

GENERAL STAFF MEETING
UNIVERSITY HOSPITALS
UNIVERSITY OF MINNESOTA

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I. ANNOUNCEMENTS

1. Raymond V. Brokaw, M.D., Executive Secretary, American Society for the Control of Cancer, New York, visited the Cancer Institute this week, praised the progress we are making, noted the increased activity of entire Institution, brought to us the best wishes of his organization. American Society for the Control of Cancer under direction of able, energetic, scientific leadership of Clarence Cook Little, former President of the University of Michigan, has abandoned former tactics of public ballyhoo. Now chiefly interested in development of cancer facilities for research and treatment, sponsorship of American Journal of Cancer, one of our Country's most notable additions to scientific literature, divides United States into four districts with special field representative in each, hopes to correlate, stimulate, and aid all cancer activities in this Country.

2. Give this year, if you have never given before, give more than you did last year if you are a regular subscriber to the Community Fund Drive which starts November 2. All students of present economic depression resist dole, emphasize importance of aid received from character building organizations, stress importance of contribution of all who are able, rather than from few who are blessed with abundance of worldly goods. Not charity, but an obligation we owe to our neighbor and ourselves. It is hope of those in charge of hospital subscriptions that every single Staff member will be represented. No single individual should excuse himself at this time. The solicitors may be around to see you, but in the meantime make up your mind as to the amount you know that you can afford and bring it to the Main Office. The payments may be made in one sum, or (deferred).

3. Stuart William Harrington, Assistant Professor of Surgery, Graduate School, University of Minnesota, Mayo Clinic, will address Medical students today at 4:00 P.M. in the Eustis Amphitheater on "Surgical Treatment of Intra-thoracic Tumors". An unusual opportunity to see largest single collection of

tumors of this type. Of interest to all, Staff members should be well represented.

4. Leukemia. Meeting last week developed good discussion. Official attendance 77. Discussions by Drs. Fallon, McQuarrie, Sagel, Anderson, Michelson, Stenstrom, Madden and Johnson. Brief report of Rochester Meeting of Minnesota Radiological Society. Arnold Anderson told of Tuberculin Surveys made by Regional Sanatoria. More than 23,000 school children tested, 16% positive reactors. Intimate study made of possible exposure and presence of pulmonary tuberculosis (by x-ray). Result 16% positive x-ray lesions, large number of old sources of infection and 47 new sources. Felt that surveys are successful and will be continued on yearly basis. Other cases showing positive reactions and negative films may be healed or infected elsewhere.

Case I is not youngest leukemic patient seen here. Blood showed peculiar changes. Excessive number of monocytes, some going back to pre-stem cell stage (reticuloendotheliocyte). Unusual finding as type was probably lymphatic. Most observers think of monocytic leukemia as a variant of myelogenous. Note peculiar behavior of count, (low for some time). Most leukemias seen at University Hospitals do not show classical persistent hyperleukocytosis. Many must be diagnosed from change in cell types. Splenic puncture gave practically same picture as blood smear. Adrenalin used during punctures to control bleeding. Note predominance of gastrointestinal symptoms (simplest expression of biologic reaction to illness). Hemo-peritoneum may be traumatic or due to disease as bleeding was present elsewhere.

Case II is not uncommon example of leukemia cutis. Special attention called to interest in developing clinical study of morbid anatomical features of this disease by all specialties. Formerly, a disease inter-

