

ATLEE (W. L.)

On
Sarcoma of the Ovaries

BY
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SARCOMA OF THE OVARIES.

BY WASHINGTON L. ATLEE, M. D.,

Philadelphia, Penn.

IN a disease so rare, so little known, and so fatal as sarcoma of the ovaries, it is a duty every one owes to the profession to record his experience, however limited. My object, therefore, in bringing this subject before the American Gynecological Society, is to present in detail a few cases that have occurred in my practice, to offer some suggestions as to the diagnosis of the disease, to recommend certain constitutional treatment, and to urge an early resort to surgical interference. I have no time to take up the literature of the subject, scant as that is; this will be left to gentlemen less engaged in the practical duties of the profession. I do not know that I can, — nay, I fear that I cannot, — add anything new to our knowledge of sarcoma of the ovaries, and I am sure there is as yet no reason to hope that any suggestions can be offered looking toward its radical and curative treatment. Indeed, it is much to be regretted that the profession is greatly at fault in the management of malignant growths. The time, I pray, may come, when even the most formidable of our maladies will succumb to more enlightened therapeutics, and valuable lives will be more frequently saved by timely and conservative surgery. In battling with incurable disease we expect defeat, but surely our successes in the present century should admonish us never to tire in our warfare against every ailment that curses the human race. Medical science and art are progressive, but only in proportion as each individual worker devotes himself to their advance-



ment. The following cases and comments are offered in that spirit.

CASE I. — June 9, 1866, Mrs. T. G., was thirty years old ; menstruation appeared at the age of seventeen years, was suspended for eight months, and then returned, being free from pain, though profuse. She was married at the age of twenty years, remaining regular for two months after, when she had severe uterine hemorrhage, continuing thirteen days. The flooding was dreadful, and ligatures were applied to her limbs. She continued to flood at every menstrual period until the age of twenty-two years, when conception took place. At six months' gestation she had convulsions, which recurred every ten minutes daily for two weeks, ending in miscarriage of a fetus supposed to have been dead twelve or fourteen days. After this she recovered, and continued regular for one year without hemorrhage, when she was again suddenly prostrated by loss of blood. She resided at that time in New York, and sent for Dr. Van Buren, who discovered a small ovarian tumor in the right side. After an illness of about two months she regained her strength, became regular, though profuse, but had no flooding. She changed her residence to Philadelphia, and about eighteen months before I saw her she again conceived, at the sixth month was again taken with convulsions, and came under the care of Drs. Wilson, Gilbert, Hamilton, and others. A miscarriage followed, and the fetus, as before, was decomposed. At the same time she was dropsical or anasarcaous. Severe hemorrhage, lasting three weeks, followed the miscarriage. Afterward she became regular and profuse. Subsequently, Dr. Knight detected a small tumor in the left inguinal region, which he pronounced ovarian.

When the patient consulted me she was anemic or cachectic, and the size of the abdomen was equal to a six or seven months' pregnancy. In the recumbent posture two distinct tumors were discovered, one in each side, both oblong, and somewhat kidney-shaped ; the right one

was the largest, extending upward into the hypochondrium, and downward into the superior strait of the pelvis; the left tumor scarcely reached the pelvis and did not rise so high as the other. The intestinal tone or percussion was clear between and above them. Both tumors were very hard, nodulated, and resembled in feel a cirrhotic liver. They were movable to a considerable extent. The pelvis was free, the uterus central and independently movable. The sound was admitted two inches.

I diagnosed malignant disease of both ovaries, and advised against surgical interference. The patient disappeared from my observation, and I never learned the result.

CASE II. — June 17, 1871, Mrs. J. A. P., of Wilmington, Del., consulted me at my office. She was thirty-two years old. Menstruation commenced at twelve years of age, recurred regularly for three months, was then suspended for a long time, and again returned every three weeks until the age of twenty-four years. She was then married, and the menses became more regular. She had three children; the youngest being two years old. Lactation had been abundant, and she had not menstruated while nursing. Latterly menstruation was scant, but prolonged for two weeks.

