

A clinical study on primary carcinomatous and sarcomatous neoplasms between the folds of the broad ligaments : with a report of cases / by J.E. Janvrin.

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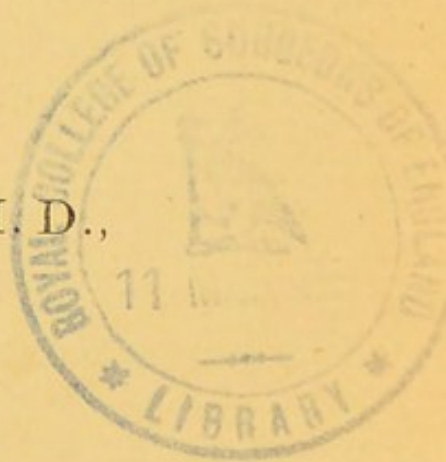
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A CLINICAL STUDY
ON
PRIMARY CARCINOMATOUS AND SARCOMATOUS NEOPLASMS
BETWEEN THE
FOLDS OF THE BROAD LIGAMENTS.

WITH A REPORT OF CASES.

BY
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NEW YORK.



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A CLINICAL STUDY OF PRIMARY CARCINOMATOUS AND SARCOMATOUS NEOPLASMS BETWEEN THE FOLDS OF THE BROAD LIGAMENTS.

WITH A REPORT OF CASES.

J. E. JANVRIN, M.D.,
New York.

IN presenting this subject I am aware that I am dealing with a condition which has seldom been reported up to the present time, excepting those cases in which the malignant growths have been noted *in* the ovaries. In fact, the only case that I have met with is one of "primary sarcoma of the tubes," reported by Sänger in the *Centr. für Gyn.*, 37, 1886, and which at that date Sänger affirms "is the only one on record." If other cases have been *reported* they have escaped my notice.

The three following cases have occurred in my practice during the past three years, and the specimens have been subjected to the most careful examination, and both the clinical history of the cases and the microscopic examination seem to me to fully prove the statement here made, viz., that malignant neoplasms, other than those of the ovaries, sometimes do occur *primarily* between the folds of the broad ligaments.

CASE I. *Composite myxo-sarcoma of right Fallopian tube.*—Mrs. B., aged thirty-six years, married fifteen years, no children; says that she had a severe attack of pelvic peritonitis

about twelve years since. During past six months has been steadily losing strength and flesh. Early in October, 1888, I was called to see her, and found her suffering from a severe attack of congestion of the pelvic organs. She informed me that she had been under the care of a female homœopathic practitioner for several weeks, and that the treatment had been "ergot injected (*per vaginam*) into a uterine fibroid, and also vaginal tamponing with cotton saturated with glycerin." Her attendant being out of town, I had been sent for to relieve the urgent symptoms. I found a thoroughly enlarged right Fallopian tube, also intense congestion of the pelvic organs, but no fibroid. The usual treatment for such congestion relieved it within a few days. On leaving the case I advised the patient to permit no more injections of ergotin into the supposed "fibroid," but, if the enlarged tube continued to give serious trouble, to have it removed in the immediate future.

Three months later, January 7, 1889, I was again called to see the case. I learned that the glycerin tampons had been used constantly during the three months; the injections of ergotin had been dispensed with (none having been used since I had seen the case in October). At this date (January 7th) the "fibroid" had been pronounced "cured" by the homœopathic attendant. The patient, however, had steadily and rapidly failed in every way and was suffering excruciating pain daily. She had therefore decided to change her attendant.

On examination the right Fallopian tube was found greatly enlarged, fully five inches in length and from two to three in diameter, extremely tender, tense, and but slightly movable. The patient had become habituated to large doses of morphine. Diagnosis: pyosalpinx, with acute congestion of all the pelvic viscera, and the tube probably impervious and greatly distended. Advised removal of the tube as soon as the patient could be gotten into suitable condition for the operation. Laparotomy performed January 30th. Operation strictly aseptic and lasted nearly one hour. Slight hemorrhage from a few small adhesions controlled by catgut ligatures. Pedicle, after ligation, touched with pure carbolic acid and dropped. The right tube was removed and found to be rather firm and apparently solid; did

not contain fluid of any kind. Left tube apparently healthy and therefore not disturbed. Abdominal cavity perfectly clean. Incision closed, no drainage. Patient reacted well, but within three hours complained of excruciating pain at the "pit" of the stomach. Passed a somewhat restless night notwithstanding I had given morphine hypodermatically at 9 P.M. (one-third grain). At 9 A.M., 31st, the temperature was normal, but pain severe, and morphine was repeated. During night had taken by mouth a few teaspoonfuls of hot water. Nutritive enemata of peptonized milk and whiskey given every six hours during the 31st.

