DR. JOHN H. GIBBON stated that since hearing Doctor Gill's first report on this condition some time ago, he had operated upon a case by this method with most satisfactory results. He believed that the old method with the longitudinal incisions is not comparable to this.

DR. JAMES T. RUGH reported that he had had two more cases of the same type, operated on in the same manner with excellent results, far superior to the old time operation.

Stated Meeting Held December 5, 1921

The President, DR. GEORGE G. ROSS, in the Chair

LANTERN DEMONSTRATION OF CYSTIC DISEASES OF BONE AND BONE TUMORS

DR. RALPH S. BROMER (by invitation) presented a series of lantern slides illustrating the röntgenologic diagnosis of cystic diseases of bone and bone tumors.

DR. ASTLEY P. C. ASHHURST presented a series of lantern slides illustrating the clinical diagnosis, prognosis and treatment of cystic diseases of bone and bone tumors.

DR. C. Y. WHITE (by invitation) presented a series of lantern slides showing microphotographs of cystic diseases of bone sarcoma and discussed the pathological diagnosis.

THE CAUSE OF DEATH IN HIGH INTESTINAL OBSTRUCTION

DR. J. W. ELLIS, of the Medical Corps of the U. S. Navy, read a paper with the above title, for which see page 429.

EXTERNAL BILIARY FISTULA

DR. JOHN H. JOPSON and DR. JOHN SPEESE reported a case of obstruction of the common bile duct with complete external biliary fistula, relieved by choledochogastrostomy.

The patient, a male about forty-five years old, was admitted to the Presbyterian Hospital in October, 1920, suffering from an acute upper abdominal inflammation of one week's duration, accompanied by chills, fever and deep jaundice. Two days later he was operated upon by Doctor Speese, and a perforated gall-bladder containing a number of small stones was drained. Bile and calculi were found outside the gall-bladder. A biliary fistula persisted, and six weeks later a second operation was performed to effect its closure. No stones had been found in the common duct at the first operation, but the stools remained clay colored and an obstruction was evidently present. At the second operation, which was very difficult by reason of the extensive adhesions present, the gall-bladder was found to be almost entirely sloughed away. With difficulty the common duct was located, and it was thought that a probe could be passed into the duodenum. A tube was inserted into the duct, and the wound was partially closed. No improvement resulted, and four weeks later another operation for the relief of the obstruction and cure of the fistula was attempted. The same difficulties were

encountered in the recognition of structures, due to the dense and massive adhesions. When the duct was uncovered it was found to be obliterated in its lower portion. It seemed impossible to expose the duodenum sufficiently to establish a communication with the duct, and as the pylorus was accessible and in close proximity, a fistula between it and the upper portion of the common duct was constructed. A piece of Dakin tubing was passed into a lateral opening in the duct, sutured to its margin, and the other end was introduced into the stomach, the walls of which were tacked to the duct by sutures in front of and behind the opening. The technic was similar to that sometimes employed in choledochoduodenostomy. Leakage of bile in diminishing amount persisted from the wound for a time, soon became scanty, and after several weeks the wound closed, and has remained healed. Bile reappeared in the stools after twelve days. For a time the patient had recurrent attacks of pain and jaundice, evidently associated with cholangitis, but these have ceased, and he is now in good condition.

The operation of anastomosing the common duct to the duodenum has been performed many times, where obstruction was present which could not be removed; also where reconstruction by plastic operation was impossible in cases where the duct had been accidentally wounded or multilated, or where it had been deliberately resected. In the latter cases an external biliary fistula, with its attendant disabilities and dangers, threatens or is already established. While the operation may be difficult, involving as it does the exposure of the upper portion of the common duct, or of the hepatic duct, in a mass of adhesions in the old cases, and its approximation and suture to the near-lying duodenum, such terminal or lateral approximation can usually be accomplished. In this case operated by us, it was impracticable by reason of the adhesions burying the duodenum, and the anastomosis to the pyloric end of the stomach proved eminently satisfactory.*

LYMPHOSARCOMA

DR. J. RALSTON WELLS, from the service of W. Estell Lee, M.D., at the Children's Hospital, Philadelphia, Pa., reported the history of a boy, nine and one-half years of age, who was admitted to the hospital August 8, 1921, on account of a lump in his left axilla. Approximately one year ago he began to have boils over the body and arms. No history of any specially chronic ones at seat of present lump (mass). About seven months ago first noticed a swelling in the left axilla. At this time it was about the size of an ordinary marble. This lump, as time went on, gradually increased in size, although without treatment at times seemed to become smaller for a week or so and again resume its progressive enlargement. Three weeks ago two spots appeared near the apex of the rounded mass and showed a tendency to ulcerate. During the last