The patient first noticed the tumor on April 19, 1871. Three weeks before I saw her, Dr. Wales, of Wilmington, had pronounced the disease to be ascites, co-existing with pregnancy. On June 15th, she was tapped by Drs. Wales and Bush, eighteen pints of amber-colored transparent fluid having been removed, containing, after standing, a whitish sediment. The fluid was coagulated by heat.

Although tapped only two days before I saw her, she was then as large as a woman pregnant at full term. There was evidently an accumulation of fluid, to the amount of six or eight quarts, in the cavity of the peritoneum, surrounding the tumor. By sudden and deep pressure, so as to displace the layer of fluid, the tumor could

readily be recognized. It was very movable, uneven, nodule, and hard. Ballotement was perfect. The uterus was central, movable, and non-adherent to the tumor. The pelvis was free from abnormal deposits.

The patient supposed herself pregnant, but I assured her to the contrary, and proposed to operate for the removal of the tumor.

The diagnosis was, — a compact, small-celled, multilocular ovarian tumor of the right side, surrounded by fluid in the peritoneal cavity; the fluid, perhaps, originating in the tumor itself, and escaping through an opening in its envelope.

On June 26, 1871, I visited Wilmington and removed the tumor, with the assistance of Drs. Wales, Bush, Kane, Johnson, and Grimshaw. An incision about two inches long was first made in the linea alba down to the peritoneum, which was punctured by the trocar, and about eighteen pints of amber-colored transparent fluid were removed. The index finger was now passed into the cavity of the abdomen and the tumor surveyed. It was non-adherent, and was connected with the right side of the uterus by a very wide pedicle. As the tumor was removable, the incision was extended so as to be six or seven inches in length, and the mass exposed. It had a mottled mahogany color, unlike a cystic tumor of the ovary. In rolling it out of the abdomen I ruptured it with my finger to the extent of an inch, causing free venous hemorrhage. The tumor was kidney-shaped, and its pedicle, about five inches wide, was inserted in a sulcus along its concave surface. A stout hempen cord was thrown around the pedicle and securely tied, and the tumor was detached with the finger. Afterward a three-fourth inch Atlee's clamp was applied to the pedicle, and the wound closed by seven wire sutures. The time occupied was fifteen minutes.

Dr. Wales kept me regularly advised as to the progress of the case. The pulse ranged from 104 to 116, no unusual symptoms supervening until the fourth day, when

the pulse became more frequent, the stomach irritable, the abdomen distended, and about midday she vomited violently a quantity of stercoraceous matter. By the use of enemata of turpentine and castor oil her symptoms were alleviated. The clamp came away the same day. By night, however, the symptoms became aggravated, and the pulse rose to 140. On the fifth day the symptoms again improved, and early in the morning she had large discharges of flatus per anum, with less irritability of the stomach, the pulse falling to 116. For the next two or three days the symptoms continued to be more encouraging; her bowels were well opened, and large quantities of flatus escaped. But from the ninth day she grew steadily weaker, her pulse quicker and smaller, and for some hours before her death on the thirteenth day she was in an unconscious condition. A post-mortem examination was refused. Dr. Wales wrote that he was "inclined to the opinion that the operation for the removal of the tumor was successful, but the diseased action of the body that caused the dropsy still continued and caused her death."

Dr. J. Ewing Mears, reported upon the specimen as follows: "In shape, the tumor resembles, very markedly, an enlarged kidney. Its weight is three pounds less one ounce. Its long diameter measures twelve inches; its transverse diameter, six inches; the length of the greater curvature is twenty inches; that of the lesser curvature is six inches. The large extremity and the greater portion of the greater curvature are stained and mottled; the remaining portion is of a dull white color. On pressure it feels dense, hard and nodulated, the nodules varying in size. In some places, especially toward the large extremity and along the upper border, it is softer, and cavities can be detected; the surface is nodulated, the masses projecting above the surface.

"A section was made along the greater curvature, and the following conditions observed: that portion about the small extremity was extremely dense and resistant; toward

the large extremity it was softer. At this latter point the tissue was stained and soft to the depth of about one inch. Below this the substance was uniformly dense and firm. The color was grayish-white. A quantity of juice exuded from the cut surface. The appearance of the divided tissue was *markedly* fibrous. About the middle of the greater curvature a cyst, the size of an English walnut, was found. Just at the lower border of the stained portion, in the substance of the tumor, another cyst was found, larger than the one just mentioned. It contained a thin, sanguinolent fluid. At various points along the upper border, embracing the large extremity, a number of small cysts were found.