At 6 P.M. temperature had risen to $103\frac{1}{2}^{\circ}$, pulse 120. Anti-febrin (5 grains) and frequent sponging of face and hands with ice-water. At 10.30 P.M. pain very severe and patient very restless. Gave one-third grain morphine hypodermically. Slept fairly well until 8 A.M., February 1st, when she vomited slightly. Nutritive enemata continued during the day, temperature falling and ranging from 99° to 100° . At 9 P.M. she vomited suddenly and freely, and with a pronounced fecal odor. Gave saline cathartics by the mouth, also stimulating enemata carried high up by rectal tube, to induce movements of bowels. All attempts, repeated frequently during the night, to move the bowels proving unavailing, I feared there might be some septic material in the abdominal cavity. As the patient was sinking rapidly, I determined to open the cavity and investigate. Placing the patient upon her right side, and under chloroform, I removed the two lower sutures and gently separated the edges of the wound. There was no evidence of *septic* condition (as far as this examination could disclose). The edges were closely approximated and the dressings reapplied. The vomiting continued during the day and the patient died at 4 P.M. Examination showed a moderate amount of simple, plastic peritonitis, no septicæmia, and no occlusion of the intestines.

The fatal issue in this case I attribute in part to the peritonitis and in part to a condition of total paralysis of the digestive and assimilative functions due to the shock of the operation and to the extremely exhausted condition of the

patient before the operation, and also to the injurious effects of the large quantity of morphine taken during the six months prior to the operation. I believe that this morphine habit had as much to do with the paralysis of the functions of digestion and assimilation as the extremely exhausted condition of the patient and the slight peritonitis following the removal of the growth. The peculiar appearance of the specimen, its almost solid structure, and the absence of *any* accumulation of any kind within its lumen marked it as a growth of peculiar character. Together with this, the extreme suffering and rapid emaciation of the patient indicated something more than an ordinary inflammatory product, and seemed to point to a malignant growth. The specimen was carefully examined by Dr. William H. Porter, pathologist of the New York Post-Graduate School, and he submitted the following report:

*“Composite myxo-sarcoma of the right Fallopian tube.—*The macroscopic appearance of the specimen for examination was that of a cylindrical mass about five inches long and two inches in diameter. It was semi-solid and slightly gelatinous in consistency. The original lumen of the Fallopian tube was dilated and empty. There was no evidence of its having contained blood, serum, or pus, and still the lumen of the tube was nearly an inch in diameter. The uterine and peritoneal ends did not appear to be occluded, but were very much constricted as compared with the central portion of the canal of the tube.

“Upon microscopic examination the epithelium lining the tube appeared to be in fairly good condition, and there was no positive evidence of a catarrhal salpingitis. The cut surface of the neoplastic tissue around the tube appeared very much like that commonly seen upon the cut surface of leio-fibroma which is undergoing myxomatous degeneration.

“Microscopic examination of the new formation revealed a large variety of connective-tissue formations. There was a slight hypertrophy of both the circular and longitudinal smooth muscle fibres which enter into the construction of the tube. There was

also a moderate increase in the white fibrillated connective-tissue bundles between these muscles. The small arteries in some places were thickened and surrounded by infiltrations of round cells or leucocytes arranged in a concentric manner common to syphilitic affections. There was also some endothelial proliferation. While some parts of the section strongly resembled a syphilitic infiltration, there was no hyaline transformation in the vascular walls and nothing that would positively mark it as syphilitic.

"At other points there were spots of well-defined connective-tissue corpuscles imbedded in a homogeneous matrix, and presenting all the appearances which are common to a spindle-celled sarcoma. At other points a similar kind of tissue was found, but of the small, round-celled sarcoma type. At still other points there was the soft, gelatinous, semi-solid matrix common to myxomatous tissue. In these soft masses all kinds of connective-tissue corpuscles were found, the many-tailed cells predominating, so that the sections presented the appearances commonly described as characteristic of myxomas, or net-celled sarcomas.

"The general histological construction, however, of this newly developed tissue would argue against its being classed as an inflammatory growth, but would place it among the mixed connective-tissue growths. Owing to the large variety of histological elements found, it is impossible to give a *single* name which will in any adequate manner express the condition.

"It may well be classed under one of two headings—either as a composite fibro-sarcoma, or as a composite myxo-sarcoma, the latter being the more accurate of the two.

(Signed)

"WILLIAM H. PORTER, M.D."

CASE II. *Primary carcinoma of the parovarium.*—Mrs. W. S. C., thirty-seven years of age, married, the mother of one child ten years old; no other pregnancy; came under my observation the latter part of November, 1890. Eighteen months previously she began to suffer from pain in the pelvic region, especially on the left side.

There had been no irregularity of menstruation, and, in fact,

no symptoms present except the pain, which at times was severe, and a gradual decline in strength and health.

Her physician, on making a local examination, thought he found a small sub-peritoneal fibroid, and began at once the use of galvanism. This was kept up for some months with no apparent effect, the pain and growth gradually increasing.

