LYMPHOSARCOMA WITH OVARIAN INVOLVEMENT IN A CHILD

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Lymphosarcoma with ovarian involvement in a child is a rare condition, according to Van Horn. It would seem worth while, therefore, to report the following case.

CASE REPORT

The patient (Chart No. 55336) was a white girl four and a half years of age. On her admission, Oct. 2, 1927, the parents explained that she had complained of dull pain in the right side since April 1; there had been enlargement of the abdomen and shortness of breath for six weeks, and the child was dull and irritable. In spite of a fairly good appetite there had been a gradual loss of weight. The family and past history revealed nothing of significance.

The patient was pale and under-nourished, irritable, but mentally clear. The pupils were equal, regular, and reacted promptly to light and on accommodation. The extra-ocular movements were normal. There was no jaundice. The scalp, ears, and nose were negative. The mucous membranes were pale. The teeth were in fair condition. The tongue protruded in the midline and presented the normal appearance. The tonsils were not enlarged. The lymph nodes of the neck were moderately enlarged and rather hard. The respiratory excursion was shallow but equal on the two sides. There was a brownish pigmentation over the chest. The breath sounds were everywhere very harsh. No other abnormal pulmonary findings were noted. The heart was thought to be somewhat enlarged, but otherwise normal.

The abdomen was greatly distended and tense, with bulging in the flanks. The veins of the thoracic and abdominal walls were prominent. The diaphragm was elevated. The liver extended 2.5 cm. below the costal margin. Below the liver was a rather fixed firm mass which extended medially nearly to the midline and downward to about the level of the umbilicus and which curved downward and backward toward the right lower quadrant. The spleen was not felt. In the left lower quadrant was a rather fixed firm mass which extended to the level of the umbilicus. There were several other smaller hard, movable masses in the abdominal cavity.

The extremities were slender. The joints were not painful on active or passive motion, or palpation. The knee jerks, biceps, triceps and periosteal radial reflexes were equal and active. Planter stimulation gave the normal response.

The urinary findings were as follows: reaction, acid; specific gravity 1.020; sugar, negative; albumin, negative. Microscopically occasional white cells were seen, but no red blood cells or casts.

The blood showed: red cells, 4,160,000; white cells, 8,000; hemoglobin, 55 per cent. The differential count was: polymorphonuclear leukocytes 62 per cent; small mononuclear leukocytes, 31 per cent; large mononuclear leukocytes, 6 per cent; transitional, 1 per cent.

On the day of admission it was the impression of Dr. Shipley and Dr. Joslin that they were dealing with lymphosarcoma of the mesentery and colon. Laparotomy was performed by Dr. Shipley on Oct. 3, and two large masses were found in the colon and mesentery, extending upward from both lower quadrants. There was a moderate amount of blood-tinged fluid present. The abdomen was closed without further exploration.
Cultures of the abdominal fluid were negative. After the operation the abdomen became more and more distended by fluid, and the large masses increased in size.

The patient's temperature was always elevated, being 105° at time of death. The pulse ranged between 110 and 140; the respiratory rate from 20 to 26. The general course was downhill, with increasing dyspnea and rapid, shallow respiratory excursions. Death occurred Oct. 20, 1927.

Autopsy (limited to abdomen): The body was 100 cm. in length. There was a dry, scaly dermatitis over the anterior chest and both arms. The veins over the chest were distended. There was moderate edema of the feet and legs. The pupils were 7 mm. in diameter, central, circular, and equal. Superficially, nothing unusual was found in the neck. Neither the cervical nor the axillary glands were enlarged. The chest was symmetrical. There were no abnormal grooves or nodules. The abdomen was distended.

There was an open operative wound about 10 cm. in length just at the right of the umbilicus. There was very little subcutaneous fat. The muscles were pale.

The peritoneal sac contained a small amount of pale yellow, cloudy fluid and some fresh fibrinous exudate. The omentum was feebly adherent to the site of the operation. The pelvis and the lower abdomen were filled by two large, firm, smooth masses. There was another large, irregularly nodular mass in the region of the cecum, and numerous small masses were present in the mesentery and retroperitoneal tissue. The small intestine was free and, except for a very slight fibrinous exudate in places, showed nothing unusual superficially.