resting chiefly to internists and clinical pathologists; now of interest to all. X-ray demonstration of lung lesions (old healed tuberculosis, peribronchial leukemic infiltrations, and involvement of hylum). Gastrointestinal correlation of leukemic infiltrations with postmortem findings. Note leukemic notes by Ophthalmologist and possible presence of leukemic intracranial involvement or brain abscess (?), not confirmed because of absence of head examination. Leukemic skin changes may be specific or non-specific, usually associated with lymphatic leukemia often present before blood changes are diagnostic. Frequent diagnosis of skin Hodgkin's often an error and usual condition present is lymphatic leukemia. Leukemic infiltrate (rather characteristic) predicts development of future blood changes. Other skin lesions urticaria, exfoliative dermatitis, specific lesions (diffuse, nodular, plaque-like). Emphasizes value of biopsy of skin. Prognosis usually poor and expectancy short when skin manifestations occur. Frequent attendance at Dermatologic meetings shows from 10 to 15 such cases demonstrated yearly. Blood smears are confusing as both myelogenous and lymphatic features are present. Positive Wassermann in presence of severe constitutional disturbance due to non-syphilitic cause are not specific? Gastrointestinal studies made because of vomiting. No x-ray treatment given because of acute nature. Review of treatment of myelogenous leukemia emphasized different view point when ambulatory group is considered. During past five years, 25 cases of myelogenous leukemia treated at University Hospitals, 12 are known dead, 8 alive, 5 lost. Group too small to draw conclusion. Treatments give temporary relief. In past various observers used both large and small doses. When blood count goes down, even though it does not reach normal, patient feels better. Note signs of leukemic infiltration in kidney (laboratory) confirmed by postmortem. If uremia is impending because of these infiltrations, treatment is indicated if process is not acute. One pregnant woman carried through with normal child by x-ray treatment. Our experience with newer arsenic therapy limited to one pediatric patient; result excellent. Quinine sulphate also used. See Case II.

II. MORTALITY REPORT

June 1931

Malignant

A. Examined

Carcinoma of breast	m43
Carcinoma of cervix uteri	m69
Carcinoma of esophagus	m41

B. Not Examined

Carcinoma of larynx	m63
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Non-Malignant

A. Examined

Carbuncle of neck	m54
Cataracts, bilateral; broncho-pneumonia	m40
Coroner's case	m 1
Diabetes Mellitus	m42
Hyperthyroidism; pregnancy	m35
Lupus erythematosus, acute	m50
Osteomyelitis, forearm	m 6
Pemphigus	m54
Syphilis of central nervous system	m62
Stillborn, premature	m 0
Stillborn, premature	m 0
Tabo-paresis	m41

B. Not Examined

Anemia, aplastic, acute	m32
Burn of esophagus, lye	f 2
Encephalitis, chronic	m33
Endocarditis, rheumatic	m32
Fracture, cervical & thoracic spine	m45
Glomerulonephritis, chronic	m56
Glomerulonephritis, chronic	m41
Pneumonia, broncho	m45
Pneumonia, lobar	m47
Tuberculosis, milium	m 1
Tuberculosis, pulmonary	m50
Tuberculosis, pulmonary	m42

28 Deaths - 15 Posts - 53.6%.

MORTALITY REPORT (Cont.)

(Oct.) 1931.

Deaths and Autopsies

Fiscal year 1930-1931
 375 deaths 287 posts
 74% for year.

Fiscal year 1929-1930 74%
 Fiscal year 1930-1931
 July thru May 78%
 Fiscal year 1930-1931
 incl. June 74%
 Month of June alone 54%

Note: We failed to keep our gain because of the poor showing in June. This is a repetition of June 1930 and both years show same percentage instead of a 4% gain. This seasonal failure in June is a challenge. What is the answer?

Note: Total hospital mortality rate for year (including Health Service) 5.8% (Average for all hospitals 3%).

How do we stand? Last year a study was made by the American Hospital Association of the number of autopsies done in 2,129 hospitals on 201,815 institutional deaths. There were 49,572 autopsies done (24.5%) well above the American Medical Association's requirement of 15%. Twelve states are defective, Arkansas, Delaware, Idaho, Mississippi, Montana, New Hampshire, New Mexico, North Carolina, Oklahoma, South Dakota, Vermont, and Wyoming (all below 15%). Mississippi is the lowest, (4.8%). The following six states showed percentages of 30% or more, California, 32.2%; Colorado 33.3%; District of Columbia 45.6%; Minnesota 42.2%; Oregon 30.6%; and Canada 30.6%. You will note that Minnesota and the District of Columbia are both above 40%. Because of the difference in the two districts it can be readily seen that Minnesota has an enviable record. Using 3% as the average mortality figure, the total number of deaths in all of the 2,717 hospitals of all classes reported at the New Orleans' Convention was probably 205,820. On this group 49,648 autopsies were done (24.1%). Of 854 general hospitals, members of the association, 24,799 autopsies were done. Using 3% as the average mortality figure the autopsy percentage is 36.1%. This is certainly a splendid showing for American medicine. Abstract: The Bulletin of the Amer. Hosp. Assoc. V, 53,

Mortality Report

July, Aug., Sept.
 1931.