This treatment was stopped in the spring of 1890, the patient going to the country for the summer. She reports that her weight in September was one hundred and forty pounds, having gained a few pounds during the summer.

When first seen by me (November 30th), her weight was about one hundred and fifteen pounds. She was anæmic, cachectic and suffering continuously from pain in the region of the left tube and broad ligament.

Examination revealed a mass as large as a goose-egg in the region of the left broad ligament. Also a smaller mass to the right of the uterus (the uterus itself being perfectly normal). That upon the left was perfectly firm and hard, and not at all movable; that upon the right semi-elastic and slightly movable.

Diagnosis: Small ovarian cyst of right side. Solid growth, possibly malignant, involving tube or ovary, or both, of the left side, and the growth held firmly by adhesions.

Recommendation: Laparotomy at the earliest date possible. Patient took a month in which to consider the subject, and on January 6, 1891, entered my private hospital for the purpose of having the growths removed.

During this interval the pain had been constant and, at times, intense, and she had lost some fifteen pounds in weight (weighing but one hundred pounds), and her general condition was very bad, showing quite markedly the cachectic appearances so characteristic of malignant growths.

Laparotomy performed January 8, 1891, two days after admission to hospital. Operation simple, except as complicated by the adhesions surrounding the growth situated in the left broad ligament. The neoplasm removed from the right pelvis was a small polycystic ovarian tumor, size of a hen's egg, and was removed without difficulty. The neoplasm to the left of the uterus was perfectly hard and solid, about the size of a small

orange, and apparently implicating the whole broad ligament and ovary. It was so firmly bound by fibrous adhesions to the pelvic bones and to the lower portion of the sigmoid flexure that its removal was accomplished pretty slowly. Still the operation was completed, and the patient transferred to bed at the end of an hour and fifteen minutes.

The bleeding vessels were mostly controlled by catgut ligatures; but some oozing continuing from the torn surfaces deep in the pelvis, after thoroughly flushing out the cavity with sterilized water at 115°, iodoform gauze was packed into this pocket, and brought out through the lower end of the abdominal incision. The operation was performed strictly aseptically.

The patient's *morale* before the operation was anything but satisfactory, she having expressed herself to her husband and relatives as being certain that she would succumb to the operation. Reaction was fairly good within six hours. Everything seemed favorable to recovery during first forty-eight hours. Pulse and temperature nearly normal. No nausea or tympanites. The gauze drained the abdominal cavity of the serum slightly tinged with blood. Bowels moved quite freely at the end of twenty-four hours by Seidlitz powder, given some twelve hours after the operation, and followed by stimulating enema. No symptoms of peritonitis or septicæmia. Nutritive enemata given at regular intervals, beginning twenty-four hours after operation.

Notwithstanding the apparently perfectly satisfactory condition of the patient up to the end of the second day, she then began to fail rapidly, and died on the evening of the following day, apparently succumbing to simple exhaustion.

Post-mortem showed nothing whatever that could be accredited as the cause of death. The abdominal cavity was perfectly sweet and clean, the oozing having ceased the day before death, and the serum having been carried off thoroughly by the gauze. There had been no peritonitis or sepsis.

The following report by Dr. William H. Porter is a very thorough and careful study of the pathological conditions

found, and shows conclusively the malignant character of the neoplasm of the left broad ligament :

“Primary carcinoma of the parovarium. Report upon the specimen removed from the pelvic region of Mrs. W. S. C. :

“The neoplasm which was removed from the right side, in the vicinity of the ovary, is unquestionably a simple polycystic growth which originated in the ovary of that side. It has completely displaced the ovarian tissue.

“The neoplasm which was removed from the left side is a very complex growth. It did not originate in the ovary proper, but between the folds of the broad ligament below and to the inner side of the ovary. At the same time no ovarian tissue can be found in the mass which was removed with the neoplasm proper, and it has every appearance of having originated near the ovary and of having completely destroyed its structure, so that nothing remains by which the ovary can be identified.

“Taken as a whole, the macroscopic appearances of the new-growth are those that are common to an ordinary leio-fibroma, both as regards consistency and color.

“It was not possible to establish any direct communication between the interior of the neoplasm and the lumen of the Fallopian tube. The latter, however, appeared to have been dilated, but without any direct relation to the central portion of the new-growth.