* Since reporting this case Dr. Ellsworth Eliot has called their attention to the statistics collected by him in his article "The Repair and Reconstruction of the Hepatic and Common Bile Ducts," read before The American Surgical Association in 1917, in which six cases are mentioned as treated by this method of choledochogastrostomy, at least five of which were successful.

week the lump has increased very rapidly in size, one of the above-mentioned spots has broken the skin, forming an ulcer which has a serous, slightly odorous discharge. A few darting pains have been present in the mass during the last few weeks. Patient unable to define the direction the pains radiated. Pains have never been severe or prolonged over several seconds. Usual diseases of early childhood, otherwise has been " very well." Family are well, no history of tuberculosis or neoplasm. The patient is a white boy. Well developed, well nourished, good color, and apparently in good health. Facial expression good; skin of good color and texture, warm and normally moist. No rash or other abnormal qualities noted.

The left anterior axillary, upper part, is the seat of a relatively large indurated swelling approximately six cm. in diameter at the base, and four cm. from base to apex (apices). This mass terminates in two tit-like formations, dark purple in color, one is ulcerated, the other apparently contains fluid, two to three c.c., and is apparently covered with a very thin skin. The ulcerated tit is the seat of an excessive granulation which is flattened over a small part of the skin surface, therefore of rather a pedunculated structure; this measures approximately one cm. at the base and two and one-quarter cm. across its surface. An area of induration extends from mid-axilla to mid-clavicular lines and up almost to the clavicle and below to the nipple line. The growth is apparently attached to the skin but moves freely, en masse, on its underlying structures. There is apparently no pain on palpation, the ulceration is painless, the entire mass is resistant in firmness but not hard. No pulsations are felt, but in places a distinct bruit is heard per stethoscope.

The supra- and infra-clavicular glands are somewhat enlarged on this side but not painful to palpation, and apparently *not* the seat of a very acute *inflammatory* process. The same region on the right side is negative, grossly.

The lungs are normal except over the outer infra-clavicular region, left side, in which area the resonance is impaired.

The left arm has a small mass in the upper third which is apparently composed of granulation tissue, approximately one and one-quarter cm. in diameter, flattened and closely simulating the tissue seen on the one ulcerated peak of the growth. Tissue is friable and bleeds slightly. The left axillary glands are enlarged. Supra-clavicle, left enlarged and one fairly discrete nodule is felt. Infra-clavicle, left enlarged, right axillary, supra- and infra-clavicular (epitrochelars), bilateral and inguinals (bilateral), are apparently normal.

On August 9, 1921, the growth was removed, together with the breast and underlying muscles, adopting the usual technic of a breast-cancer operation.

X-ray examination showed no signs of secondary bone involvement or any involvement of the lungs. The mediastinal shadow shows no enlargements.

The laboratory examination of the tumor removed. The specimens consisted of one large mass measuring twenty by six cm. at the base

and five cm. thick, and numerous small masses, for the most part lymphatic glands, of varying size. Main mass is moderately firm, the upper two-thirds covered with skin, the base is apparently covered on the under surface for the most part with a more or less formed membrane of connective tissue. Some muscle tissue is attached to the base edges. The upper surface of the mass has two projections, one apparently ulcerated and one a ruptured cystic formation. Color, blue-black. Cut surface is red and more or less smooth lobulations are lightly marked, numerous large vessels transverse in all directions. The surface directly under the dark projections is purple in color and run into the tumor in the shape of a cone or infarct (tip in). The small glands are hard, glistening and more or less friable (cut), with slightly increased resistance. Microscopic: Large round-cell sarcoma (alveolar). Glands show metastatic involvement.

The case made an uneventful recovery, gained weight and was apparently in good health on discharge. Was referred to the out-patient department for treatment by X-ray and the mixed toxins of Coley. This toxine treatment has been pursued with weekly injections to the present time. Examination within the last three days shows the left supra-clavicular space to be more full than previously noted. This change is recent, the space mentioned has always been somewhat full, but at present is more so, and two enlarged glands are easily palpated. Mother states that he is apparently normal.

PRIMARY AXILLARY LYMPHOSARCOMA IN A CHILD

DR. J. RALSTON WELLS said, in studying this case of primary lymphosarcoma, alveolar in type, of the axillary lymphatics, he found that it was either of a relatively uncommon occurrence or else the reports in our literature for the last decade were not representative of its frequency.

A very brief résumé of this type of growth and its possible derivation, or better, theories as to its derivation, may not be amiss at this point.

