

author: "I am not without hope that the day may come when science shall show us how the dissolution of these concretions may in some cases be effected, for I have seen them partly dissolved as an effect of alkalin treatment."

Later, in the admirable "Medical and Surgical Memoirs of Prof. Joseph Jones, M.D., L.L.D.," of New Orleans—which ought to be in every American medical library, as they are comprehensive, encyclopedic, intensely graphic and unprovincial—we find this subject treated at length, two cases given where Professor Jones diagnosed cardiac thrombosis before death and verified by autopsy. If this is a fair sample of his clinical teaching the New Orleans medical students have had fine instruction from this prince of clinicians.

Dr. Jones quotes the following authors who affirm the existence of thrombosis in life: Altinus, Andral, Baillie, Cloquet, Sir Astley Cooper, Crewell, Crompton, Dessault, Duncan, Gaspard, Graham, Hewson, Hodgson, Jones, Kirkes, Langstaff, Lee, Lobstein, Louis, Meckel, Martel, O'Halleran, Otto, Paget, Petit, Rokitansky, Richardson, Stengel, Mackrah, Tiedmann, Virchow and Wardrup. Dr. Jones italicises Dr. Richardson's words that "the diagnosis must rest upon the general symptoms rather than the physical."

Dr. Woolridge, a late English author on coagulation of the blood, comes down to 1890. His experiments are not clinical and mostly refer to *post-mortem* blood. He does not take into account the morphology of the blood in the pre-thrombic stage. He throws no light on the cure. His work is rather that of the physiologic laboratory chemist; careful, ingenious, strictly original, but gives no aid to those who treat thrombosis.

From what has been said about acid clotting blood, is it not strange that none of those gentlemen named, thought of feeding animals on acidulated foods, to see if thrombosis did not result? But it happens that thousands, if not millions, of American animals are fed on acidulated food, and that the diseased action of such foods has been studied in America.

In 1858 Dr. Salisbury (see "Alimentation and Disease," J. H. Vail & Co., New York, 1888) worked up this subject. Some of his results were briefly as follows: Of 104 swine fed on rum distillery swill till they died, 104 had thrombosis, embolism and vinegar yeast in the blood as shown by microscope. Vinegar and alcoholic yeast were found in the digestive organs; 103 had thrombi of the heart before death; 15 of these had them dislodged as emboli. The speaker testified that he had seen cases of swine fed on swill with like *post-mortem* concretions, and confirms these statements.

Where there is thrombosis, skeins of fibrin filaments, massive and large as compared with the normal fibrin filaments—are found in the blood before death and during life. They are single, double, multiple, straight, twisted, in bunches like skeins, like balls of twine, sometimes in balls of fibrin inclosing gravel like plums in a pudding. I once saw a lady just before confinement whose blood was quite full of skein-like silk threads—thus diagnosing the pre-embolic state. By dieting these were removed before her labor, which her attending physician said was the most normal one he ever attended!

The treatment consists in withdrawing foods that are undergoing or will undergo vinegar fermenta-

tion, and substituting foods which do not undergo this acetic acid fermentation. Beef and mutton are such foods.

It will not do to deny these facts as some deny, for example, the existence of the one seventy-fifth inch objective. The only way to disprove is by like observations conducted under like circumstances.

It is my hope in the coming season to develop the clinical morphologies as applied to these diseases of the heart and blood vessels, and to make these statements clearer by means of solar projections direct from typical cases, than they can be in these few brief, hurried practical remarks.

## A CASE OF SARCOMA OF THE RIGHT SUPRARENAL BODY CAUSING OBSTRUCTIVE JAUNDICE IN AN INFANT.

Read before the Chicago Pathological Society, Oct. 8, 1894.

BY FRANK B. EARLE, M.D.,

AND

GEORGE H. WEAVER, M.D.

CHICAGO.

### CLINICAL HISTORY.

Georgie L., born Jan. 9, 1891, the only child of robust parents free from disease of all kinds. From birth the patient was extremely anemic; never grew strong but was exceptionally free from the disorders of babyhood and was regarded a healthy child until he was past 2 years old. In February, 1893, he became jaundiced, which increased rapidly, accompanied by clay-colored offensive stools, increased anemia, emaciation and rapid loss of strength. In less than a month, the liver was enlarged to such an extent that it reached below the umbilicus, one-half the distance to the pubes. The gall bladder, greatly distended, was easily felt as a firm body. Pressure on the adjacent organs was so great that vomiting continued incessantly and almost no food was retained. The dyspnea was so troublesome that the recumbent posture was almost impossible.

