CULLEN (T.S.)

ANGIO-SARCOMA OF THE OVARY.

By Thos. S. Cullen, M. B.

(*Reported at the Johns Hopkins Medical Society, November 5, 1894.*)

presented by the author —

[From *The Johns Hopkins Hospital Bulletin*, Nos. 44-45, December, 1894.]

[From *The Johns Hopkins Hospital Bulletin*, Nos. 44-45, December, 1894.]

ANGIO-SARCOMA OF THE OVARY.

By Thos. S. Cullen, M. B.

(*Reported at the Johns Hopkins Medical Society, November* 5, 1894.)

L. R., æt. 48. Admitted to the Johns Hopkins Hospital in the service of Dr. Kelly, July 3, 1894.

Upon entering, the patient complained of enlargement in the lower part of the abdomen, pain in the abdomen and also in the back.

Menstruation commenced at 14 years, has always been regular. She has been married over twenty years, has had two children, the youngest of which is 12 years of age. There is also a history of numerous miscarriages.

Family history unimportant.

History of present illness.—In January the menses became profuse and painful and have continued to be so. During May she first experienced severe grinding pain in the left ovarian region. This has continued and at times radiates down the thighs. Simultaneous with the first appearance of the pain a mass was noticed in the abdomen just above the pubes; this gradually increased in size.

On physical examination the lower zone of the abdomen is found distended. The superficial veins are congested, and palpation reveals a firm bilobate mass springing from the pelvis. This extends slightly higher on the left than on the right side.

The anterior lip of the cervix is flush with the vaginal wall; the os is very patulous, admitting the index finger, and on the left side of the cervical canal a soft mass can be felt. The uterus is enlarged and appears to be continuous with the mass on the left side.

July 7, 1894. Operation by Dr. Kelly. Patient in Trendelenberg position.

An incision 19 cm. long was made in the abdominal wall. On the left side the pelvis was found to be choked by a soft

mass; this was slightly movable, and extending over it was the rectum, which had been displaced toward the right side.

Both the rectum and sigmoid flexure were attached to the tumor by their posterior surfaces. The left ovarian vessels were secured and enucleation commenced. In loosening the left side, the tumor commenced to tear, and it was necessary to hurry the operation as much as possible on account of hemorrhage. The uterus was then amputated at the cervix and the cervical stump closed by five silk sutures. Nodules of the growth still remained in Douglas's cul-de-sac, on the left side where the tumor had been separated, and also between the cervical stump and the posterior wall of the bladder.

A large gauze drain was placed in the lower angle of the wound and the abdomen closed by silkworm-gut sutures which included all the abdominal coats. Duration of the operation 51 minutes.

On the following day the drain was removed and about 15 cc. of thick bloody fluid escaped. The discharge gradually assumed the character of pus, and was still present when the patient left the hospital. There was a slight rise of temperature for the first two weeks, 102.5° F. being the highest point reached. Patient discharged September 3, 1894.

Pathological report.—That portion of the uterus present is 10x12x9 cm. It is irregularly globular, bright red in color, and covered both anteriorly and posteriorly by a few delicate adhesions. The under cut surface is 5 cm. in diameter. The uterus is firm and non-yielding; its walls average 2.5 cm. in thickness, and scattered throughout them are numerous homogeneous fatty-like masses, varying from .5 to 1.5 cm. in diameter. One of these presents dark red patches which are apparently small blood-vessels. The posterior part of the fundus is occupied by a submucous nodule 8x7x5 cm. This is somewhat lobulated and resembles raw beef in color. Springing from the lower margin of the nodule and continuous with it is a finger-like mass 6x4x1.5 cm. This projects into the cavity, and its lower teat-like extremity protrudes from the cervix. The uterine cavity is 7 cm. long and approximately 2.5 cm. in diameter. The mucosa on the anterior surface is whitish yellow in color and 1 mm. in thickness.

Springing from the right side of the cavity is a polyp 1.5 cm. in diameter. The large submucous nodule which projects into the uterine cavity is not covered by mucosa, but presents a slightly worm-eaten appearance.

The right tube and ovary are of small size and apparently normal.

On the left side of the uterus is a mutilated kidney-shaped mass 16x10.5 cm., the convexity of which is directed away from the uterus, while the concave portion is adherent over an area 8x9 cm. During operation the tumor was partially divided into three lobulated masses. On separating these still further from one another, they are seen to be composed of fibres which run in parallel rows. These fibres are light red in color and resemble strands of muscle. *In the centre of each fibre and running parallel with it is a delicate blood-vessel.* Other portions of the tumor are pale, homogeneous and resemble brain tissue, but on further examination are found to be also composed of fibres. There is apparently no breaking down of the tissue. The left tube is 11 cm. long, 5 mm. in diameter. Its outer extremity is adherent to the tumor. The parovarian is intact. No trace of the ovary is to be made out.

Histological examination.—The left ovary is found intimately adherent to the tumor, there being no dividing line between the two. A portion of the ovary is recognized by several large corpora fibrosa and a corpus luteum. The tumor mass is composed of spindle cells cut longitudinally and transversely, these tending to arrange themselves around blood-vessels, which are very numerous.

The vessels have an inner lining of endothelium, surrounding which in some places is a delicate muscular coat, the outer portions of which appear to have undergone hyaline degeneration. Immediately surrounding the muscular coat are 8 to 10 layers of spindle-shaped cells running parallel to the vessel. Such is the condition present where the vascular fibres were seen.

In other portions of the tumor the blood-vessels are not so abundant, and the spindle cells do not maintain any definite arrangement. Many of the spindle cells have large oval nuclei, others show nuclear figures, while some apparently contain 2 to 3 deeply staining nuclei.