MalignantA. Examined

Brain, tumor of, cerebellar	m 8
Brain, tumor of cerebellar; meningitis	f13
Carcinoma of antrum	m67
Carcinoma of breast	f65
Carcinoma of cervix uteri	f49
Carcinoma of gallbladder	f47
Carcinoma of larynx	m78
Carcinoma of maxillary sinus	f37
Carcinoma of pancreas, head of	m49
Carcinoma of sigmoid flexum	m62
Carcinoma of stomach	m56
Carcinoma of stomach	f65
Carcinoma of uterus	f64
Sarcoma, neck	m18

B. Not Examined

Brain, tumor of, probable	f21
Brain, tumor of, probable	f45
Sarcoma, retroperitoneal	f61
Spinal cord, tumor of	f55

Non-MalignantA. Examined

Abortion, septic; peritonitis	f21
Adhesions, post-operative	f50
Anemia, pernicious	m50
Appendicitis, acute; peritonitis	f13
Appendicitis, acute	f42
Appendicitis, acute; post- operative ileus	f42
Arteriosclerosis, generalized; cataract	m83
Arteriosclerosis, generalized; senile psychosis	m--
Brain, hemorrhage of	f38
Cardiac disease, valvular; thrombosis	f44
Cholecystitis (common duct stone)	f33
Cholecystitis (common duct stone)	f43
Cholecystitis, chronic	m48
Cholecystitis, chronic	f53
Cirrhosis of liver	m30.
Diabetes Mellitus, gangrene	m38
Diabetes Mellitus	m31

Mortality Report (Cont.)Non-MalignantA. Examined (Cont.)

Diverticulum of sigmoid, perforated	f74
Endocarditis, subacute bacterial	f19
Endocarditis, subacute bacterial	f47
Empyema, chronic, transfusion shock	m 8
Enteritis, acute, non-specific	m 1
Fracture of skull; meningitis	m22
Gangrene of lung	f38
Glomerulonephritis, subacute	f18
Glomerulonephritis, sub-chronic	f37
Glomerulonephritis, subacute	m48
Hereditary sclerosis	m13
Hodgkin's Disease	f24
Hydramnios; peritonitis	f24
Hypertension, renal insufficiency	m28
Hypertension, renal insufficiency	f47
Hypertension, renal	m53
Hyperthyroidism, crisis	f50
Laceration of finger, tetanus	f30
Leukemia, acute lymphatic	m24
Myocardial insufficiency?	m73
Otitis Media; mastoiditis; brain abscess	m17
Parkinson's Disease	m61
Pellagra	f29
Pericarditis, rheumatic, adhesive	m21
Pneumonia, tuberculous	f23
Pneumonia, tuberculous	m31
Poliomyelitis, acute	f 6
Poliomyelitis, acute	m14
Pott's Disease; meningitis	m32
Premature	f1da
Premature	f9da
Purpura hemorrhagica	f18
Scoliosis	f12
Stenosis, pulmonary	m21
Stillborn	m 0
Stillborn	m 0
Stillborn, premature	m 0
Stillborn, premature	f 0
Stillborn, premature	m 0

B. Not Examined

Bronchiectasis	f26
Congenital bladder defect	m 2
Coroner's case, gasoline burns	m26
Diabetes Mellitus, gangrene	f53
Diabetes Mellitus, gangrene	m69
Osteomyelitis, femur	m 5
Peritonitis, primary; pneumonia	m60
Pneumonia, broncho	m65
Poliomyelitis, acute	m4mo.
Premature	f10da
Premature	m25da.
Pyelonephritis, cholecystitis	f44
Stillborn, premature	m 0
Ulcer, duodenal, perforated	m49

92 deaths

75 posts

82-%

Comment: Splendid showing!

Don't forget that 82% is our target for the year.

III. ABSTRACT:

Preliminary Note on a New
Method of Differentiating
the Testicular Tumors by
Biological Means

Ferguson, R.S., Downes, H.R., Ellis, E., and Nicholson, M.E.

The Amer. J. of Cancer, XV, 835-844 (April) 1931.