Up to comparatively recent times all neoplasms were classed as cancer, but Virchow, approximately sixty years ago, first called attention to and designated sarcoma as a distinct group in this atypical growth of living tissue.[1]

Senn [2] defines sarcoma as "an atypical proliferation of connective-tissue cells from a matrix of fibroblasts of congenital or post-natal origin. . . . Connective tissue the sole origin of sarcoma . . . other tissues involved by extension. The intimate relations of the new blood-vessels with the parenchyma of the tumor is the characteristic feature of sarcoma. The more recent definition of Ewing [3] corresponds to that of Senn. "Sarcoma is a malignant tumor composed of cells of the connective-tissue type." This classification which in its basic points is clear, does not include a large number of tumors whose origin is questionable or whose structure is not typical and thus a border-line or transitional group of tumors are found. Ewing says that "Diseases such as angiosarcoma, lymphosarcoma and gliosarcoma are of such varied origin and character that some writers have urged the elimination of the term sarcoma. . . . The finer analysis of the origin and composition of many sar-

comas reveals a prominent participation of endothelium in many tumors of distinct mesoblastic characters. In such cases the characters of the tumor cells rather than their embryonal antecedents should determine the classification."

Lymphosarcoma is a true sarcoma, but it is also open to doubt in many border-line cases. Tracing this group, let us start from the purely benign lymphomata through the leukemias with their characteristic blood pictures, and pause a moment at Hodgkin's disease. This condition is relatively well defined, but its various gradations and locations very often lead us by logical sequence through Hodgkin's granuloma to Hodgkin's sarcoma and from this to true lymphosarcoma. Recorded cases of a seeming transition are found. Several striking examples by careful observers may be cited. A report by Welch,[4] in which he originally found Hodgkin's granuloma in a cervical lymph-gland, and some months later at autopsy, tumor masses resembling sarcoma were removed from the neck, dura, liver, etc.; another similar case by Karsner,[5] the following by Coley[6] in which a primary diagnosis of simple lymphoma was made (neck), seven months later a diagnosis of sarcoma. A true differentiation may be made between these border-line cases only when the relatively slight tendency to invade the surrounding tissues and the origin are taken into consideration.

The origin of sarcoma is one that has not been satisfactorily established, and it is not my purpose to enter into a lengthy discussion in this brief outline. True uncomplicated lymphosarcoma, localized or diffuse, is rapid in growth, and little, aside from the typical history and microscopic findings, are possible to determine theories of rests, inclusions, and undifferentiated cell groups. Occasionally a case of perhaps slower growth or a striking example of a particular type may be found, and these theories are not to be lightly laid aside, many appearing reasonable for specific cases; but in a large number of cases seen in the allied or borderline cases of Hodgkin's granuloma and sarcoma, and true lymphosarcoma, an irritant such as the tubercle bacillus or other like foreign agent seems to be a well-established origin.[7, 8] Whether a bacillus or other irritant starts the process, and this process then proceeds under its own momentum, or whether, as may be at times in the case of the tubercle bacillus, the bacillus breaks up into a granular formation and continues its activity in this state, is of no special consequence; the point is that a definite sarcoma, originating in lymphatic tissue, is found after passing through its "transitional" (possibly Hodgkin's granuloma) changes.[8] The exciting causes being bacillary or toxic irritation, repeated trauma, direct implantation, infection or transmission, with or without previous congenital inclusions. This may be more prevalent than has been realized. Many other explanations may be, and are possible, but at least this theory will be answerable for a definite number.[9, 10, 11, 12, 13]

Kundrat[14] separated definitely a type or class of lymphosarcoma from the general group of pseudo-leukæmia and leukæmia. This classification only holds for those that extend by definite lymph chains and channels. We know that true metastases does occur in lymphosarcoma other than by means of