“Sections from the white and stained portions were examined microscopically. That from the white, dense portion showed a fibrous stroma, in which were imbedded numerous variously-shaped cells, containing oil globules and granular matter. The fibrous stroma consisted of fibres presenting many different arrangements, some lying parallel and close, others crossing at various angles, and others again forming alveoli. The cells varied in shape, being round, oblong, and oval, and contained many nuclei.

“The section from the stained portion presented a less dense fibrous texture, and a greater tendency to the alveolar arrangement of the fibres. The fluid from this portion contained many blood corpuscles; the cells did not differ from those found in the white, dense portion.

“The tumor appears to me to be a specimen of scirrhus, or, according to Rokitansky, fibro-carcinoma of the ovary. It is the rarest form of cancer which attacks the ovaries.”

The above case is noticed in my book on “Ovarian Tumors,” p. 390, and a drawing of the tumor there presented. See Fig. 2.

CASE III. — September 29, 1875, while on a professional visit to Auburn, N. Y., Mrs. H. H. S., of Oswego, met me there for consultation. She was thirty years old, the mother of two children, the youngest one being twenty months old.

She had passed through parturition well, and nothing unusual was noticed after confinement. The menstrual flow had been regular until July, 1875, but in consequence of its suspension at that time there was a suspicion of pregnancy.

My time being limited, I did not inquire particularly into her history. She, however, said her disease commenced in the preceding May.

In the recumbent posture the tumor occupied the hypogastric region, extending just above the umbilicus. It was irregularly ovoid. Its whole surface consisted of hard, roundish nodules, from half an inch to two inches in diameter. These nodules seemed to be incomprehensibly firm, as did the whole mass. It felt precisely like the hob-nailed liver, and was freely movable in all directions. The tumor dipped into the pelvis *in front of* and below the level of the os uteri, and there presented the same peculiar characteristics. *The uterus was somewhat elevated*, and admitted the sound to the distance of two and one half inches.¹ Free motion given to the tumor impressed the uterus very slightly, not more than could be accounted for by contact. There was no dropsical effusion.

The patient was thin, pallid, and slightly straw-colored, but bright and cheerful.

On October 1st, 1875, I wrote to her physician, Dr. C. C. P. Clarke, of Oswego, as follows:

“MY DEAR DOCTOR, — I examined your excellent patient,

¹ Professor Thomas, of New York, examined this patient ten days afterwards, and at p. 61 of the *American Journal of the Medical Sciences*, for January, 1876, says: “*The uterus held its normal position as to elevation in the pelvis, but was pushed forwards towards the symphysis pubis by a round, hard, immovable tumor, which occupied Douglas' pouch, and filled the upper part of the sacral cavity.*” This discrepancy in our descriptions may be owing to the subsequent rapid development of the other ovary, which dislodged the original tumor from the pelvis, and at the same time crowded the uterus forward. This is rendered probable, as the hypogastric tumor had risen higher in the abdominal cavity.

Mrs. S., day before yesterday at Auburn, and found a very unique and interesting specimen of disease. I have never felt a tumor that more closely resembled cirrhosis of the liver ; and from that circumstance, and from her pallid and rather cachectic appearance, I am somewhat apprehensive of a malignant basis.

“I wish that you would try the effect of arsenic and muriate of ammonia in her case. Three drops of Fowler’s solution three times a day at meals, and ten grains of muriate of ammonia also, three times a day, between meals. Also bathe the abdomen twice a day with one drachm of the same salt in one pint of water.

“If the growth of the tumor should not be arrested by these means, I am disposed to favor an operation, although this will be a dangerous resort.”

This patient soon after visited her friends in Brooklyn, N. Y., and on the 14th of October, Professor Thomas removed both ovaries, and subsequently saved her life by the transfusion of milk. The case is reported in the “American Journal of the Medical Sciences,” for January, 1876, p. 61, as one of *Adenoma of the Ovary*.¹ In the report Dr.