“Upon microscopic examination the sections were found to contain a moderate amount of smooth muscle fibres and an abundant formation of new tissue composed almost exclusively of the connective-tissue substance group of tissue formation. In some places the spindle-celled connective-tissue corpuscles predominated, at others the round-celled connective-tissue elements were in the majority. Other portions were composed of a decided mucoid-like tissue substance which contained a varying number of the stellar or many-tailed connective-tissue corpuscles. Although some portions of the neoplasm resembled very closely a spindle-celled sarcoma, others that of a round-celled sarcoma, and still others a myxoma, or net-celled sarcoma, the sections taken as a whole did not give the impression that they were made up from a neoplasm which could be, in the strictest

sense of the word, called a sarcoma; neither did they give the impression of having been cut from a truly inflammatory, tubercular, or syphilitic type of tissue formation. On the other hand the sections presented appearances which would lead to the supposition that some form of local irritation—but not of specific origin—had disturbed the equal and uniform distribution of the nutritive supply to the part and caused an *irregular* supply which had resulted in this unequal development of the various forms of connective-tissue substance formation, the result of which was, that no particular kind of tissue predominated with sufficient uniformity to give to the neoplasm any distinctive characteristic by which it could be specifically named in accord with our present nomenclature.

“Scattered throughout the section, at irregular intervals, there were found small extravasations of blood corpuscles, also small zones and streaks of blood pigment, which, together with the larger cavities containing the remnants of blood, suggested a primary injury as a causative agent in producing this peculiar neoplasm.

“That the parovarium was entirely involved was quite apparent from the dilated condition of its tubular structure and the enlargement of the contained epithelial cells, but the microscopic appearances were those of an adenoid hypertrophy of the organ and not of the cylindrical-celled epithelial carcinomatous class of growths. The extensive connective-tissue formations of the embryonic type pointed *away from*, rather than toward, a carcinomatous growth.

“These conditions, however, did not clearly explain the apparent malignancy of the disease; and the active and extensive changes of an epithelial character in the parovarium also suggested a more malignant nature.

“New sections were made from various parts of the neoplasm, and finally a few small zones were found in which the perivascular or lymphatic spaces were dilated and filled with epithelial cells. These epithelial corpuscles were packed into these elongated and irregular alveolar spaces without any definite order of arrangement and without any distinct intercellular substance.

“This positive type of pathological formation, together with

the changes in the organ of Rosenmüller, unquestionably stamp a portion of the neoplasm as carcinomatous in character, which, in the absence of a similar growth in any other part of the body, must have originated in the epithelial structures in the parovarium as a cylindrical-celled epithelial carcinoma.

"Although the larger part of the section resembled an adenoid hypertrophy, there was a point which was distinctly carcinomatous in character, otherwise this carcinomatous infiltration of the lymphatics would not have been developed.

"The remaining portions, which formed the larger part of the neoplasm, were distinctly composed of the connective-tissue type of formations, largely embryonic in character, and strongly resembled that class of growths commonly described as sarcomata. But the irregularity and complexity of its formation showed at once that it should not be classed among the true sarcomata.

"This prolific connective-tissue formation can be explained by a disturbance in the circulation and in the distribution of the nutritive supply, brought about in part by the local irritation of the carcinomatous growth, and possibly quite largely by the electrical treatment.

(Signed)

WILLIAM H. PORTER, M.D."

CASE III. *Cystic angio-sarcoma of the left broad ligament; lipoma of the right; dilated tubes.*—Mrs. E. M., aged twenty-eight years, three children; only the last one now living, eighteen months old. Was examined at my office May 8, 1891, and gave the following history: Has always been well until the beginning of the year 1891, then began to lose strength and experienced more or less pain in region of both ovaries, especially the left. Has menstruated regularly about the middle of each month, and with no especial trouble until that of March, 1891, which came on (on the 17th) more freely than usual and with a good deal of pain. It continued profusely for three days and then began to check, but continued as a metrorrhagia for over two weeks. Again, on April 15th, it occurred, the flow being profuse, and the pain, especially of the left side, being severe. It had continued every day since that date. Patient anæmic, pulse weak, and heart's action somewhat irregular, with a harsh systolic murmur. Examination revealed an enlargement of the size of

a large orange at left of the uterus, somewhat movable, semi-elastic, and slightly tender to the touch. On the right side there was a smaller mass which was freely movable and perfectly hard to the touch; uterus normal.

Diagnosis questionable. Probably hæmatoma of left tube or broad ligament, or both, due to some pathological growth which it was impossible to determine except by abdominal section. I advised the patient to enter the hospital and submit to laparotomy as soon as her condition would permit.

Laparotomy performed May 15th. Right ovary seemed to be healthy, but the Fallopian tube was considerably enlarged and dilated. In the folds of the broad ligament a hard nodule, apparently about an inch square, was found. Ovary, tube, and broad ligament tied off and removed.

On the left side a much more serious condition existed. During the operation it was impossible to distinguish the left ovary, it being covered in by the new formations in and around the broad ligament. The Fallopian tube was indistinctly made out; but there were found *between the folds of the broad ligament* several cystic developments occupying a *central* position in the ligament, and below these cysts and further to the left, but still within the ligament, another mass which had every appearance of an hæmatoma. Some inflammatory exudate had been deposited around this mass and a little difficulty was experienced in removing it entire. It was, however, accomplished and the entire appendages of this side tied off and removed.