The spleen weighed 24 grams and measured 7 × 4 × 2 cm. Nothing unusual was seen in it.

The stomach, duodenum, jejunum and ileum showed nothing unusual or abnormal down to within a few centimeters of the cecum. The large mass involving the cecum, the appendix, and a few centimeters of the lower end of the ileum, was covered by smooth peritoneum. The lumen of the intestine was found to pass through this mass in a zig-zag course. It was not possible to make out the ileocecal valve. The appendix was enlarged.

**Fig. 1. Gross Specimen, Showing the Elongated Uterus Opened, with the Two Large Ovarian Masses at the Side**

Because of the presence of the tumor the renal markings are not distinct.
and rather pendulous, the distal end being very much larger than the proximal portion. The enlargement was due to an increase in the thickness of the wall. On section the mass in and around the cecum was found to be made up of very soft, pale, homogeneous tissue. In places the wall of the cecum was very thick, due to the presence of tissue of this type. This lesion involved about half of the ascending colon. The remainder of the ascending colon, the transverse colon, and the descending colon showed nothing unusual. In the wall of the lower sigmoid and in the upper rectum were two or three nodules of this same pale, soft, homogeneous tissue.

The liver weighed 542 grams. No nodules or tumor growths were seen.

The pancreas was so intimately incorporated in the tumor that it could not be dissected out. On the cut surface normal pancreatic tissue appeared in very small islands separated by broad bands of tumor tissue.

![Figure 2: Section of an Ovary Stained by Hematoxylin and Eosin, Showing Two Primordial Follicles](image)

Both adrenals, superficially and on section, appeared normal.

The left kidney weighed 147 grams and measured $10.5 \times 5 \times 4.5$ cm. There were numerous irregular hemorrhages on the surface. In the cortex and the pyramids were many pale yellow, soft, definitely circumscribed nodules, the largest of which was about 1.5 cm. in diameter. The renal parenchyma between these nodules, especially in the cortex, appeared to be greatly swollen and contained many hemorrhages. The cortical striations were obliterated and the glomeruli were not made out. The pyramids were distorted by the nodules but in general appeared to be small and dark red. The right kidney measured $10.5 \times 5 \times 5.5$ cm. It was not weighed but was evidently a little larger than the left. In every essential detail the right kidney resembled the one on the left. The bladder showed nothing unusual or abnormal.

The vagina and the uterus were distorted by two large ovarian masses. These masses each measured $12 \times 7 \times 5$ cm. and were covered by smooth peritoneum. The fallopian tubes were greatly enlarged and elongated. The fimbriated ends were free. On section
these large masses were found to be solid and composed of soft, pale gray homogeneous tissue.

The retroperitoneal and mesenteric lymph nodes were markedly enlarged. On section they were soft and pale gray.

**Microscopic Notes**: Of numerous sections taken from the lymph nodes and from the tumor, all showed a tissue composed of small round cells which were quite uniform in size and in staining characteristics. These small cells had infiltrated the nodes and destroyed all their architecture. Mitotic figures were not seen in sufficient numbers to be of any significance.

The malpighian bodies of the spleen were small and sharply marked off from a pulp which was congested. In some of them there were small areas of hyaline degeneration. Some trabeculae were rather thick. There were no large accumulations of small round cells.

Sections showed the tumor growth in all the coats of the intestine.

There was extensive infiltration of tumor cells into the renal substance. The infiltration in one kidney was nodular, while in the other it was more diffuse. It extended between the tubules and separated them. There was no evidence of any inflammation.

The pancreas was so distorted that it was scarcely possible to recognize it. There were large islands of densely packed cells with some small islands of Langerhans here and there, and many small mononuclear cells scattered throughout. Typical ducts were found in places.

There were extensive infiltration and distortion of the fallopian tubes by tumor growth. The ovaries, also, were extensively infiltrated. Two primordial follicles were found.

**Anatomical Diagnosis**: Lymphosarcoma, primary in the cecum, involving the sigmoid, appendix, kidneys, both tubes and ovaries, pancreas, mesenteric and retroperitoneal lymph nodes; very mild fibrinous peritonitis; dermatitis, probably parasitic.

**Reference**