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blood and a quantity of substance looking like partially organized fibrin was drawn out, evidently from the lung substance." This material was found on microscopic examination to be composed of masses of sarcoma cells. The autopsy confirmed the diagnosis.

(4) Girvin and Steele have recently reported a case of "carcinoma of the pleura, diagnosed by tissue removed in tapping."

In conclusion, I desire to thank Dr. Osler for allowing me to report this case, and Dr. Arthur J. Wolfe, of Hartford, for the photomicrograph which accompanies this article.

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A CASE OF PRIMARY ADENO-CARCINOMA OF THE FALLOPIAN TUBE.

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New growths of the Fallopian tube were seldom mentioned by the older writers, and by some, primary tumors were believed not to exist. The descriptions of the early cases are so meagre that in most instances there is not sufficient evidence that the growth was not due to a metastasis from a tumor arising elsewhere. The first undoubted case of primary cancer was described by Orthmann[1] in 1888, and since then thirty-four additional cases have been recorded.

The tumor in most instances originates in the epithelium covering the folds of the mucosa and has, therefore, a well marked papillary structure. Friedenheim,[2] however, has described a case in which the tubal folds are practically normal, while the muscular coats are infiltrated with carcinomatous masses. This growth, as the writer suggests, probably originated in the gland-like structures, sometimes found in the tube walls.

Most observers are of the opinion that a close relationship exists between the development of the carcinoma and the presence of a chronic inflammatory process. It seems probable that this is an important predisposing factor, in many cases the characteristic changes resulting from an old inflammation were demonstrable and in some the opposite tube was converted into a sac containing serous or purulent fluid. The history of sterility so generally obtained and often definite attacks of pelvic inflammation tend to support this view.

Alban Doran[3] believes that carcinoma is sometimes due to malignant changes in a simple papilloma, which itself may be traced to inflammatory disease. The case reported by Kaltenbach[4] and the first case of Fabricius[5] possibly belong to this group.

Only a brief history of the present case could be obtained, and is as follows:

Case No. 576, aged 63. Admitted to Dr. Kelly's private sanatorium March, 1898. Complaint, sanious vaginal discharge, elevation of temperature.

The patient had had four normal labors and had enjoyed perfect health until the summer before admission, when she suffered from an attack of typhoid fever, after which she noticed an almost constant blood-tinged vaginal discharge, and was subject to frequent rises of temperature. Examination under an anesthetic revealed an irregular mass about the size of a mandarin on the left side of the uterus. The tumor was of rather soft consistency and was adherent. The right tube and ovary were apparently normal. The uterus was small and on curetting no tissue was removed. Pyosalpinx was diagnosticated and operation advised.

Operation.—Abdominal hysterectomy, right salpingectomy, left salpingo-oophorectomy. The right ovary, which was small and perfectly normal, was left in situ. The uterus, right tube and left tubo-ovarian mass were removed without difficulty, but in separating some widespread adhesions which surrounded the mass on the left side, the sigmoid was at one point torn through to the mucosa. This rent was repaired with a mattress suture of catgut.

The patient made an uneventful recovery.

Gyn. Path. No. 2376. The specimen consists of the uterus, the right tube and a left tubo-ovarian mass. The uterus is small and free from adhesions. Its mucosa is from

[1] Orthmann: Zeitschrift für Geburtsh. u. Gyn. Bd. xv, 1888.

[2] Friedenheim: Berliner klin. Woch., No. 25, 1899.

[3] Doran: A System of Medicine, Albutt & Playfair. Trans. of the London Obstet. Soc., vol. xl, 1898.

[4] Kaltenbach: Centralblatt, f. Gyn., 1889, p. 74.

[5] Fabricius: Wiener klin. Woch., 1899, No. 49.

one to two millimetres thick, and apart from a slight superficial injection, appears normal. The right tube presents a few light adhesions, but is otherwise normal.

The uterine end of the left tube for a distance of three centimetres is moderately dilated and cystic, averaging about one centimetre in thickness. It then suddenly expands into a large cylindrical mass eleven centimetres long, three and one-half centimetres in diameter. This mass is of a pinkish or grayish color, covered with adhesions and somewhat yielding to the touch. The fimbriated end of the tube is firmly bound down to the ovary. The ovary is 5 x 4 x 3.5 centimetres in size and contains cysts from one to two centimetres in diameter. It is also enveloped in adhesions. The broad ligament is thickened and infiltrated. On cutting open the tube in its long axis a greatly distended canal is found, which is filled with a granular friable mass. This is not attached on all sides, but springs chiefly from the outer third and under surface of the tube, and the remainder of the tube wall forms a thin smooth capsule around the mass. On closer examination of the tumor it is found to consist of finely branched papillary outgrowths which, to a great extent, have coalesced, forming a more or less homogeneous mass.