Operation, forty-five minutes. Cavity simply sponged out, there having been but slight bleeding, and closed by the deep silver-wire sutures only. (I would here say that during the past year I have returned to the silver wire, or the carbolized silk, deep sutures, and have had no mural abscesses such as I have had when the peritoneum has been first closed by catgut. I believe mural abscesses in my cases have been due principally to a faultily prepared catgut.) The patient made an uninterrupted recovery from the operation, and her general condition has been greatly improved. Still, although she has gained considerably in strength and flesh, she has not recuperated as rapidly as is usual after a simple laparotomy.

The examination of the specimens, also made by Dr. Porter, gave the following result, and, to my mind, their pathological condition accounts for their rapid development, and also for the bad condition of the patient when operated upon. It also, together with the two preceding cases reported, opens up a field for pathological investigation and research which may be of importance in the future, especially as to the question of development of malignant neoplasms *primarily* in the folds of the broad ligaments (the ovaries excepted), and also as to whether some cases of hæmatoma within the ligaments are not directly traceable to a preceding pathological development of a malignant type which, from its destructive tendency, causes the formation of the hæmatomas.

“Report upon specimen removed from Case III. The right ovary appeared to be quite normal in every respect. The Fallopian tube, however, of the right side was dilated and its internal wall thrown into leaf-like folds, running parallel to its long axis. Microscopic examination of the right tube showed no abnormality aside from the expansion of its lumen. The ciliated epithelium lining the tube was not only intact, but in a good state of preservation. This fact would tend to preclude the existence of a previous catarrhal disturbance of sufficient gravity to explain the dilated condition of the tube.

“In the folds of the broad ligament of the right side there was found a small oval neoplasm, flattened antero-posteriorly. This growth measured one inch in its longest diameter, one-half of an inch in breadth and three-eighths of an inch in thickness. Upon microscopic examination this neoplasm was found to be a simple lipoma with its well-defined capsule.

“On the left side very much more extensive lesions were found. The ovary was, however, perfectly normal. The Fallopian tube was practically in the same condition as that upon the right side; but owing to the extensive new formations between the layers of the broad ligament its lumen was not as uniformly expanded as was the case upon the opposite side. The integrity of the epithelium, however, appeared to be as perfect as that upon the right side. The same leaf-like longitudinal

folding of the mucous membrane lining the tube was distinctly made out in many places. Within the folds of the broad ligament there was found a large, reddish mass, two inches in its greatest, and one and a half inch in its smallest diameter. This neoplasm had a well-defined, distinct, and somewhat dense capsule, a firm, white, fibrillated, connective-tissue capsule. Within this capsule there was a well-marked and laminated mass of proteid substance resembling the appearances commonly seen within a sacculated aneurism.

"This tumor was attached, before being removed for examination, to the broad ligament and the new formations within the ligamentous folds by a small pedicle of fibrillated connective tissue. This pedunculated appearance was of artificial formation, the mass being completely between the folds of the broad ligament at the time of operation, and the neoplasm was unquestionably of hæmatomatous formation.

"Between the layers of this left broad ligament there was one quite large cyst, measuring one and a half inches in diameter. It had a thin wall of dense fibrillated connective tissue and contained a serous fluid resembling that commonly found in cystic growths developed in this region. Immediately surrounding this larger cyst there were several smaller cysts filled with a thick, dark-brown, and grumous material, which was almost gelatinous in its consistency.

"Microscopic examination of this material showed it to be composed of a granular, amorphous substance, and absolutely without cell-formation.

"The walls of these smaller cysts were less dense than that covering the large one, and were composed of a loose matrix of fibrillated connective tissue, newly formed bloodvessels and connective-tissue corpuscles of various kinds, the round and spindle-shaped cells preponderating. Between and around these cystic formations, underneath the Fallopian tube and between the layers of the broad ligament, there was an abundant development of newly formed connective-tissue substance.

"Microscopic examination of this new formation showed an abundant development of new and dilated vessels having the common appearance of angiomatous tissue. Some of the arteries

were surrounded by a sheath of newly formed fibrillated connective tissue infiltrated with a large number of connective-tissue corpuscles, so that many of the sections resembled the conditions that have been described as 'angioma hypertrophicine' and 'angioma hyperplasticine.'

"At some points there was an abundant formation of round and spindle-shaped cells, arranged in a homogeneous matrix, as is common with sarcomatous growths. At other points the connective-tissue corpuscles, and particularly the round cells, were pigmented as we find them in the melanotic formations of a sarcomatous nature.

"While all these formations *might* be the result of a local injury and consecutive inflammatory changes, it is hardly possible in the absence of any history of injury.

"It seems much more rational and in keeping with facts to look upon these neoplastic formations as sarcomatous in nature, and, through the rupture of newly formed and unduly thin-walled vessels, thus explain the hæmatomatous formations, rather than to attempt to develop an encapsulated hæmatoma and various cystic formations out of inflammatory changes without any clear and well-defined cause for the injury which could have excited the inflammation. This new-growth therefore should be looked upon as a sarcomatous neoplasm, or, better still, an angio-sarcoma.