Accurate clinical differentiation of testicular swellings is difficult. Hydrocele, hematocele, gumma, tuberculous, gonococcal and non-specific epididymitis are frequently confused with neoplastic disease. Even trauma may prove confusing, as history of injury is frequently associated with onset of teratomata. Of 124 cases admitted to Memorial Hospital only 11% were free of local recurrence or metastasis on admission. 43% of group consulted physicians within month of first notable symptom. Any method which will reliably promote earlier and more accurate diagnosis of teratomata

should prove of great value.

Authors find neoplasms of the testis cause excretion of hormone whose presence in the urine can readily be detected by biological means! Interest aroused because of study made elsewhere on excretion of hormone of anterior lobe of hypophysis in other conditions. (See Staff Meeting Proceed. Vol. II, No. 30, May 14, 1931).

(Aschheim-Zondek test). First studied in urine of pregnant women. Appears from third to seventh day following conception and disappears eighth day post-partum, called "Prolan A". Second hormone present in smaller amounts called "Prolan B". Reaction positive in 98% of all pregnancies. Reaction tested on genital apparatus of immature female mice. Test is not without pitfalls as it has been demonstrated by Zondek on 55 cases of genital carcinoma in woman. Group showed 45 positive reactions (82%). 14 women with extragenital carcinomata gave 5 positive reactions. Test is positive for pregnancy providing carcinoma, especially genital carcinoma, can be excluded. Fact has apparently escaped most writers.

Zondek, March 1, 1930, reported 45 negatives on 45 healthy and diseased men and women. 30 instances of extragenital carcinoma in men were studied with 4 positive reactions showing non-specificity.

September 1930, Heidrich and Fels reported testicular chorionepithelioma associated with gynecomastia, in a 35 year old man. 2 months before death, 6 c.c. of patient's urine produced typical reaction. One month before only 4 c.c. was needed. Typical reaction occurred also following, 20 c.c. of blood serum injection. Calculated that one liter of urine one month before death contained 35,000 mouse units of Prolan A. Finding is much higher than the usual maximum in pregnancy, namely 10,000 mouse units, probably also identified Prolan B. Thought that test proved biological identity of chorionepithelioma in male and female, and found that excretion of hormone is quantitatively dependent upon the amount of tumor tissue present.

2 normal men negative; 10 men ill of generalized systemic disease, but with normal testes, ages 34 to 56, negative; extragenital carcinoma in male, 30 cases - 4 positive, 26 negative; genital carcinoma in male, 4 cases - 2 cancers of prostate with negative reactions and 2 sarcomas of the testis with clinically evident disease (not verified histologically) with 2 positive reactions; chorionepithelioma of testis of 35 year old man with positive reaction.

Summary:

Authors find positive reactions in all cases of teratoma testis examined, whether primary growth or resulting metastasis (clinically active). In all cases where combinations of radiation and surgery had brought about a complete clinical disappearance of the teratoma and its metastasis the reactions have been uniformly negative. They examined 36 instances of benign and malignant disease of the testis. This included 8 cases of teratoma with active disease, all positive; 4 cases of teratoma without clinical evidence of disease for three months to three years; and 24 lesions of the testis (benign) including all of the conditions usually found. (All negative.) 4 cases of teratoma clinically free of disease, 3 had negative reactions. Authors believe that there may be a pitfall in method as they are satisfied with a purely qualitative test. In doubtful cases, the test should be verified by extracting the urine and testing this material. As little as 1.2 c.c. produces positive reaction when there is probable evidence of teratoma testis. Note: This test is available through laboratory.

Impression: Positive test (to date) in males means malignancy. In presence of mass in testicle exploration is indicated in absence of malignant disease elsewhere. The test is also of prognostic value in determining absence of metastases?

Author's Summary of previous extra-pregnancy tests:

IV. CASE REPORTPLEURAL ENDOTHELIOMA WITH RECURRENCE.
Path. Rea.

The case is that of a 25 year old, former University student, who entered school in January 1925 at the age of 18 years and 8 months. A complete record of his various examinations and minor and major complaints is on file at the Health Service. It was thought that an intimate study of the same would be interesting because of the system of reporting to one organization with all degrees of complaints. Does this method result in the earlier diagnosis of disease in this case, malignancy?

First Examination

1-3-25 - Minor disorders, hay fever, and nasal obstruction. Physical examination negative.

Allergic

4-1-25 - Left eyelid drooping, severe pain yesterday.

5-3-26 - Acute conjunctivitis with hay fever. Eye wash given.