¹ The following note from Dr. Thomas has been received since this article was prepared for the press : —

294 FIFTH AVENUE, NEW YORK, October 15, 1877.

“DR. W. L. ATLEE : —

“*My dear Doctor*, — Reading the report of your remarks at the meeting of the American Gynecological Society at Boston, prompts me to write you a few lines before the ‘proof’ of the same is sent you for correction. You are in error, my dear Doctor, in supposing that I reported the case of Mrs. S. as one of ‘Adenoma’ of the ovaries. I ventured on a diagnosis of this condition before operation, but the microscopic evidence presented after removal of the tumors convinced me that I was in error, and at the time of publication of the case I did not regard them as being of that character. Hence the account of the case is entitled, *Double Ovariectomy performed for the removal of Solid Ovarian Tumors*, etc.

“I thought, as I had alluded to my diagnosis of Adenoma, that this was a good opportunity for reference to the sparse literature of the subject, and I entered upon it with this explanatory statement. Al-

Thomas says, "Six weeks have now elapsed since the operation, and the patient is entirely well."

Four gentlemen examined these growths by the microscope: Dr. E. J. Janeway called it a *sarcoma*, or *adeno-sarcoma*; Dr. F. H. Chapman named the tumor *adenoid*; Dr. J. Adler says the tumor may be classified as *adenoma carcinomatosa*; and Dr. Francis Delafield says he should call it a *carcinoma*.

Neither of these microscopists has agreed with Dr. Thomas in simply calling the disease *adenoma*. Three of them have given to it a decidedly malignant character, and so far confirm my original diagnosis. I think the tumor ought to have been designated *sarcoma*, and the termination of the case would seem to prove it. Dr. Clarke addressed the following letter to me:—

OSWEGO, N. Y., *January 22, 1876.*

DR. W. L. ATLEE, *Philadelphia, Pa.*:—

"*My dear Sir,*— You will be interested to learn the result of the case of Mrs. S., the more, since it justified your caution and verified your diagnosis. Three months after the operation by Dr. Thomas, she returned to Oswego, and the next day sent for me. I learned that her health had improved for eight weeks, and then had begun to decline; that for the previous two or three weeks she had attacks of colicky pain, increasing in frequency and severity, from which she sought relief. A variety of phenomena satisfied me that there was hindered peristaltic action from a return of heterogenous growths, and that a remedy was

luding to the report of the microscopists, I said, 'As all, however, agree in the existence of a decided adenomatous element in them, it may not be without interest for the general reader to give a sketch of the very meagre literature of this form of tumor as it occurs in the ovary.' Calling them simply 'Solid Tumors,' I then gave the microscopists' reports and left the reader to draw his own conclusions as to their nature. Regretting that I could not hear your paper read, and assuring you of my high esteem, I remain,

"Cordially yours,

T. G. THOMAS."

hopeless. Dr. Thomas came up and made an explorative incision, to find the cause of the obstruction, and discovered the abdomen to be full of little cancerous tumors. She died about a week after."

CASE IV. — On September 13, 1876, Mrs. T. B., of Haddington, consulted me, at the suggestion of Dr. John E. Whiteside. She was thirty years old, had her first menstrual period at fifteen, and had been always regular. At the age of twenty-four years she was married, and had three children, the youngest being eighteen months old. The menses returned eight months after childbirth, continuing regularly until she weaned her babe in January, 1876, when menstruation was suspended for three months, after which it recurred with regularity. She had a period just one week before. She had no suspicion of pregnancy.

About the middle of July, 1876, after suffering some soreness in the right inguinal region, she noticed there a small lump which, together with the abdomen, had rapidly increased in size. When examined by me she was as large as a woman at full period of gestation. The abdomen was smooth, soft, relaxed, and fluctuating. In the right inguinal region and across the hypogastrium, by sudden, though light pressure, a hard, nodulated tumor could be felt, resembling the limbs of a fetus floating in a large quantity of fluid. The pelvis was free, the uterus central and movable, and the sound entered two and a half inches.