"In this connection I might mention two other cases of similar character, which, in the light of what we now know regarding these formations, were unquestionably sarcomatous developments within the layers of the broad ligaments. One was an exceedingly painful, but distinctly encapsulated, hæmatoma of the broad ligament, which I examined for Dr. Bache McE. Emmet. It had a sharply defined capsule of connective tissue imbedded in well-defined sarcomatous tissue, all of which was located between the layers of the broad ligament. The other case was one which I saw through the courtesy of Dr. Thomas E. Satterthwaite, in 1878. Dr. Satterthwaite presented the specimen before the New York Pathological Society, with a complete history of the case. The following is a condensed quotation of the case as reported by Dr. Satterthwaite: 'The patient had died

from an internal hemorrhage, the point of rupture of the blood-vessel being upon the surface of a nodular body situated in the right broad ligament about an inch and a half from the fimbriated extremity of the right Fallopian tube. This neoplasm was the size of a pullet's egg, its central point being a small clot of blood, while around this central clot there were zones of clotted blood, also more or less organized, and soft friable material. It also contained a cyst about the size of a filbert, the contents of which were muco-purulent. The neoplasm did not involve the uterus, ovaries, or parovarium, but was quite apart from any of these three organs and seemed to be confined to the line of the Fallopian tube. Microscopically the friable substance about the cyst might be classed as a sarcoma; that is, it consisted of round and fusiform corpuscles imbedded in a homogeneous stroma. Unfortunately, however, such appearances belong also to blood clots that have commenced to organize, and therefore it is difficult, if not impossible, to distinguish between them. Sarcomas in such structures are rare, if indeed any such are on record. I should feel more inclined therefore to regard it as a cystic hæmatoma of the tube, a condition which is sometimes met with. The origin of the blood, however, in such a situation is difficult to comprehend.' I believe the above to have been a case of undoubted sarcoma.

(Signed)

"WILLIAM H. PORTER, M.D."

CONCLUSIONS.—The first and third cases are, to a certain extent, analogous. At least in both cases the sarcomatous elements predominate, and although the development in Case I. was in the Fallopian tube *only*, nevertheless it was *within* the broad ligament of that side.

In Case III. the sarcomatous development was lying *centrally* between the folds of the left ligament. In Case I. there had been serious local injury inflicted by the injections (per vaginam) of ergotin directly into the walls of the tube. One of the results of these injections had been the frequent attacks of profound congestion. I believe also that this constant irritation from the injections had much to do with the patho-

logical condition of the growth itself. There was no breaking down of the tissues, no hæmatomatous condition in or around the neoplasm. Simply the rather soft, gelatinous sarcomatous growth rapidly developing, but practically still in its early stage. In Case III., with no history whatever of a previous local injury, there had been a rapid development of the neoplasm, then a breaking down of the tissue and the consequent hæmatomatous condition which formed so distinct, and, to my mind, a secondary part of the neoplasm. In both of these cases the Fallopian tubes were dilated to a considerable extent, but there was no trace of a preceding salpingitis. The increased size of the lumen of the tubes had been brought about by the *stretching* force upon its calibre as the neoplasms grew outward. In neither case had there been any pressure upon the tube.

Case II. is entirely different as to the pathological elements. The parovarium was entirely involved, as was apparent from its dilated tubular structure and the enlargement of the contained epithelial cells. This, however, seemed to be an adenoid hypertrophy, similar to that condition not infrequently seen in the uterine body, and was thought to be that *only* until, in the latest sections examined, and outside of the organ of Rosenmüller, certain small zones were found in which the lymphatic spaces were dilated and filled with epithelial cells, the epithelial corpuscles being packed into these elongated and irregular alveolar spaces without any definite order of arrangement. This positive type of pathological formation, together with the changes in the organ of Rosenmüller, at once stamped this portion as carcinomatous, the *whole* neoplasm being undoubtedly an adeno-carcinoma undergoing its transition to true carcinoma. This condition, *in the uterus*, has been recognized by Schröder as "adenoma malignum," by Winckel as "diffuse papillary adenoma," and more fully by Possi, Ruge, and J. Veit, the last of whom shows pretty conclusively the changes from an adenoma to a carcinoma in the uterine body. (A *résumé* of this subject under the title of

"Adenoma Uteri," together with the history of several new cases, by Henry C. Coe, M.D., published in the *American Journal of the Medical Sciences*, August, 1891, gives a pretty full report of whatever has been written upon this subject—adenoma of the uterus—up to the present date.)