Trauma

10-27-26 - Dropped piece of steel on foot two weeks ago. Says it still pains him. Arches down. See Orthopedist.

10-29-26 - Pes planus.

Allergic

12-13-26 - Outside call, 11:30 P.M. Father called in stating that patient felt raw all over and was red and itching and very sick. Dizzy. No other symptoms. Had felt well all day but got chilled sitting in draft this evening. When seen, patient was feeling comfortable. Skin appeared normal. Heart, lungs, and abdomen negative. Respirations normal. Throat slightly reddened. Not suspicious-looking. Temperature 97.6. External heat. Aspirin for malaise. Report progress in morning.

12-14-26 - Temperature 98.4. Felt better this morning until he got up. Then skin started becoming red and itchy again. No other symptoms. When seen in Dispensary at 1:30 P.M., skin of face, chest, and abdomen was reddened with a resemblance to the rash of scarlet fever but rather blotchy, and with a few wheals. Patient complains of itching. No nausea, vomiting,

or sore throat. Throat not suspicious-looking. Treated at home. Dry paint with phenol (1%). Given hypodermic of adrenalin M x. Urticaria (?). Report tomorrow.

12-15-26 - Itching stopped immediately and reddened areas on skin faded out after hypodermic of adrenalin yesterday. Patient has been feeling well since then. Skin absolutely normal today; throat negative. Diagnosis: Urticaria.

Orthopedic

4-1-27 - Feet bother patient, especially toward evening. Alright in morning. Pes planus.

Gastrointestinal

4-18-27 - Indigestion. Absent on April 16, 1927. Pain in right lower quadrant yesterday. White blood count 5,900.

Eye

4-22-27 - Vision -- right 20/20, left 20/20. Eyes burn. No headaches. Refraction to be done later.

4-25-27 - Refraction to be done May 17, 1927 at 3:00 P.M.

4-26-27 - Eye examination in morning of April 27, 1927.

Lung

6-27-27 - To see Chest Specialist in regard to lung examination.

Skin

7-28-27 - Still complaining. Arches. See Dermatologist in regard to toes. Epidermophytosis of feet. Treatment - Whitfield's ointment (1/2).

12-2-27 - Eczema. 1% phenol, dry paint.

Trauma, Tumor?

1-11-28 - Slipped and fell on back on January 8, 1928. Now pains. Heat applied.

1-27-28 - Pharyngitis. Fedrin inhalation. Magma magnesia (for mouth).

2-14-28 - To see nose and throat department.

2-16-28 - Nose and throat apparently normal.

4-16-28 - Furuncle on left cheek. Cheek swollen. Arch put in stopping.

5-2-28 - Arch pains. Hot packs. Wearing Whitman's.

Here it is again?

6-7-28 - Sprain right 10th rib, costo chondral junction (Tumor brought to light by injury?)

10-16-28 - Feter oris (etc.)+. Continue treatment. Magna magnesia.

11-5-28 - Complains of bad taste in mouth and post-nasal discharge. Examination negative except for post-nasal discharge seen in nasopharynx. Tonsils cleanly out. Nose looks alright.

Treatment - x-ray of sinus and see again.

Sinus

11-9-28 - Sinus x-ray is negative. Probably has hypersecretory rhinitis.

1-6-29 - Temperature 98.2. Cold. Irritation inside of lower lip. Multiple complaints. Milk of magnesium mouth wash.

Periodic health examination

1-25-29 - Age 23. Previous operation, septum removed 1924, tonsillectomy.

Family history essentially negative except for paternal aunt who has mental difficulty. Positive symptoms: Hay

fever every August, leaves about September 15, Post-nasal discharge. Protein tests in past. No asthma. Pain over

lower right costal area for past ten

months brought on by a strain. Pains only when he bends to right side and presses on it forcibly. Note in record

of 1-11-28, complained of slipping and falling on back, two days previously, (but not in side). Patient did not consider himself in good health on 1-25-29

because of very slight gain in weight, pain in one side, and bad taste in mouth (allergic?). Physical examination

shows patient to be 88% standard weight. Vital capacity 5000 cc. Hemoglobin 86%.

Urine negative. Good cardiac response to effort. Stomatitis on mucous surface of both lips, post-nasal discharge, negative physical examination including chest.