On November 12, 1876, the abdomen was found to have become greatly distended and tense. Fluctuation was very distinct. There were unmistakable indications of the fluid being in the peritoneal cavity. As before, deep sudden pressure detected a hard, nodulated, floating tumor, which imitated the most perfect ballottement. I now tapped her, and drew off twenty-six pints of clear, amber-colored fluid, coagulable by heat. The whole upper portion of the abdomen subsided after the tapping, but below the umbilicus it remained prominent. Here there appeared to be two tumors, or one divided by a deep sulcus. They were

very hard and nodulated, the mass resembling a hob-nailed liver, although the nodules seemed to be rather larger than in that disease. The pelvis was not occupied, and the uterus was movable independently of the tumor. She had menstruated one week before.

On December 10, 1876, I performed ovariectomy, assisted by Drs. Whiteside, Goodell, Strycker, Eckfelt, and W. Lemuel Atlee. As is my custom, before proceeding to operate, I stated my diagnosis: From the rapidity of the growth of the tumors, the rapid emaciation and cachexia of the patient, the ascitic accumulation, and above all the peculiar nodulated character of the mass, I considered the case one of malignant disease of the ovaries.

The usual incision, several inches in length, was made down to the peritoneum. Fitch's ovarian trocar was next introduced and over twenty pints of transparent amber-colored fluid removed. The tumors were found by the finger to be non-adherent, and both pedunculate. The peritoneal coat was now slit open to the extent of the other incision, and the left ovarian tumor rolled out. Its pedicle was short and wide, and its attachment to the tumor so fragile that a slight strain caused it to tear partly from the tumor. It was transfixed by a needle armed with a double ligature, tied both ways, and torn from its attachment. The right ovary was then in like manner turned out, and its pedicle treated in the same way. Both pedicles were very short and wide, being spread out and attached to incurved and elongated depressions in the tumors, and were readily torn out of these grooves. The enlarged Fallopian tubes were embraced in the ligatures, and about two inches in length of their fimbriated extremities afterwards cut off, and given to Dr. Goodell. A scirrhous mass, about the size of a Lima bean, imbedded in the omentum, was also removed, and handed to the same gentleman for examination, who subsequently reported it to be "round-cell sarcoma." Two small spots of similar deposit were seen on the parietal peritoneum. The parts were now cleansed,

the pelvis properly supplied with drainage tents, the pedicles dropped in, the ends of the ligatures kept out, and the wound closed by five or six wire sutures.

The patient recovered without any very grave symptoms. Considerable irritability of the stomach followed the operation, but the pulse, which was 130 at the time of the operation, ranged afterwards from 102 to 116. Thirty-five days after the operation Dr. Whiteside wrote as follows: "My patient, Mrs. B., is doing very well, as far as the operation is concerned, and is getting quite strong. The wound looks very healthy. On the thirtieth day after the operation she was taken with violent pain in the small of the back and over the pubes, — cramp she called it. The next day her menstrual flow came on. She was then relieved of pain, and now is doing well."¹

The tumors removed from the above patient were the right and left ovaries. They were very firm, nodulated, and incurved like a kidney where their pedicles were attached. There were several cysts on the surface of the right ovary, the largest one of which, containing an amber-colored fluid, resembled the cranium of a fetus. These tumors were presented to the Philadelphia County Medical Society, who referred them to the committee of microscopy for examination, with the following result:—

"The committee on microscopy respectfully report that specimens of the juice obtained by scraping sections cut from the tumors in their fresh state, other sections obtained from fragments hardened in strong alcohol, and still others stained with carmine, were carefully examined under the microscope.

"In the very scanty fluid exuded on scraping newly cut

¹ May 28, 1877. Dr. Whiteside informed me to-day that Mrs. B., died May 2, 1877, of further development of malignant disease; that the abdomen became filled with nodules, the stomach refused all food, and that she died of exhaustion. The menses returned regularly every twenty-eight days, the last occurring ten days before death. No examination after death was made.

surfaces of each growth, was found a moderate number of round, oval, and spindle-shaped cells, with large, oval, regularly formed nuclei, generally furnished with bright nucleoli. A hasty drawing of the more abundant of these elements is herewith submitted, by which it will be seen that they closely correspond with those of spindle-celled sarcoma.