The fimbriated end of the tube has been replaced by the neoplasm, and from it a papillary excrescence projects into a small cyst cavity in the ovary.

Histological examination.—The uterus and right tube are normal.

Sections from the margins of the tumor occupying the left tube show in the earliest portions some swelling of the epithelial cells and a tendency to become heaped up into little folds. Further on we see branching papillary outgrowths having a stroma composed of vascular connective tissue and covered with several layers of epithelium. In the multiplication of the epithelium, small gland-like spaces have here and there been enclosed. In most places the epithelial proliferation has been so great that the papillary outgrowths have become fused and the sections present masses of epithelium containing round and oval gland-like spaces, while scattered here and there throughout the field are longitudinal and transverse sections of stems of stroma (Fig. 2).

The epithelial cells on the whole are fairly uniform in size. The deepest layer is composed of low columnar cells, while the superimposed cells are polymorphous, becoming flatter on the surface. The gland-like inclusions are lined with cuboidal or flattened cells. The nuclei are large, oval or round, and have taken a somewhat deep diffuse stain. Mitotic figures are numerous and show various irregular forms. In favorable sections the papillary masses are seen to spring directly from the inner surface of the tube wall, corresponding to the folds of the mucosa; and at one or two points normal folds may be traced for a short distance, then merge into the tumor. In places the growth extends a short distance into the muscular coat in the form of solid nests of epithelium, or as small glands lined with one or more layers of cells (Fig. 3).

The portion of the tube invaded by the growth in places shows considerable leucocytic infiltration, and the advancing margin of the tumor is generally bounded by a zone of round cells. The remainder of the tube is practically free from infiltration and presents no evidence of an old inflammation. The growth has invaded the ovarian stroma immediately adjacent, and the cyst-like spaces with which the tube communicates are lined in part with two or three layers of tumor cells. The other small cysts are merely dilated follicles and the stroma is normal. This tumor resembles in its finer structure the carcinomata of the uterine body, although its papillary formation is somewhat more distinctive than in most tumors of the uterus. This may be attributed to the fact that in the tube the outgrowths spring from the branched folds of the mucosa. On the other hand, inasmuch as glands are not normally found in the tubal mucosa and the glands invading the stroma are therefore entirely due to dipping down of the surface epithelium, the invasion is apt to be less general than in carcinoma of the uterus.

That this tumor is primarily tubal is evident in view of the following facts: ,

(1) The uterus is normal.

(2) The tube is large as compared with the ovary: ovarian carcinomata grow rapidly and attain considerable size before extension occurs.

(3) There is a definite relation between the papillary masses and the tubal folds, while the ovary merely shows invasion of parts adjacent to the tube and contains no papillary excrescences, excepting those projecting from the end of the tube.

(4) The mucosa of the tube is the site of the neoplasm, the invasion of the musculature being due to extension outward from the mucosa. In carcinoma of the tube, secondary to the ovary, the growth usually extends from the peritoneal coat inward and the canal may be normal or constricted, not dilated.

For more than a year after the operation the patient enjoyed excellent health. Then, however, she began to suffer from a feeling of discomfort in the lower abdomen, and as this persisted, an exploratory section was made in April, 1900, about two years after the first operation. A small oval mass about the size of an olive was found at the base of the left broad ligament, and a nodule the size of a small bean on the posterior surface of the bladder. These were dissected out, but several minute deposits infiltrating the pelvic peritoneum could not be removed. On histological examination the nodules removed proved to have the same structure as the primary growth. At the present time, a year after the second operation, the patient appears to be in good health.