In routine way, fluoroscopic examination done and shadow, size of egg, seen in lower lobe of right lung. Note: This

is most interesting observation. It would be interesting to learn what a fluoroscopic examination would have

shown one year before when he complained of spraining his back? after a fall, or his side later. Blood pressure 106/72.

Pulse 74. Positive findings: 1. Underweight. 2. Faulty posture. 3. Seasonal hay fever. 4. Post-nasal discharge.

5. Hypertension.

6. Stomatitis. 7. Mass in lower lobe of right lung. Recommend chest x-ray.

Xray

1-28-29 - Stereoscopic plates of the chest were made. There is a slight diaphragmatic pleurisy on the left side. The heart and mediastinum are normal. The left lung is entirely clear. At the right base there is a somewhat rounded dense shadow just above the diaphragm which appears to be within the parenchyma of the lung. Its medial margin appears to be anterior, however, and might begin in the pleura and extend inward. This shadow is fairly sharply outlined on its medial side, and the exact character cannot be determined. It suggests a metastasis, possibly a beginning endothelioma, or possibly a small encapsulated pleural effusion. I would suggest re-examination in a short time to determine more definitely the origin of this shadow.

5-3-29 - Temperature 97. Nasopharyngitis. Fedrin inhalation. Discontinue traces gradually.

X-ray

5-9-29 - Stereoscopic plates of the chest were made and compared with those previously taken. There has been no change whatsoever in the density at the right base which would indicate that the lesion is probably encapsulated pleural effusion and thickened pleura and not malignancy. There is no other evidence of pathology in the chest at this time. Opinion: Probable encapsulated effusion, right base.

6-7-29 - X-ray report given patient. X-ray to be done in 4 to 6 months.

X-ray

6-15-29 - Stereoscopic plates of the chest were made and compared with those previously made. The rounded shadow at the right base is still present but now shows very clearly adhesions to the diaphragm. This would indicate definitely that this is an inflammatory mass, probably an encapsulated effusion which has now developed union with the diaphragm. The possibility of this being nothing but a localized thickening of the pleura must also be borne in mind.

It has become slightly smaller and more irregular in shape. The appearance would suggest that spontaneous resolution is taking place.

Opinions: Localized encapsulated effusion or thickened pleura, right base.

Hay Fever

As the hay fever season was approaching, he went to Oklahoma to have treatments and he was not seen until November, 1929, at which time he complained of a swelling over the right lower chest and also severe pain. An x-ray again was taken with a diagnosis this time of probable endothelioma of the pleura at the right base.

Tapped

On Nov. 2 patient was tapped again and about 5 cc. of fluid was removed.

Tuberculin test was negative.

About a month later there was more swelling and pain over this area but no fluid was found and there was no relief from pain at this time as there was from the previous tapping.

Biopsy

Since the tuberculin test was negative and since the tumor seemed to be enlarging, it was thought advisable to take a biopsy, so on Dec. 26 a section of the tumor was removed at the Abbott Hospital. Report on this biopsy by Dr. Bell stated that the tumor was an endothelioma and did not seem very malignant microscopically. With this in mind, a radical removal of the tumor was suggested.

Operation

The patient was operated on about the first part of January, 1930. At the operation the surgeon said the mass was definitely encapsulated and could be very easily plucked out of the pleural cavity. The patient made an uneventful recovery and was discharged from the hospital on Jan. 18, 1930. Patient accepted a job in Chicago and felt perfectly well for one year. On Oct. 2, 1930, an x-ray of the chest showed the lungs to be absolutely clear.

Recurrence

However, on Jan. 9, '31 patient complained of pain over the whole left chest; said he could not take a deep breath; said this pain had started two days before. There was no rales; there was

marked posterior fulness over the whole left chest posteriorly except at the base and apex. On Jan. 15 there was systolic murmur heard over the apex. The patient did fairly well, however, until March 10, '31, when he began to fail rapidly. An x-ray was taken which showed the right side was clear, but there was a mass extending beyond the heart on the left side. Patient complained of severe pain in the chest and shortness of breath.

Marked growth

About June 15 patient was so dyspneic that an attempt was made to remove any possible fluid. A stab in the mid-lower axillary line and another somewhat more posteriorly was made, but no fluid was obtained. A prominence of the left chest both anteriorly and posteriorly, was noticed. A nodule the size of pea began to show low and laterally on the left side of the neck which grew to the size of a lemon at time of death.

