a parietal tumor, yet it is as much so as the urachal tumors. I have seen one case of the kind in which the sheath of the round ligament was distended to the size of a large cocoanut. It was removed by abdominal section, by simply tapping the growth through an abdominal incision, letting out the fluid, which was very thin, and cutting off the thin cyst at the entrance of the ligament into the abdominal walls. Wells has reported two solid tumors of the round ligament, both (like my case) occurring on or in the ligament of the right side.

DR. A. VANDER VEER, of Albany.—The paper of Dr. Ill belongs to a class which perhaps come under the head of labor-saving papers for the busy practitioner. When he reaches a difficult case for diagnosis, he thinks, perhaps, there is not sufficient time to look over the literature of the subject thoroughly, yet has in his mind some such work as this. Dr. Ill takes up the subject absolutely unbiased, does not attempt to carry out certain preconceived ideas, but gives us practical, conclusive instructions in making the diagnosis in a class of tumors that are exceedingly rare and obscure. I speak of this from a practical experience. Two years ago I had occasion to write on retro-peritoneal tumors, a subject akin to this. In looking over the subject and searching the journals and authors, I came in contact with

a case bearing upon the subject ; but, as Dr. Ill has covered the ground, I will not dwell upon it.

My own practical experience has not been great in tumors of the abdominal walls, but the few cases I have seen have impressed me very decidedly. One case, which I was called to see some two years ago, and in which I afterward operated and reported the case, I will refer to now. The cyst was connected with the urachus in a young woman, eighteen years of age, which had given her great annoyance from the age of fourteen, particularly during the past two years of her life, from a discharge and disagreeable odor present. She was treated by several physicians with all known forms of injection, carbolic acid, etc. I laid open the cyst thoroughly well, dissected down near the fundus of the bladder and packed with iodoform gauze, as described by Dr. Ill, and had the satisfaction of seeing her cured. I cut so near to the peritoneum that I was fearful afterward lest hernia would occur. I have had the opportunity of seeing her lately, and there is no appearance of hernia.

Another case that I was called to see in consultation with Dr. Townsend, of Albany, proved to be a dilated ureter. Dr. Townsend was not sure as to the nature of the tumor, which was located on the right side. It fluctuated distinctly, but did not give the patient much pain. The woman was twenty years of age and unmarried. I was in doubt at first as to its nature, the diagnosis lying between a parovarian cyst or possibly a dilated ureter. There was an absence of some of the symptoms of parovarian cyst, nor could we isolate it from the body of the uterus, as it seemed fixed at that point ; but the fluctuation was very distinct. Dr. Townsend emptied the bladder and finally decided to resort to the use of the aspirator. He drew off about six ounces of fluid, which presented all the characteristic conditions of urine. Afterward Dr. Townsend introduced a drainage-tube, and the patient ultimately recovered. The case was strange to us all at the time.

In regard to tumors of the abdominal wall proper, some three years ago I was called to see a prominent business man in Albany, who had a tumor located in the right inguinal region that extended down into the scrotum, but so closely associated with the abdominal wall that I could not define it sufficiently to separate it from the inguinal canal. The history was a tumor growing from above downward ; there was no impulse on coughing, and no evidence of true hernia ; the tumor had grown to great size, and had the characteristic symptoms referred to by Dr. Ill. The patient had indigestion, a driving pain, and was losing flesh to a degree that prevented him from going on with his

business. He was examined by the family physician and two others. The former introduced a small trocar, but obtained nothing. After that I saw him, and looked upon his case as one of omental hernia. We placed him in a position with the hips elevated to test the effect of gravitation. This made no impression. He finally consented to an exploration. I began my operation with the expectation of finding an omental hernia, and with the further intention of removing it and the sac above. I cut down to the growth and enucleated it from each side. The tumor went far up in the inguinal canal. It was separated without much difficulty, and proved to be one of the fatty hernial tumors like those that Dr. Ill has described.

Another case is that of Mr. T. B., of Albany, a business man, who presented himself with a small tumor situated to the left of the umbilicus, of dark appearance. I believed it to be a melanotic tumor. It was plainly situated in the walls of the abdomen. I made a clean dissection, but it reappeared very small, like a split pea; caustic then was applied thoroughly, whereupon it healed, and so remained for a few months. The case then passed into the hands of another surgeon. It proved to be one of melanotic sarcoma. There was no portion of the body that was not infiltrated. I made a thorough dissection, went down deep through the muscle, yet the tumor returned.

