mary line. The diaphragm on the right was at the fourth rib, and on the left at the upper border of the fifth rib. There was a small amount of reddish cloudy fluid in the right pleural cavity, none in the left.

The right lung was free. The left was bound down by old adhesions in places. The trachea and bronchi showed a red mucosa and contained a moderate amount of mucopurulent material. The bronchial glands were negative. About half the upper lobe of the right lung showed frank gray lobar pneumonia. The lower lobe of the left lung in the upper part showed another extensive area of lobar pneumonia. No emphysema was made out.

The heart weighed 355 grams,—slightly enlarged. There was some arteriosclerosis present, mostly in the abdominal portion of the aorta, and one plaque in the ascending thoracic portion which there was a little question about. A piece was examined, and turned out to be arteriosclerotic. So there was a moderate amount of arteriosclerosis.

The liver weighed 3575 grams and was riddled with tumor tissue which presented on the surface in the form of large bosses, and larger and smaller masses were scattered all through the substance of the organ.

There were four stones in the gall-bladder, but the mucosa was negative and the bile-ducts free. The pancreas and duct of Wirsung were out of the picture. The spleen weighed 125 grams, rather small, a little fibrous thickening of the caspule, and the follicles were prominent, but it was practically negative.

The kidneys weighed 216 grams, the capsules were slightly adherent, the tissues rather tough, the markings rather indistinct. The whole organ presented the appearance of a moderate amount of arteriosclerotic nephritis. The pelves, ureters, bladder, the uterus and tubes were negative.

The esophagus was negative, but the stomach in the region of its anterior wall extending between the curvatures presented a large flattened mass of new-growth tissue. This mass began at a point about six cm. below the end of the esophagus and extended downward to within about ten cm. of the pylorus. The pylorus and mucosa outside of this growth were negative. The mass of new growth on the inside presented several areas of ulceration, but these remained within the wall of the stomach. There was no evidence of perforation. The new growth tissue in the liver and in the stomach was more or less continuous with a large mass of new growth in the situation of the retroperitoneal glands. Altogether this formed the mass that could be felt through the abdominal wall.

The microscopic examination of the tissue is of considerable interest, because Dr. Wright thinks that the tumor in this particular case is probably neurocytoma.

CASE 10032

An American girl baby ten months old entered September 28, 1923. The complaint was vomiting of three weeks' duration.

F. H. Her mother's first and last pregnancies ended in miscarriages. A great aunt was insane.

P. H. She was normally delivered at full term, weighing eight and three-quarters pounds at birth. She was breast fed three months, then put on imperial granum, milk, water and cane sugar. She sat up in six months. She had been well except for a recurrent blotchy skin eruption at intervals. At entrance she could not stand and had no teeth.