At this time the patient was seen, separately, by Drs. C. W. Earle, Christopher and Fenger, and each made a diagnosis of malignant disease of the liver or behind the liver. The child was placed on increased doses of pot. iod., and iron was given in full doses.

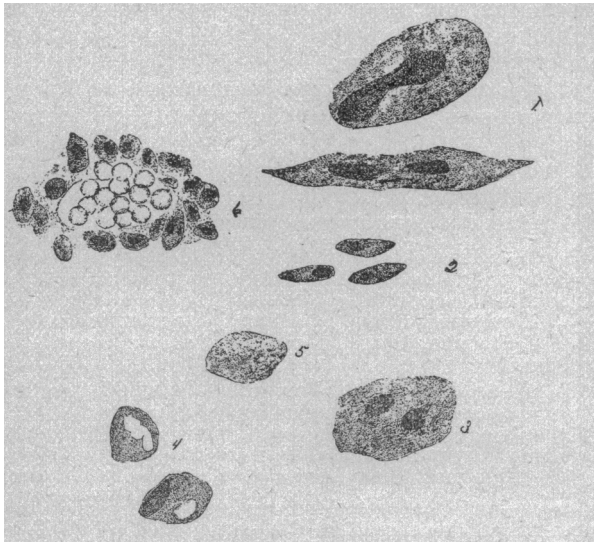
Much to the surprise of all he gradually improved, so that in May he was able to go into the country. Frequent reports of continued improvement were received, notwithstanding the fact that the patient suffered from several severe attacks of epistaxis. When he returned in the latter part of October he had gained in flesh, improved in color, and was playing about with almost as much vigor as a perfectly healthy child. The liver had decreased to one-half its former size, and the jaundice was scarcely perceptible. General improvement continued until December, when the urine became scanty and a condition of general edema developed. It was the most extensive edema I have ever seen, but lasted only a couple of weeks. By the middle of January the child appeared as well as before the attack. He was seen occasionally at the office during February, March and the early part of April and had good appetite, was digesting his food; feces normal in color and consistency. He was again gaining flesh and making blood. On April 18 he again became rapidly edematous, was unable to sleep, developed a typhoid state—temperature 103—and expired suddenly on April 23. The treatment was tonic and alterative; pot. iod. was taken for a long time and tonics all the time. Dr. Weaver will speak of the *post-mortem*.

### AUTOPSY.

Nine hours after death. Body emaciated, skin pale yellow, rigor mortis fairly developed. The examination was limited to the abdomen. The peritoneal cavity contained one pint of clear serous fluid. Surface smooth. The stomach was small and the intestines macroscopically normal. The mesenteric lymph glands were slightly enlarged. The spleen was about the size of a normal organ in an adult; dark purple

surface and fairly tense capsule. The section showed a dark-red color, with a distinct increase in the fibrous tissue. The follicles were not distinct. Pancreas about normal in appearance. The kidneys were larger than normal, pyramids red, cortex yellowish with very indistinct markings. The liver reached from the second interspace on the right side, and the third rib on the left, to two inches below the costal arch on the right side, and one and one-half to two inches below the ensiform cartilage in the median line, causing a displacement and compression of the stomach. The surface was olive-green in color and finely granular. The edges were rounded. Both lobes were alike. The organ cut with difficulty, grating under the knife like dense fibrous tissue. The section was olive-green in color, the periphery of the lobules being paler than the center.

The gall bladder (*f*) measured three inches by one and one-half inches. It was tensely distended with clear, colorless watery fluid. The fundus projected one inch beyond the border of the liver *in situ*. The cystic duct was completely obliterated except

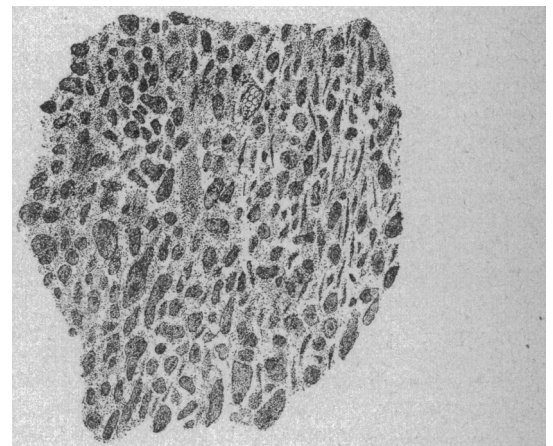


Examples of the different varieties of cells in the tumor and a small blood vessel.