Still another case of recurrent fibroid tumor of the abdominal wall is as follows: Mr. W. F. H., aged forty-two years, school-teacher by occupation. Family history good. Says that in February, 1871, he first noticed a small lump in the skin upon the left side of the abdomen. It was of a dark purple color, and the centre was streaked with deep purple rays. This continued to grow, but was removed by Dr. I. J. Moxley, of South Granville, N. Y., July 25, 1871. Primary hemorrhage occurred after the patient had ridden a distance of five miles. The wound was opened up and not brought together again, but allowed to heal by granulation, this covering a period of three months. From that time on he continued his work as a teacher during the winter and a farmer during the summer; remained in fairly good health; but in the spring of 1878 noticed that there were two or three small lumps forming around the old cicatrix. These grew somewhat slowly, but in August, 1882, had increased to such a size that his clothing chafed them and gave him much distress. The mass presented about the size of his two fists, described as looking about the color of a ripe tomato. In January, 1883, he visited a cancer doctor at Rome, N. Y., who, after an examination, stated that he could do nothing for him. He also saw Dr. Flandrau, of Rome,

who advised an operation, and upon returning home his family physician, Dr. Gillis, took him to Dr. Hinkston, of Montreal, where the tumor was successfully removed. The wound made by the operation was eleven inches long and seven inches wide. About a week after the operation Dr. Hinkston grafted skin from the right arm, but this was not a success. However, the wound improved and was healed in about four months. In the spring of 1885 he noticed a small lump appearing at the right side of the old wound, which grew slowly until March, 1886, when Dr. Jason Cooper, of Trout River, P. I., applied a poultice to destroy the growth. After continued poulticing a large part of the tumor sloughed off, but not entirely. The patient describes much suffering from the application of this poultice. In the summer of 1887 another lump began to form somewhat above and a little to the centre of the main cicatrix, and in November of that year began growing rapidly. This presented a peculiar surface. It grew in the shape of a toadstool, the outer surface being raw and bleeding frequently. In two of these bleedings he lost blood sufficient to cause syncope. In March, 1888, Dr. Pearl, of Bangor, who had treated him on different occasions to control the bleeding, cut out the remainder of the tumor, together with the larger growth, making a wound six by eight inches. He was out of doors within four weeks, and the wound healed in about four months. About the time that his wound was healed he felt a sort of stiffness of the muscles of the right side of the navel. This feeling increased, and another lump became visible. This was very apparent in March, 1889, and in August Dr. Pearl injected cocaine and removed it, navel and all. This wound was about two and one-half by three inches, and took three months to heal. In March, 1890, another lump began to show at the upper side of the old scar. This grew gradually until August, when Dr. Pearl, assisted by Dr. Bradford, and while the patient was under the influence of chloroform, dissected it out thoroughly, but the operation was a difficult one. Before this wound was thoroughly healed another small lump was found on the skin on the left side and below the previous scars. Dr. Pearl again injected cocaine and removed it. When the Doctor had operated before, April 14, 1890, he noticed a small growth just below the ensiform cartilage, but did not think it safe to remove it. This gradually increased, and when I saw him, July 30, 1891, it was about the size of a turkey's egg, had deep attachments, and rested just below the sternum. Patient came to the Albany Hospital, where I operated July 31, 1891, making a careful dissection down through the abdominal walls to, but not including, the peritoneum, then tied, bringing down two parallel pieces of skin from

the under surface of the ribs, doing a plastic operation, and closed the surfaces. The wound healed kindly; the patient left the hospital August 7, 1891; has made a good recovery, and remains well up to the present time. In giving me more the particulars of his case, he states that in the spring of 1888 a lump appeared at the upper side of the old scar and grew rapidly for a short time, looked red and inflamed, was sore and pained him much. He poulticed it with figs steeped in new milk, and in about two months' time it disappeared. After the operation in March, 1889, when the wound was nearly healed, another lump began growing on his right breast. When about the size of a large bean he showed it to Dr. Pearl, who suggested that they keep watch of it, and if it continued to grow he would remove it; but this one disappeared without any treatment whatever.

DR. ILL (closing the discussion).—Dr. McMurtry has remarked as to the extreme rarity of carcinoma of the navel. I can say that I have collected twenty-one cases of carcinoma of the umbilicus, from which I have excluded three as probably of another nature, which makes eighteen. This collection extends so far back as 1827. I have seen but one case. It is extremely rare.

As to Dr. Reed's remarks, it seems to me that the differential diagnosis ought always to be attempted. I do not believe that we ought to cut down upon a tumor without having exhausted all means for a diagnosis. Those who are teachers are under obligations to their students to endeavor to make such a differential diagnosis. I do not say we can always reach it, but it is better to do so. As to the incision that Dr. Reed speaks of, I do not think he means it for a simple lipoma or a fatty hernia. In the portion of the paper relating to tumors of the umbilicus I have suggested an elliptical excision as the best. For a fatty hernia a simple, plain incision, extended to any size you like, will give you all the room necessary for the removal of such a growth.

There seems to be a little misapprehension as to how the free fibro-lipoma of Virchow is formed in the abdominal cavity. (Here Dr. Ill explained by means of the blackboard how this tumor is formed.) As it grows it pushes the peritoneum in front of it, and the constant movement of the intestines up and down will gradually produce a neck until the tumor is torn off.

The President has spoken of the melanotic tumor of the abdominal skin. I have in the course of my paper stated the fact that sarcomata of the skin of the abdomen are usually melanotic, and their return after extirpation is almost inevitable if of a melanotic type. I desire to thank the Fellows for the kind reception accorded my paper.