Other side

On Aug. 7 patient was sent to the Asbury Hospital where an x-ray was taken which showed the whole left side was obliterated by a mass or fluid and that this mass was pushing the trachea and the heart way over on the right side, almost in the mid-clavicular line. Patient was markedly emaciated and very dyspneic and complained of severe pain over the left chest and sternum. There was marked crowding of the heart to the right and the apex beat could be felt on the right side in the area where the ribs had been dissected at the operation. The whole left chest was dull. No breath or heart sounds were heard. There was a marked tenderness over the sternum. The feet and ankles began to swell and patient complained of dryness of the throat. Temperature had been slightly elevated at times for the last 5 months. Patient became gradually weaker and died Aug. 26.

Autopsy

Patient is a white male, poorly developed and markedly emaciated; is 177 cm. long and weight is estimated at 120 lbs. Rigor and hypostasis are present and a rather marked pitting edema of the feet and ankles. No cyanosis or jaundice. Pupils equal and

regular. There is an embalmer's incision and suture in the right axilla.

An old healed scar extends from the 4th rib in the midaxillary line down to the costal margin at the level of the 7th rib on the right. There is definite asymmetry with bulging of the whole left chest. Six cm. of the 6th and 7th ribs had been resected in the midaxillary line at a previous operation. Over the sternum at the junction of the 3rd rib was a soft nodule which felt like an abscess. There was a mass the size of an egg on the left side of the neck and another nodule half the size of a walnut posteriorly at the level of the 6th cervical vertebra. There were hemorrhages over the left inguinal region. There were needle marks in the midaxillary line at the level of the 7th left interspace and also another one somewhat posteriorly and inferiorly at the level of the 8th interspace.

There was a slight distention of the abdomen which seemed to be fluid. The whole upper chest was curved about 1 cm. from the midline to the right. The trachea was displaced to the right and there was marked enlargement of the veins over the whole left chest. The left diaphragm was at the level of the costal margin and the right one was at the level of the 6th rib.

Peritoneal cavity contained about 1,000 cc. of a straw-colored fluid. This acites was evidently due to the marked intrathoracic pressure.

Appendix was normal.

Pericardial sac contained about 300 cc. of a straw-colored fluid.

Heart was small, but valves and heart muscle seemed perfectly normal.

Spleen weighted 65 Gms. and seemed normal.

Liver weighed 1600 Gms. and was normal except there was a metastasis about the size of a dollar in the ligamentum teres.

Gall bladder normal. Bile ducts normal.

Gastrointestinal tract normal throughout.

Pancreas was normal.

Adrenals showed post mortem necrosis.

Kidneys: right weighed 125 Gms. and the left 100 Gms. Both normal.

Ureters, bladder and prostate were normal.

Abdominal aorta normal.

Head and neck: organs normal.

Pleural cavities and lungs: right diaphragm and right pleural cavity seemed normal. No evidence of any tumor on right diaphragm. There was a little scar tissue present on the parietal surface of the diaphragm where the tumor evidently had been removed before. At the inferior margin of the right base posteriorly there was a small nodule and also another nodule on the anterior surface of the right lower lobe.

Left pleura was intimately adherent to the left diaphragm, left lung and the intercostal spaces of the left ribs. These adhesions had to be broken down in order that the lung could be removed. The lung was definitely necrotic in places and filled up the whole left pleural cavity, pushed the heart and the large vessels to the right side and was somewhat extended over into the right chest. On cut section the left lung consisted entirely of white rounded tumor areas varying in size from 3 cm. up to about 8 cm. in diameter.

With the history that the tumor was first noticed on the right side, it is impossible to say whether that tumor was a primary or secondary focus.

The mediastinum did not seem to be involved.

There were a few metastatic nodes present along the abdominal aorta just under the diaphragm.

Diagnosis:

1. Endothelioma of the pleura with metastases to the right and left lungs; most marked on the left; periaortic nodes; ligamentum teres of the liver; cervical lymph nodes.

2. Hydropericardium.

3. Acites

4. Emaciation

Microscopic sections of the lung show endothelioma. Whether the primary was on the right or left pleura cannot be determined. The tumor that was removed from the right pleura could have been either the primary or secondary nodule.