Symptomatology.—The earliest manifestation of the presence of the disease is usually, a watery vaginal discharge, later becoming sanious. Hemorrhage is a variable sign: in five cases there was metrorrhagia, and in two others the menstrual flow was increased. Pain was present in the majority of cases, sometimes occurring before the appearance of the vaginal discharge, but more often later, and

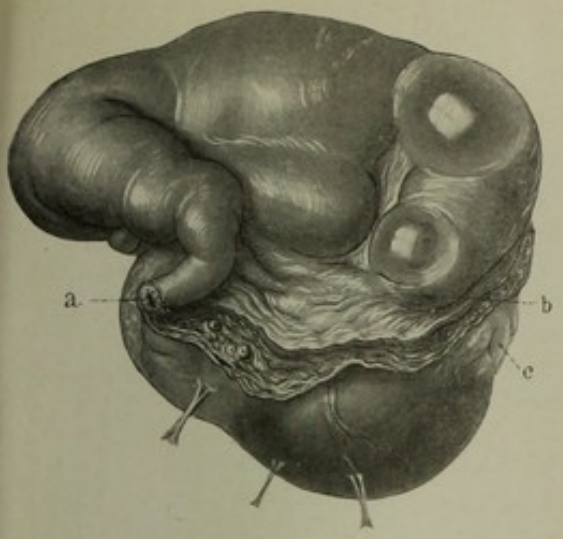

FIG. 1.—PRIMARY CARCINOMA OF THE TUBE. (Natural size.)—*a* is the proximal end of the tube and *b* the occluded fimbriated extremity. Near the uterus the tube is nearly normal in size, but rapidly enlarges until near the fimbriated extremity, it is 3 centimetres in diameter. At *c* are two subperitoneal cysts. The ovary *c*, contains a small cyst with dark colored walls. Attached to the under surface of the ovary are several adhesions.

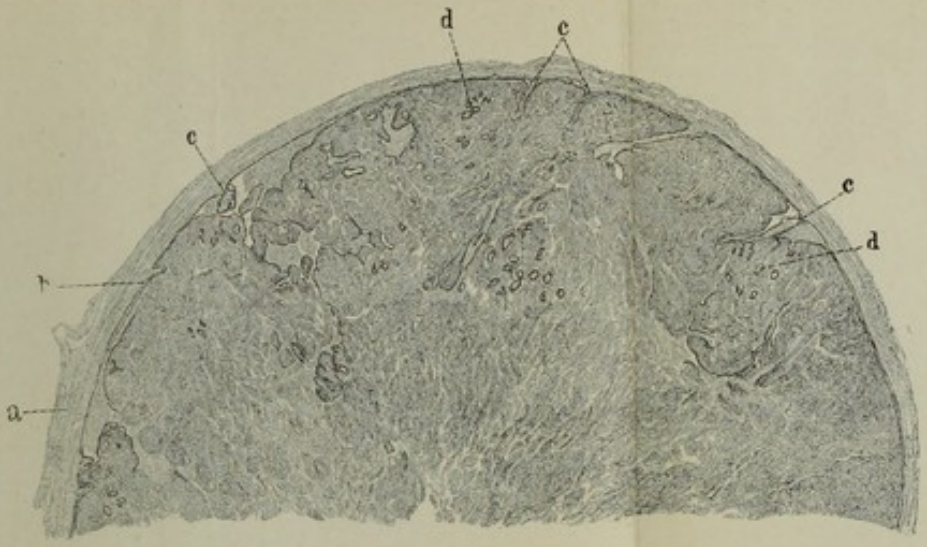

FIG. 2. TRANSVERSE SECTION THROUGH UPPER HALF OF THE CARCINOMATOUS TUBE. (6 diameters.)—The tube is fully five times its normal size. The wall, as represented by *a*, apart from being somewhat thinned out, is unaltered. *b* indicates the inner lining composed of one layer of cylindrical epithelium, in places somewhat flattened. The remnants of the bases of the folds are indicated by *c*. The lumen of the tube as indicated by the dark shade is completely filled with epithelial cells of the new growth. In many places these form a homogeneous mass, but at the points indicated by *d* assume a glandular arrangement.

FIG. 3.—ADENO CARCINOMA OF THE FALLOPIAN TUBE. (80 diameters.) The section is taken from the wall of the tube. *a* is the somewhat flattened but normal tubal epithelium. *b* a cross section of a normal fold and *c* the normal lining of a portion of a diverticulum from the lumen. Penetrating the wall of the tube and occupying nearly half of the field is carcinomatous tissue. The cells on the whole have fairly uniform nuclei, but here and there they are deeply stained and increased in size. At several points, especially in areas indicatedby *d*, a distinct gland-like arrangement is demonstrable. Along the advancing margin of the growth there is considerable round cell infiltration, especially evident at *e*.

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in some instances was only noticed a few weeks before the time of operation.