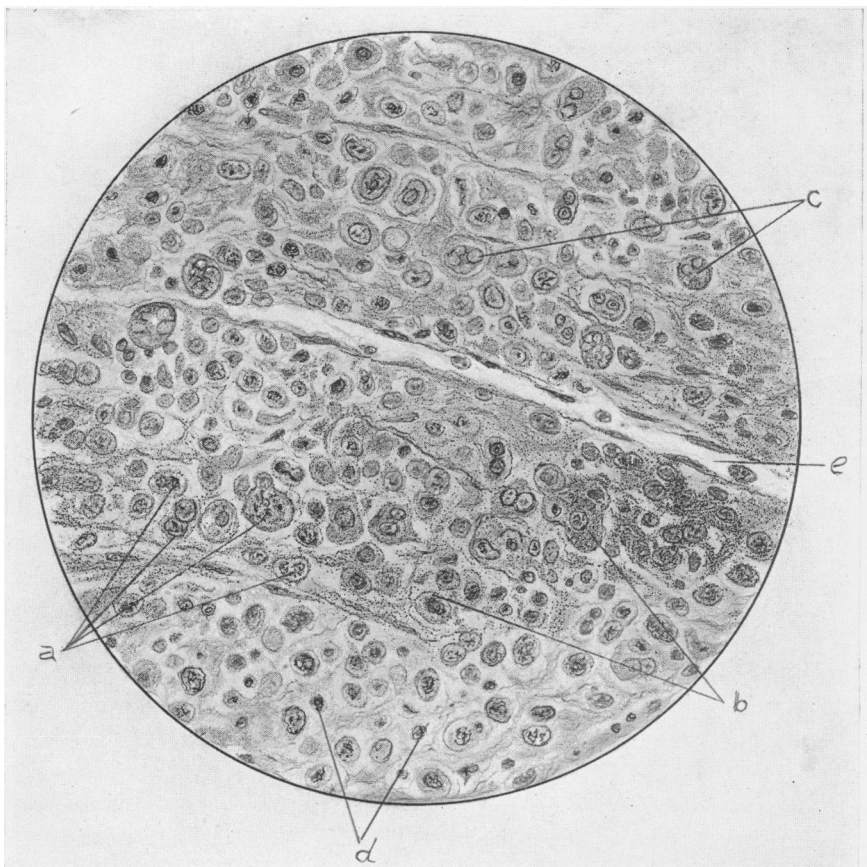

FIG. 1.—One microscopic field, not a composite drawing. a. Miototic figures and division. b. Alveolar groupings. c. Vacuolated neuculi d. Round cells. e. Capillary showing thin single celled wall.

the lymphatics, however Kundrat's group, he claims, is not to be confounded with the true neoplasms, although it is "one of the most malignant of diseases." Because this type of growth closely resembles pseudo-leukæmia, and that from the latter true lymphosarcoma may arise, we may infer a very close relationship to sarcoma, especially in view of the fact that we know of other changes of type.

Ewing states that there are two distinct forms of lymphosarcoma, namely: (1) Reticulum-cell sarcoma or large round-cell lymphosarcoma, and (2) malignant lymphosarcoma, (a) originating from the reticulum cell; . . . (b) from the lymphocyte. But "until the relation of the lymphocyte to the reticulum cell is fully established, the two conditions may be discussed together." Thus we see that the large class of lymphosarcoma is constantly changing as new findings are made; through the studies of many of our investigators, divisions and subdivisions are formed and as yet no classifications includes all established forms, even if the so-called borderline or transitional types were not taken into account.

As to the age incident, sarcoma is generally considered a disease of early life. This is true especially when contrasted to carcinoma, but it is also a disease of middle and advanced life. Therefore we must think of it as a disease of all periods of the life cycle.[15] It is interesting to note the age incidence of carcinoma and sarcoma; sarcoma occurs at an earlier age in the young than carcinoma, but both curves almost coincide from the ages twenty-eight to thirty-two up through age period forty-eight to fifty-two.

The most common seats of primary lymphosarcoma are (1) cervical (including the tonsils), (2) axillary, (3) inguinal, and (4) the retroperitoneal and mediastinal glands. The report of the sarcomas of the lymphatic glands (primary neoplasma of the lymphatic glands) by Coley [6] would lead one to think that the disease was more common than our investigations apparently show, but in this report we are hearing from a master surgeon in this particular field, and it is his exceptional opportunity to see a large number of this particular class of patients. His reports cover a period of twenty years up to 1915 and include cases of other surgeons' reports. The neck; neck and tonsils 103, other surgeons 22, total, 125; axilla 18, other surgeons 1; inguinal 17, other surgeons 2; retroperitoneal and mesenteric 10, other surgeons 12; mediastinal 1, other surgeons 0. An accompanying report of Hodgkin's comprises twenty-one cases. Investigation for a like number of years, 1902 to present, show in two large general hospitals; Hospital of the University of of Pennsylvania a total of twenty-three cases of true lymphosarcoma (neck 14, axilla 3, inguinal 1, all others 5); Philadelphia General Hospital a total of seven recorded.

For the privilege of operating upon this case and reporting it, he was indebted to Dr. W. E. Lee, on whose service in the Children's Hospital of Philadelphia the case was admitted and treated. At the time of this report the case is still under treatment.

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