Here and there the tumor shows coagulation necrosis, sometimes with, sometimes without nuclear fragmentation, while in other places polynuclear leucocytes are present.

The Uterus.—The nodules scattered throughout the uterine wall are composed of cells precisely similar to those of the tumor. There is, however, no tendency toward the arrangement around blood-vessels. The large nodule projecting into the uterine cavity is similar in nature and presents numerous necrotic areas. On its free surface very little degeneration can be made out.

Uterine mucosa.—The cervical glands are for the most part normal; a few, however, are dilated. The change from the cervical to the uterine mucosa is gradual, the latter being exceedingly thin. The surface epithelium is intact. The glands are scanty in number, cylindrical, and have an intact epithelial lining. Those glands in the depth of the mucosa run parallel to the surface. The stroma of uterine mucosa is of moderate density.

The left tube presents some hemorrhage in the muscular coat, and a few calcareous nodules are seen just beneath the peritoneum. The right tube and ovary also contain a few calcareous nodules.

Diagnosis.—Angio-sarcoma of left ovary. Extension into uterus by continuity and also apparently by metastases, the growth in the uterus being a spindle-celled sarcoma; atrophy of uterine mucosa; calcareous nodules in both tubes and also in right ovary.

Round and spindle-celled sarcomata of the ovary, although not common, occur with a moderate degree of frequency, and we have been able to gather more than 70 cases from the literature.

Angio-sarcoma of this organ is, however, rare, and in most instances has been described under the title "Endothelioma."

Macroscopically the ovary may retain its normal contour, but be greatly enlarged; sometimes it is lobulated and may be either firm or soft. On section it is often found to contain cyst-like cavities. Some of the tumors appear to be composed of fibres with blood-vessels traversing the centre of each fibre. In these cases a diagnosis can immediately be made.

These tumors have two chief sources of origin: 1st, those arising from the blood-vessels (Amann (4 cases), Ackermann, Eckardt, Marchand); 2d, those springing from the lymphatics (Amann, Flaischlen, Leopold, Marchand, Pomorski, v. Rosthorn, v. Velits and Voigt). These two divisions are again subdivided according as the sarcoma arises from the outer sheath of the vessels or from their endothelial lining.

Our case was undoubtedly perithelial in origin, growing from the outer coats of the blood-vessels. As it is sometimes very difficult, and in fact impossible to say whether it arises from the outer or inner sheath of the vessels, we think the two divisions are sufficient, viz., those arising from the blood-vessels and those springing from the lymphatics.

These tumors have occurred in children 7 years of age, and in women 64 years old. The average of 11 cases was 33 years.

The chief points in our case were the marked adherence of the tumor to the surrounding structures, the typical vascular fibres enabling us at once to diagnose it as angio-sarcoma, and the metastases in the uterus.

Dr. Welch.—I have put under the microscope a specimen of an angio-sarcoma which is parallel to that of Dr. Cullen's. It is a most typical example of angio-sarcoma. A large tumor had grown in the axillary region, developing from the axillary lymphatic glands. It was operated upon by Dr. Keyes in New York. The operation was of unusual difficulty on account of the severe and almost uncontrollable hemorrhage. After the operation the tumor rapidly returned and there were metastases widely distributed in many organs of the body.

Dr. Cullen described his tumor as looking like a mass of muscle fibres. In my case it looked more like a mass of nerve fibres running parallel to each other, each fibre presenting a small central lumen. The tumor consists of blood-vessels running parallel with each other, and the tumor cells form the covering to the blood-vessels. There is an endothelial wall, then a few strands of circular muscle, then a little hyaline material, and then the tumor cells proper. The tissue between these strands is made up to a large extent of extravasation of blood, a few cells and a few strands of connective tissue.

Amann: Archiv f. Gyn., 1894, Bd. XLVI, S. 484.
Eckardt: Zeitschr. f. Geb. u. Gyn., 1889, XVI, S. 344.
Flaischlen: Zeitschr. f. Geb. u. Gyn., Bd. VII, S. 449.
Leopold: Archiv f. Gyn., 1873-74, Bd. VI, S. 202.
Marchand: Beiträge zur Kenntniss der Ovarien-Tumoren, Halle, 1879, S. 50.
Pomorski: Endothelioma Ovarii. Zeitschr. f. Geb. u. Gyn., 1890, XVIII, S. 92.
v. Rosthorn: Archiv f. Gyn., 1891, XLI, S. 328.
v. Velits: Zeitschr. f. Geb. u. Gyn., 1890, XVIII, S. 106.
Voigt: Zur Kenntniss des Endothelioma Ovarii. Archiv f. Gyn., 1894, XLVII, S. 560.

Description of Plate.

$\frac{2}{3}$ natural size.

The specimen is viewed from behind, the uterus being cut open. On the left side a large, somewhat lobulated and torn mass is seen; attached to the outer margins of this are a good many adhesions. The lower and inner portion of the tumor is composed almost exclusively of fibres running parallel to one another. The mass is intimately adherent to the left side of the uterus.

The uterus is at least three times its normal size, its walls being twice their usual thickness, while studding the uterine muscle are irregularly lobulated or round nodules. These are of a yellowish waxy appearance and stand out prominently. The uterine cavity is occupied by a large submucous nodule, attached to the lower surface of which is a ragged mass that projects into the cervix. The lower portion of the uterine cavity and a small part of the cervical canal are visible.

To the right of the uterus portions of the right tube and ovary can be distinguished.

Angiosarcoma of Ovary.