It seems to me that Leopold's objection to Schröder's term—"malignant adenoma"—is well taken, and that with equal propriety the simple term "adenoma" could be dispensed with. Strictly speaking, this term adenoma should give place to that of *adenoid hypertrophy*, since it is very doubtful if there ever is a development and formation of new granular tissue in all its histological elements. That which we most frequently find is a simple hypertrophy of all the structures of the gland elements, with marked enlargement and retrograde changes in the epithelial cells, often giving them a decidedly colloid appearance. Up to this point there is little or no tendency to malignancy; and if the gland or hypertrophied tissue be completely removed at this time it is not apt to recur. If, however, at this point the irritation be continued, the basement membrane, upon which the epithelial cells rest, tends to give way and the epithelial corpuscles are then permitted to drop back into the lymph spaces. Here they meet with an abundance of nutritive material, and in their retrograde condition rapidly imbibe this material and properly utilize it. They rapidly swell, subdivide, and fill the lymph spaces with epithelial corpuscles, and give us the appearances characteristic of a true and malignant carcinoma.

This illustrates the danger of incomplete removal of this hypertrophic and degenerated tissue. If it is not completely removed, communication is established between the epithelial cells, in their degenerated condition, upon the outside of the basement membrane which supports them and the lymph spaces just underneath them. In this light the operative procedure, unless thoroughly done, may be the element that causes a growth, which is just on the border line, to become absolutely carcinomatous. In like manner all kinds of local

irritation, injections, or electrical influences may be the agent which causes the basement membrane supporting the epithelial cells to give way, and thus enable the epithelial corpuscles to gain access to the lymph spaces and a true carcinoma to be developed.

This appears to be clearly so in Case II., in which, for several months, galvanism had been given in powerful currents for the purpose of destroying or arresting what was supposed to be a fibroma of the uterus. As far as I know, this is the only recorded case of an adenoid hypertrophy in the *parovarium* undergoing degeneration and transition to a carcinoma. In fact, I know of no other *recorded* case of a *primary carcinomatous* development within the folds of the broad ligament, aside from those which develop in the ovary proper.

DISCUSSION.

DR. A. W. JOHNSTONE, of Cincinnati.—When we remember the nature of the little organ lying between the folds of the broad ligament, the wonder is we do not see here more of carcinoma, of adeno-sarcoma, and of other new-growths that have been reported. I believe they do occur oftener. These organs are the remnants of a foetal life. Their functional activity is in abeyance. They are like moles on the skin, with little or no nerve supply, and a slight vascular supply. They were cut off almost entirely from trophic supply years before. My own experience leads me to believe that their change into neoplasms is more common than has been recognized; yet I have only twice come across true cancer of the ovary. In those cases there was a well-defined tumor on one side as large as a water-pitcher. One was solid, the other cystic, but, strange to say, there was in both of these cases beginning carcinoma in both broad ligaments. Down in the hilum of the ovary was the beginning of the trouble, spreading toward the ovary, but not reaching the periphery in either case except in a few scattering nodules.

At the side of the growth was a thick, hard, scirrhus cancer, much better marked in the hilum of the ovary than at any other

point, and I have thought that these cases of cancer of the ovary are due especially to a degenerative change in the hilum, where the structure is deprived almost entirely of its nerve supply and nutrition. This portion of the ovary corresponds with moles and other excrescences on the skin, which are notorious for producing cancer. The deficiency of nutrition in the two instances is very similar. In many so-called cases of simple ovariectomy, I believe there is commencing cancer at the time of the operation, for it is not unusual in the course of six months or a year after the operation to hear of the abdomen filling up with cancer, carrying the patient off of this disease unexpectedly early after the operation. A more careful examination of the tumor removed might have revealed the commencing cancerous change.

This change from adenoma into carcinoma is an old story; it is the origin of many carcinomata.

DR. A. PALMER DUDLEY, of New York.—There is one point in Dr. Janvrin's paper which I think will bear a little investigation, inasmuch as the diagnosis in each case was uncertain to begin with, and was only made certain by the aid of the microscopist. The point to which I would especially direct attention was the fact that in one case, or in both, the patients were treated in the first place for fibroid growths. And all through the paper Dr. Janvrin led up to the idea that the starting-point of the adenoma or sarcoma was some injury.

The first laparotomy which I performed proved to be a case of cancer of the ovary, recurrence in the form of sarcoma taking place in four months in what appeared to be the healthy ovary on the opposite side, thus illustrating Dr. Johnstone's remarks. The patient finally died from extensive cancerous disease. I remember having seen years ago another case where a carcinomatous growth sprang up in the broad ligament in a patient treated by Dr. Wylie, and I saw him remove the growth. I have on one or two occasions seen malignant disease in the broad ligaments. In most of the cases known to me there had been a history of injury as the initial factor. In one of the author's cases the patient had been treated thoroughly by electricity. Now I believe that we can do injury with electricity just as we can do violence by any other means. During the past summer

I had the pleasure of spending a couple of weeks with Apostoli, and I saw just such a case in his practice, in which he dwelt for a long time upon the misuse of electricity in the treatment of fibroid growths. The case was one where malignant disease had sprung up beneath the broad ligament. The history showed maltreatment by electricity. I mean by that to say that the parts had been burned, and pathological changes had been induced which resulted in cancer. I think I have seen one case in New York in which the same result followed long-continued treatment by electricity. I believe that in cases of existing pelvic disease, it may be a pyosalpinx to start with. Excessive use of electricity or violence by injections of ergot may cause malignant tissue to spring up along the nerves and bloodvessels of the broad ligament. I certainly believe that Dr. Janvrin is right when he gives as the cause of primary cancerous growth in the broad ligament some form of violence.