one-fourth of an inch at its upper end (*d*), becoming lost in a dense firm mass at its lower portion (*b*). The lining of the remaining portion of the duct was slightly rough. The hepatic duct (*c*) was pervious throughout. At its lower portion it was much compressed and only possessed a fine caliber. On this part where compressed by the surrounding dense mass, the wall of the duct appeared thin and fibrous with its inner surface uneven. The portal vein was surrounded by the same dense mass but, while compressed, was patent. The mass above referred to (*a*) was found to consist of the altered suprarenal body. It lay behind the vessels and ducts in the portal fissure and they were fitted into it. The upper portion was three-fourths of an inch to an inch in diameter; dense, white, and fibrous on section. The cystic duct at its lower portion was lost in it. The lower portion of the gland was flattened, resembling a little more a normal adrenal. On section of this portion the tissue was yellowish-brown with a small central soft portion of darker color. The whole gland was three inches long. A few enlarged lymph glands were seen in the fissure above the adrenal.

#### MICROSCOPIC EXAMINATION.

The liver was cirrhotic, corresponding to the condition brought about by chronic obstruction to the outflow of bile. The portal lymph glands were the seat of old hemorrhages. No tumor growth was found in them. Sections were made from various parts of the adrenal body. Those from the parts not occupied by the firm, dense formation were as follows: At the outer part of the section was a zone which consisted of small round cells with numerous well preserved red blood corpuscles scattered among them. In a few places the cells were more of a fibrous character and formed fine meshes. There were few blood vessels in this portion of the section and they were filled with blood. The central portion of the section was unstained by hematoxylin. It contained abundant granular blood pigment in the most central part with very much deformed red corpuscles. Between this central area and the outer zone of stained tissue, above described, was an unstained zone, in which were seen red blood corpuscles variously disintegrated making up most of the picture, and among them a few large unstained cells with faintly visible nuclei. These large polygonal cells were probably necrotic suprarenal cells in an area of hemorrhage.



Section from tumor of the supra-renal body.

The section through the dense fibrous portion of the suprarenal body presented every appearance of a mixed-celled sarcoma. The cellular elements seemed to be entirely spindle-formed or only slightly varying from that, the apparent varieties of shape in the cells being due to the direction of the section through them. The cells were arranged in imperfectly defined bundles and were consequently cut in various directions and at various distances from the center, giving the appearance of oblong, polygonal, and larger and smaller round cells. The nuclei were also on this account at times cut so as to present a larger or smaller round form. When cut parallel to the long diameter, the cells were always spindle-shaped, and had oval or oblong or spindle-shaped nuclei. The size of the cells varied from that of cells found in ordinary small-celled sarcomata, to very large ones (Fig. 1) with a length equal to the diameter of ten to twelve red blood corpuscles. The most were about midway in size between the two extremes (Fig. 2). The varieties were quite uniformly mixed, but the large cells were more numerous in some areas, and in some portions of the sections only the smaller cells were seen. The smaller and medium-sized cells

had a single elongated nucleus located in the center of the cell. The nuclei of the large cells were oblong, being about of the diameter of a leucocyte in thickness and three times as long as thick. They stained deeply with hematoxylin and usually lay to the side or at the end of the cell. They were usually single, but some cells contained from two (Fig. 3) to four nuclei. The body of the large cells was usually homogeneous, but in a few was slightly granular, and in a very few there was the appearance of vacuoles (Fig. 4) of various sizes. In cross sections there was sometimes produced the appearance of large oval or round cells without nuclei (Fig. 5), dependent upon the location of the nuclei in the side or at the end of the cells. The intercellular material was homogeneous, transparent and highly refractile. It was present in only very small quantity, and was continuous with the cells at their ends. There were numerous small blood vessels scattered through the tissue, having their walls entirely made up of a single layer (Fig. 6) of cells. Also a smaller number of larger vessels with a similar thin wall were found.

Sections were made to include the dense tissue and the remains of the cystic duct, and the hepatic duct at the point of greatest pressure. The ducts had lost the normal lining, only showing a few irregularly arranged cells in places. The inner surface of the hepatic duct was very irregular and not possessed of a lining mucous membrane. The tumor passed gradually into the duct walls. As the duct was approached, the tissue became more fibrous and there was a layer of mature fibrous tissue making up the duct wall, which was not infiltrated by tumor or inflammatory cells. From a morphologic standpoint the dense structure in the upper part of the suprarenal body corresponds to a mixed-celled sarcoma.