"Thin sections from both the fresh tumors and from hardened preparations, exhibited a dense, fibrous-looking stroma, in which the spindle-cells apparently constituted but a small portion, the large majority having, it seemed, been developed into the fully formed fibrous tissue which gave its firm, dense character to the growth. The application of diluted acetic acid brought into view small oval nuclei, arranged with considerable regularity in the section, and which, even under a high power (1250 diameters), displayed none of the double, triple, and multiple character commonly met with in neoplasmata of the more malignant type.

"Your committee, therefore, conclude that these two ovarian tumors are the spindle-celled sarcomata of Wagner, Virchow, Rindfleisch, and other late German pathologists, and accurately correspond with those described by Rokitsansky as 'Fibrous Cancer,' and by Paget, under the name of 'hard cancer with fibrous structure.'¹

"According to Rokitsansky, ovarian growths of this character occur very rarely, and Scanzoni states that these 'fibrous bodies' of the ovary had, to his knowledge, only been proved to exist in four cases, up to the time his work was revised, in 1858.²

"The fluid from one of the cysts attached to the right ovary was pale yellow, transparent, and on examination did

¹ Vide *Surgical Pathology*, 3d ed., p. 632.

² "Schröder [in *Ziemssen's Cyclopedia*] says: 'Sarcoma, which very rarely occurs in the ovaries, and when it does, appears as a spindle-cell sarcoma, usually affecting both sides, is developed from the connective tissue stroma of the ovary. . . . The course of the disease seems to be tolerably rapid, and the prognosis is as unfavorable as in carcinomata.'"

not appear to contain any cell elements, except a few white blood corpuscles. The contents of the other small cysts were dark, red, grumous, and displayed, under the microscope, multitudes of altered red blood discs, with some granular bodies, which resembled the granular ovarian cell, although, as they were not tested with acetic acid, this similarity may have been a delusive one.

“ Respectfully submitted,

“ JOHN G. RICHARDSON, *Chairman.*”

“ PHILADELPHIA, *January 8, 1877.*”

Remarks. — The cases to which I have called attention, as may have been observed, possess a very remarkable similarity. All occurred in married ladies of the same age, — from thirty to thirty-two years ; all in women who had borne two or three children ; all between twelve and eighteen months after the last parturition ; all were very rapid in their growth ; all, when examined through the abdominal wall, presented the peculiar physical characteristics of an ordinary cirrhotic liver ; all, so far as examined, were incurved and sulcated, the pedicles being inserted in the same peculiar manner into these sulci ; all were free from adhesions ; all were distinctly pedunculate ; and all were free from uterine complications. In two cases the tumors were immersed in a large quantity of fluid contained in the peritoneal cavity. As in both of these instances there was no edema of the lower extremities or vulva, no fixation of the uterus, or any indication of obstructed circulation, and as the fluid was precisely like that contained in the small superficial cysts of the tumor itself, it was inferred that the fluid was supplied from leaks occurring in one or more of these cysts rather than from the peritoneal surface, particularly as in the two other cases there were no ascitic accumulations. Ballottement was so perfect in both cases that the attending physician in one diagnosticated pregnancy, while the other case so strongly resembled extra-uterine fetation that it was only from the absence of a confirm-

atory history that the correct diagnosis was made, which was afterward corroborated by tapping.

This disease must be exceedingly rare. Although I have carefully recorded in detail over 1,300 cases of pelvic and abdominal tumors, and have examined many more of which I have taken no note, only four of sarcoma of the ovaries have been presented to my observation. Still, rare as it is, so strikingly do these cases resemble each other, that the disease must have such definite characteristics as to be capable of being readily and correctly diagnosed.

In a disease so little known in medical history, and in which no one man's experience can be large, it may be considered presumptuous to attempt a differential diagnosis on such limited personal knowledge. And yet I hope that my familiarity with almost every other form of tumor will enable me to throw some light upon the subject. Many members of this association need no such instruction. But the attention of others of less experience is called to the several conditions with which sarcoma of the ovaries may be confounded. These are —

A. A sub-peritoneal or pedunculate uterine fibroid.

B. A multilocular ovarian tumor composed of small cysts.

C. An extra-uterine fetus.

D. Plastic deposits.

E. So-called adenoma of the ovary.

A. *A sub-peritoneal or pedunculate uterine fibroid* is usually smooth, regular in outline, mostly hard, sometimes slightly elastic, and of slow growth. When sub-peritoneal, it not unfrequently elongates the uterine cavity, alters the axis of the uterus, producing malposition, and when subjected to impulse correspondingly affects that organ. When pedunculate, the attachment is usually short and thick, and though the uterine cavity may not be lengthened, motions of the tumor are usually communicated to the uterus. There are, however, rare cases of fibroids with long pedicles, which do not disturb the position of that organ. The general health remains unaffected.