In the two cases reported by Roberts[6] the patients experienced severe attacks of pain, followed by a profuse serous discharge with subsidence of the pain. These attacks occurred at intervals of about three months until operation was undertaken about a year after the first. Routier's[7] patient gave a history of a similar attack. The presence of ascitic fluid was observed in only a few instances.

Age.—With four exceptions the disease appeared in the fifth or sixth decade. The youngest patient was thirty-five years of age, the oldest seventy years.

Number of pregnancies.—As will be seen in the following table, absolute or relative sterility was noticed in almost all cases. Data regarding the number of pregnancies were obtained in twenty-four cases. Two other patients were unmarried.

9	patients	had	no	children.
2	"	"	"	but one miscarriage each.
7	"	"	1	child each.
2	"	"	2	children each.
3	"	"	3	" "

Diagnosis.—Carcinoma of the tube has not been diagnosticated previous to operation, a diagnosis of ovarian cyst or of hydro- or pyosalpinx, having usually been made. The sudden onset of a serous or hemorrhagic vaginal discharge at or about the time of the menopause, and following a long period of sterility, at once suggests a new growth, as inflammatory disease usually becomes manifest in earlier life. If a pelvic examination reveals a mass in one or both fornices, and if the uterus is free from disease, there is probably a new growth of the ovary or tube.

Ovarian tumors are less often accompanied by a vaginal discharge and usually attain a greater size before giving rise to symptoms. The differential diagnosis however is sometimes impossible.

In determining whether we are dealing with an innocent papilloma or with a malignant tumor, the histological structure is chiefly to be considered. The simple papillomata present a branched stem of connective tissue, invested with a single layer of epithelial cells of uniform appearance, and not tending to invade the stroma. In the carcinomata the epithelial cells are polymorphous, are usually in several layers, and exhibit a tendency to invade surrounding structures. The papillomata, however, are always to be regarded with suspicion, as is shown in the cases of Kaltenbach and Fabricius referred to above In these the histological picture was that of an innocent tumor, but in each there was a recurrence.

The thin walls of the tube and its intimate relation to the broad ligaments favor extension of the growth beyond the limits of the tube. It is essential, therefore, when removing the tube to make a wide dissection of the pelvic connective tissue. It is advisable to remove the opposite tube also, as in twenty-five percent of the cases reported both tubes were affected, and in three or four others carcinoma developed later in the tube, which, as it appeared normal at the time of operation, had not been removed.

The prognosis, so far as can be determined from the small number of cases, is less favorable than in carcinoma of the body of the uterus. We find that three patients died as a result of the operation. In fourteen cases recurrence was noted in from two to eighteen months. Three were apparently well fourteen months, nineteen months and seven years later, respectively. The remaining cases were either lost sight of or were reported too early to furnish data as to ultimate results.

In the March number of the Bulletin (after the above article had been sent to the publishers) a case of carcinoma of the tube was described by Dr. Le Count. The author emphasizes the importance of chronic inflammation as an etiological factor, comparing carcinoma of the tube to similar lesions following hyperplastic inflammation in other organs. I must, however, take exception to the writer's criticism of many of the cases previously reported. Most of these cases are carefully described in the original, and both the descriptions and illustrations clearly indicate the presence of carcinoma. For example, in the case reported by Fearne from Leopold's laboratory, Le Count apparently considers the growth to be a simple polypous hyperplasia. I have, however, had the opportunity of examining sections under the microscope and agree with Dr. Fearne's diagnosis.

In regard to the adeno-carcinoma of the uterus described by Cullen in his recent book, which Le Count declares is merely a case of polypous hyperplasia, it is evident that the latter writer has not studied the case carefully, as from the description it is seen that many portions of the growth show the typical picture of adeno-carcinoma. I have personally studied the case carefully and there is not a doubt as to its being a glandular carcinoma.

[6] Roberts: Trans. Obstet. Soc., xl, 1899.

[7] Routier: Ann. de gyn. et obstet., vol. xxxix, 1893, p. 39.