Sections from this portion were kindly examined by Prof. W. H. Welch, and he says that it is not certain that the tissue is a sarcoma, but he should be inclined to so regard it. The long duration of the clinical course of the obstruction and the outflow of bile is not what would be expected in a sarcoma, as a tumor of a larger size would usually be reached in so long a time. The complete destruction of the lower portion of the cystic duct is, however, an evidence of malignancy.

I am under great obligation to Dr. E. R. Le Count for the very accurate drawings he kindly made for me to illustrate the sections.

#### A CONTRIBUTION TO THE STUDY OF MALIGNANT GROWTHS IN THE LOWER ANIMALS.

Presented before the American Microscopical Society, 1894 meeting, and read by V. A. Latham, D.D.S., before the Chicago Pathological Society, Oct. 8, 1894.

BY EVA H. FIELD, M.D.

CHICAGO, ILL.

The study of disease among the animals used for food has occupied much of the time of our most earnest investigators; the horse, probably on account of his great value as a carrier, has received his share of attention, but I find that "the children's play-mates," the cats and dogs, have been in a measure neglected.

There is, I think, no little danger in this fact, inasmuch as enough cases have been reported to prove that these animals are subject to diphtheria, pneumonia, asthma, tuberculosis, cancer, etc.

*Historical Sketch.*—Osler<sup>1</sup> says: "Cats are subject to a pseudo-membranous disease, and there are many cases on record in which children appear to have caught diphtheria from them." "On the other hand," he says, "I know of one case in which a cat died of angina and intense pseudo-membranous colitis and the children who nursed it did not take the disease; and of a second case in which a pet cat had coryza, difficult breathing, fever, and enlarged cervical glands and here too the children were not affected."

A case of asthma in a cat<sup>2</sup> was mentioned in the *British Medical Journal* in 1891.

Dr. C. Creighton<sup>3</sup> records a case of tumor of the mammary glands of a bitch. The double chain of glands was affected with nodular enlargements at several points, and one of the tumors was large with evidences of malignancy. He found that the micro-characteristics were identical with those of mammary cancer in the human subject. The same author<sup>4</sup> reports also several other cases of tumors in dogs, viz.: 1, a sero-sanguinous cyst of the neck; 2, a mucous sarcoma of the neck with a cystic interior; 3, a fluctuating tumor from the subcutaneous tissue of the hip of a dog of precisely the same structure as number 2; 4, a spindle-celled sarcoma from the head of a dog, with its center excavated into a cystic cavity crossed by a close network of cystic trabeculae.

A very interesting paper<sup>5</sup> on "Cancer in Domestic Animals" by W. H. Birchmore, M.D., reports a number of cases of both carcinoma and sarcoma.

*Case 1*—was a chicken who sustained a fracture of the humerus which did not unite. A lump the size of an egg formed about the ununited ends of the bone. The animal died of exhaustion and on examining the tumor, which weighed 64 grms. it was found to be a large round-celled sarcoma.

*Case 2*.—Another, an old hen whose feet had been frost-bitten and sore, developed an encephaloid cancer as large as a pigeon's egg on the sole of the left foot. The hen died marasmic. Lymphatic glands were found to be enlarged and the tarso-metatarsal bone a mass of encephaloid disease.

*Case 3*—was a capon. Glands removed by the usual operation. Three months later the capon died of acute peritonitis which was caused by the bursting of a cyst containing an irritant fluid. This cyst formed part of a tumor as large as an egg occupying the place of the right testicle. The tumor was an adenoid sarcoma.

A typical osteo-sarcoma developed from an ulcerated tooth-socket of a fine setter which had been wounded in the mouth by the discharge of a gun. He reported in the same paper the case of a cow supposed to be suffering from snake-bite. There was found on the udder an ulcerated mass which proved both macro- and microscopically to be a nodular mammary cancer. He also mentioned the following cases: A large mixed spindle- and round-celled sarcoma from the lower lip of a mule, caused by the irritation of the bit. A papilloma irritated by rubbing of the bridle behind the ear of a horse, became ulcerated, and when removed was found to be a connective tissue tumor, containing nests of pseudo-epithelial cells. The same author reported<sup>6</sup> an account of a morbid growth in a pig's stomach. This growth was about two centimeters in length and raised one centimeter above the surrounding tissue. He does not give the form of cancer. An interesting description of a case of carcinoma of all the mammary glands of a cat was reported in the proceedings of the London Pathological Society by W. G. Spencer.<sup>7</sup> These tumors measured from one-half to one and one-half