B. *A multilocular ovarian tumor composed of small cysts*, in its early stage very strongly resembles an elastic pedunculate fibroid. As it enlarges, its surface may become irregular, having elevations and depressions, as in sarcoma, but the elevations will be more or less elastic, while the depressions, constituted of the septa, may be firm. The uterus is usually normal in size and position, and unaffected by motion given to the tumor. Generally, the growth is more rapid than that of fibroids. The same remarks will apply to fibro-cystic tumors, except that their surfaces are more regular, and the uterus is more likely to be displaced, particularly in an upward direction. The general health in these cases is good.

C. *An extra-uterine fetus*, with a large supply of liquor amnii, resembles, in rarity of occurrence and in physical characteristics, sarcoma of the ovaries when surrounded by fluid. At an early period of extra-uterine gestation there are, however, the usual signs of pregnancy, but as the ovum enlarges severe colicky or spasmodic pains in the inguinal region supervene, accompanied or followed by a red discharge from the uterus. After a certain time quickening follows, and the motions of the living child become stronger and stronger. Milk accumulates in the breasts, while during these developments the uterus remains small. Usually, the health remains good so long as the child is living.

D. *Plastic deposits in the abdomen* sometimes strongly resemble both extra-uterine fetation and sarcoma of the ovaries. These deposits are preceded by acute peritonitis, and large, solid masses of lymph, intermingled with the folds of the intestines, may be the result of that inflammation. These inflammatory deposits become remarkably hard, and are usually nodular, as are sarcomata. They are much less movable than sarcomata, and yet through the attenuated abdomen, which usually accompanies this condition, masses may be grasped between the fingers and, as it were, raised up. Percussion in such cases returns a semi-resonant sound, while in sarcoma it is dull. Sometimes

these deposits are accompanied by fluid in the abdominal cavity, when the resemblance to sarcoma is more striking. By deep and sudden pressure the fingers strike the nodular mass, the sensation being very similar to sarcoma, while the slight mobility simulates ballottement. The uterus at the same time is small, in normal position, and, unless pelvic cellulitis complicate the case, movable. Inflammation is an essential part of the history, and the general health is much impaired.

E. *Adenoma of the ovary* is a disease of which I claim to have no personal knowledge or experience. I will, therefore, refer to the very highest authority, Mr. T. Spencer Wells, for the description. It is extracted from a paper published by Professor Thomas in the "American Journal of Medical Science," January, 1876, p. 63. "The tumor was removed from a single lady about fifty years of age, who recovered perfectly after the operation. It consisted *in great part of an ordinary multilocular cyst*; but *one large cyst* was filled with semi-solid matter, which at first sight looked exactly like soft cancer, but after thin sections were hardened in spirit their true character was made out; it was seen that the surface of the growth was fringed with papilliform villi, its substance showing in vertical sections a delicate fibrous stroma forming round or oval alveoli." Dr. Thomas, speaking of Mr. Wells' case, says: "the tumor presented was *not a solid one*, for the patient was twice tapped." The italics above are mine. Now the physical characteristics of such a tumor previous to an operation would be those, in the language of Mr. Wells, "*of an ordinary multilocular cyst.*" I have said above that I have not seen adenoma of the ovary, but cases, like those reported by Mr. Wells, I have met with, and perhaps regarded them erroneously as multilocular ovarian tumors.