DR. A. F. A. KING, of Washington.—Much has been said by Dr. Johnstone and other speakers to corroborate the idea which I have entertained for a long time with regard to the pathology of cancer, namely, that it is a disease which is the result of deficient nervous supply, and, consequently, of deficient government of nutrition by the nervous system. Now there is no question but that the process of nutrition is as much governed by nerve supply as are the processes of motion, sensation, etc., and it would appear that we have only to cut off or diminish this government by the nervous system in order to set up the process of cancer formation—a formation which has been spoken of very pertinently as a “histological mob,” as a growth of cells without order and without government. Dr. Johnstone probably had this idea in view when he spoke of cancer growing in moles and other tissues which have a deficient nerve supply. This agrees again with what has just been said regarding excessive doses of electricity. Such doses probably paralyze these governing nerves, or depress them, just as a severe stroke of lightning might destroy the entire nervous system.

Another illustration is seen in the frequent occurrence of uterine cancer after the change of life. Now, after the functions of the reproductive organs have ceased, it is natural to suppose

that the nervous supply would be cut off. Nature would not expend its powers in the maintenance of what we might call the telegraphic system of nerves going to the reproductive organs after they have finished their function. The telegraph-poles or nerves would be taken down. It would appear that after this involution of the nervous system common to the change of life, there is no longer any provision for the government of the pathological processes which take place in the uterus, its nerve and blood supply being greatly reduced. But if it so happen that the blood supply does not cease, growth of cells goes on; these cells have no nerve government. It is well for us to get some definite understanding, to have some good principle in explanation of the growth of this so-called malignant tissue. I think what has been said to-day tends to corroborate this view.

Now we know very well that during the exaggerated functional activity and nutritive growth of the reproductive organs which take place during pregnancy, not only do the vascular structures increase in size, the muscles hypertrophy, and so on, but also the nerves and their ganglia increase in size. After pregnancy is over, those structures undergo involution, as do the walls of the uterus. This shows that the organ requires during its period of activity more nerves, or larger nerves for its government. After the special function ceases, the telegraph-posts, as I have called them, are taken down. And so it seems to me that cancer really does arise in many instances from imperfect nervous government over histological growth of the tissues.

DR. JANVRIN.—I have very little to say in closing the discussion. The remarks made by Dr. Johnstone as to the embryonic condition of tissue in which malignant disease develops are certainly quite *apropos*. I think that that condition of tissue has very much to do with the development of these malignant growths primarily in this site. As I stated in my paper, reported cases are extremely few. I presume the cases do rarely occur, but I do not believe that they are so rare but that we would find more of them if a careful microscopical examination were always made of the tissues removed. In the class of cases referred to by Dr. Johnstone, I believe we would often find beginning malignant change—much oftener than we have here—

tofore. The specimens are not, as a rule, thoroughly examined microscopically. This is due to the fact that the gross appearances are those of perfectly simple and benign growths. One of the principal reasons why I wrote the paper was to call the attention of the Society to that fact, hoping that it might be of some use in stimulating them to the more thorough examination of specimens.

I am very glad to hear Dr. Dudley report the cases seen during the summer under Apostoli. From a considerable experience in this branch of gynecology during the past ten years, I firmly believe that nearly all cases of cancer of the uterus and of its adnexa are the result of injuries. Careful inquiry into the history of cases would, I think, corroborate this statement. I am not a believer in the theory of inherited tendency toward cancerous disease to any great extent. There may be a slight tendency toward that condition in some persons, but I believe that nine out of ten cases of cancer, whether in the pelvis or elsewhere, result from injury. In one of the cases reported in my paper, I believe that the injury was done by galvanism. It is true that this is the only case which I have seen due to this cause, but of this one case I am pretty confident. In another of the cases I am sure that the injury was brought about by injections made into the lumen of the tube. As Dr. King has stated, cancer has, as one of the prime factors of its development, a lack of nerve government. In the two factors mentioned, injury and lack of nerve control, we have sufficient cause for the disease without looking for a constitutional tendency. After it has once started, we know very well with what rapidity it advances, and how radically it must be dealt with by removing not only all the involved tissue, but also a good amount of surrounding healthy tissue, where this can be done, in order to give the patient the best chance for a long exemption from the disease, and in many cases an absolute cure.

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