LIPO-MYOMA OF THE UTERUS.*

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Although fatty tumors are frequently found in many parts of the body, the presence in the uterus of a new growth, consisting in large part of adipose tissue is so rare as to lend some interest to the report of the following case:

The patient was a woman, aged 62, married, and the mother of thirteen children, the youngest 24 years of age. The labors had all been natural. She had had three miscarriages, the last twenty-six years before. Her menstrual history had been perfectly regular and normal. The menopause occurred twelve years previously. The family and personal history was excellent. She had always been in good health. The first indication of any abnormality occurred nine years ago, when the patient noticed a slight serous vaginal discharge. This passed away after some weeks and did not affect her general health. The discharge returned after an interval of over eight years, but again lasted but a short time, and was accompanied by no untoward symptoms. For two weeks before examination she had been bleeding moderately, but continuously. The discharge has never been offensive. On only one occasion did the patient suffer when she complained of a sharp pain like that during labor. Her appetite was good and the bowels were regular. There was slight increased frequency of micturition. The patient thought that she had gradually lost in weight. The heart and lungs were normal.

On abdominal and vaginal examination a large firm tumor was found connected with the uterus, filling the pelvis and extending almost to the umbilicus. Operation was advised and performed by Dr. H. A. Kelly and a large mass, including the uterus and appendages, was removed by the supravaginal route. The tumor was not densely adherent, and the operation presented no unusual difficulties, except for rather free hæmorrhage, which was finally perfectly controlled. The patient made a slow but satisfactory recovery and is at present, eighteen months after the operation, in fair health.

During the operation and indeed for some time afterward there was no suspicion that the mass did not consist of a simple large myomatous uterus. It was only in the routine examination of the specimen in the laboratory that its unusual structure was discovered. Hence it is to the pathological description that most interest attaches.

Pathological description (Gyn. Path. No. 3703).—The specimen consists of a uterus involved in a large tumor, both Fallopian tubes, a portion of the left ovary, and a cystic right ovary. The uterine mass is globular in form, regular in outline and approximately 15 cm. in length, 14 cm. in breadth and 18 cm. in its antero-posterior diameter. The surfaces are generally smoothly covered by peritoneum. On the left side, however, above the attachment of the tube, the surface is roughened by numerous tags of adhesions. The tumor is firm and resilient in consistency. The uterine cavity is about 14 cm. in length. The mucosa of the anterior wall is glistening and is hardly 1 mm. in thickness. It is everywhere intact. That covering the posterior wall is much altered on account of the tumor which projects into it from behind. In some places many minute cysts are scattered throughout the mucous membrane, some of them being 2 mm. in diameter. In the uper part of the cavity is an area 4 x 4 cm., irregular in outline, sharply defined and very pale in color. At this point the mucosa is excessively thin and the tumor in the posterior wall almost comes in direct contact with the uterine cavity. In the lower part of the cavity is another pale area 9 x 9 cm. Here the mucosa is also thinned out but at numerous points it is still preserved, as witnessed by the small cyst-like spaces—dilated uterine glands. Situated in the upper part of the cavity is a sessile polypoid thickening 5 x 2½ cm. Here the mucosa varies from 1-7 mm. in thickness; some of the glands here are 1.5 mm. in diameter. The anterior uterine wall varies from .8 to 1 cm. in thickness and presents no abnormality. Occupying the posterior wall is a tumor mass somewhat globular in form (Fig. 1). It is approximately 10 x 13 x 10 cm. in size. On section the tumor to casual examination presents the appearance of myoma, but on more careful scrutiny is found to be markedly different. Traversing it in all directions are glistening bands between which are yellow soft looking areas. On scraping the cut surface distinct oil globules can be brought away, a thing that is never possible when an ordinary myoma is examined. The tumor itself presents no areas of breaking down. It is sharply defined from the surrounding uterine muscle, which varies from 3-5 mm. in thickness. At the point where the mucosa is pale-staining the tumor encroaches upon the uterine cavity to a marked extent and the mucosa here shows much atrophy.

Appendages.—On the right side the Fallopian tube is approximately 12 cm. in length, normal in consistency, and presents a uniform diameter of about 4 mm. Its surface is everywhere roughened and the fimbriated extremity is densely adherent to and occluded by the large ovary about to be described.

The ovary is converted into a lobulated mass, partly cystic, partly firm. The mass is somewhat bean shaped in outline and measures 8 x 5 x 4 cm. The inner pole is quite hard in consistency and on section is seen to be made up of dense fibrous tissue.

The harder portion merges into a small multilocular cyst which has a smooth, glistening surface with thin walls, and contains an iridescent yellowish fluid.

The cystic portion is divided into loculæ of various shapes and sizes by firm trabeculæ.

The several small pedunculated masses project into the cavity of the cyst.

*Read before the Johns Hopkins Hospital Medical Society, March 18, 1901.