It will be unnecessary for me to collate the diagnostic points of sarcoma, as they are sufficiently detailed in the cases as above related. In the third case, however, there

exists a difference of opinion between Professor Thomas and myself ; he has presented it as adenoma, while I consider it sarcoma. Yet, I think, when we compare notes, his description will be found in perfect harmony with mine. Dr. Thomas says, "the larger tumor resembled closely in aspect a cirrlosed liver. The smaller tumor resembled a large, fatty kidney." This I consider a strong corroboration of my diagnosis. Dr. Thomas further says, "upon section a number of cysts, about the size of chestnuts, were found in the large tumor, and filled with colloid material. In the smaller tumor no cysts appeared except upon the circumference, where a few small ones, the largest being about the size of a marble, existed." How very different is this description from that given by Mr. Wells in his so-called case of adenoma! Now, as it is of scientific importance to call things by their right names, and to have definite ideas of pathological structures, I will refer to another case of adenoma (?) on the same page of Professor Thomas's communication. It is that of a tumor removed by Mr. Baker Brown in 1864, and presented to the Obstetrical Society of London, and referred to Drs. Greenhalgh and Braxton Hicks for examination. They considered the specimen to be "that form of disease recently designated *adenoma of the ovary*." And yet their description is very different from adenoma as described by Mr. Wells. Their report says : "The tumor is firm, very lobulated, and somewhat kidney-shaped." "In the right lobe of the tumor were numerous cavities, the largest as large as a walnut." "On the division of the tumor in its long axis the right lobe cuts like what has been called sarcomatous tissue." "The great mass of the tumor is made up of solid pinkish matter." It is very plain, therefore, that the tumor of Mr. Brown was very different from that of Mr. Wells, and that if the latter was adenoma, the former was something else, and it must also be apparent that the tumor of Professor Thomas more closely resembled that of Mr. Brown, and that all these tumors, excepting the Wells'

tumor, belong to the class, which I have here designated, perhaps improperly, as sarcoma. It is also a very singular fact, that the history of Mr. Brown's case is almost identical with the histories of the above four cases. On referring to Mr. Baker Brown's book "On Ovarian Dropsy," second London edition, p. 202, the following remarkable similarity will be found in reference to this same case: "S. L., aged 32 years." "Many gentlemen considered that this was a case of extra-uterine fetation." "There was a solid mass floating in a large quantity of fluid." "The evening of the fourth day after the operation she became worse, and soon died."

Before concluding this paper it may be proper to inquire whether anything can be gained by treatment at an early stage of the disease. The above cases, so far as they go, offer nothing but a negative reply. I think, however, these few instances, so far advanced in their development, should not decide the question. The little experience possessed by the profession about sarcoma of the ovaries is counterbalanced by the remarkable similarity in the recorded cases, and the distinctive features are so prominent, that it seems possible to arrive at a correct diagnosis before the system is tainted by the disease. If this can be done, and the tumor be removed at a very early period, I think it not improbable that the result would be different. I have long been impressed with the belief, based on considerable observation, that malignant tumors are entirely local in many cases, and that if they are extirpated from healthy tissue before the glandular and general systems are poisoned, a permanent exemption may follow, particularly if such therapeutic measures be used as are calculated to fortify the body from a tendency to reproduce the heterologous deposit. Have we in the *Materia Medica* any agent possessing such power? I believe we have in arsenic. Arsenic, employed in doses so small as to avoid gastric irritation and its specific effect, is a most valuable tonic and alterative. It increases the numbers of red corpuscles in

the blood, as is evidenced by an improvement in color. Its internal use will not cure a cancerous growth, yet if that growth be excised from the surrounding normal structures while they are under its influence, arsenic will so maintain the vital powers and preserve the healthful condition of the blood, as to prevent in many instances, similar formations being reproduced. Such repeated examples of the protective influence of arsenic have occurred in my own practice, that I have great confidence in it. For many years I have not removed a malignant tumor without keeping the patient under its influence. In cancerous cachexia and disease beyond the reach of the knife, its use, also, is satisfactory, although not curative. The dose should not exceed three drops of Fowler's solution, and should be continued for one or two years.

I would, therefore, urge the extirpation of a sarcomatous ovary at the very earliest period after its detection, so that it may be removed before the disease has extended beyond its original boundary, and before the least evidence of systemic taint is presented. The ovary is an organ so isolated, and so free from the current of the general circulation, that its removal, under such favorable circumstances, would be likely to offer as good results as the extirpation of malignant tumors in any part of the body.