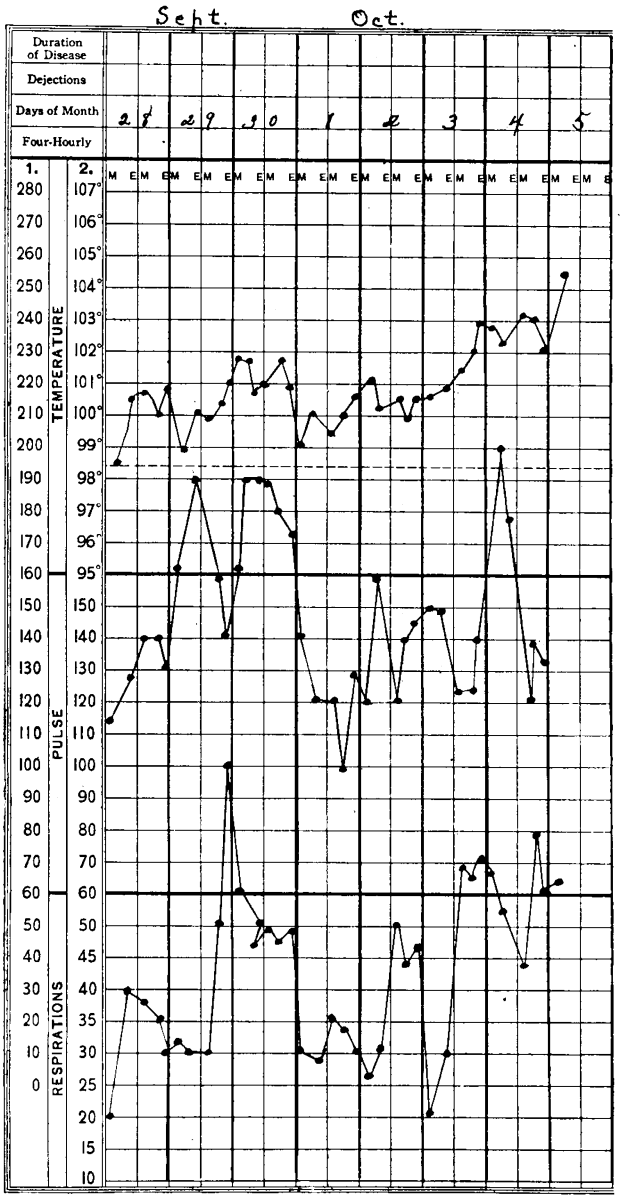
P. I. Three weeks before admission she was left alone out-of-doors a little while. When found she had a pebble in her mouth and one in her hand. That night she vomited once, curdled milk. During the following week she seemed fairly well except for occasional vomiting. For the past two weeks she had had forceful vomiting after each meal, had become fretful, and seemed tender to touch. For the past five days she had become very drowsy and had lost weight. For three weeks her bowels had been more constipated than usual. September 24 she passed something in the stool that looked like flesh. She had had four or five "spasms" of the extremities lately. The night before admission she had a severe spasm requiring chloroform for relaxation.

P. E. A well nourished baby, semicomatose, with flushed cheeks. Left ear drum slightly injected in the postero-superior portion. Right internal strabismus. Throat slightly injected. *Heart, lungs* and *abdomen* negative. *Extremities.* Hands clenched firmly. Moderate tremor. *Pupils.* Left slightly larger than right. Reactions of both to light sluggish. *Reflexes.* Knee-jerks normal. No Kernig. Brudzinski present.

T., P. and *R.* as shown in the chart. *Urine.* Sp. gr. not learned (insufficient quantity). Alkaline at one of two examinations, the slightest possible trace of albumin at one, occasional leucocytes at one. *Blood.* Hgb. 70 per cent., leucocytes 25,400, polynuclears 77 per cent., tendency toward youthful type; reds normal. *Stools* negative. *Lumbar puncture* September 28, 9 a. m., 18 c.c. clear fluid under moderately increased pressure. 75 cells. Globulin positive. Protein normal. September 28, 11 p. m., (therapeutic puncture.) 15 c.c. clear fluid under no pressure. October 1, 18 c.c. clear fluid under increased pressure. October 2, 20 c. c. clear fluid under increased pressure. Wassermann and gold solution negative. Total protein 91. Sugar

0.054. October 4, 30 c.c. slightly cloudy fluid under increased pressure.

Orders. September 28. Force fluids. Boiled milk diet. Castor oil 3 teaspoonfuls. Morphia gr. 1/80 s.c. once for convulsions. Individual precautions. Irrigate eyes with warm boric. September 30. Warm saline irrigations both ears every four hours. October 2. Hot saline irrigations both ears every three hours. October 4. Potassium boro-tartrate gr. v; six such powders. One powder dissolved in a little lukewarm water 2 i. d.



September 29 450 c.c. of saline was given intraperitoneally. September 30 slight lagging of the right angle of the mouth was noted. The ear drums were normal. October 1 the baby was more stuporous, refused a night feeding, and showed slight turgor. From eleven to twelve o'clock that night she had a continuous convulsion, followed at twelve by profuse perspiration with labored and irregular respirations. After a lumbar puncture she was quiet for the rest of the night. The following afternoon similar symptoms were again relieved in the same way. She had atypical Cheyne-Stokes breathing at intervals during that day. During the next two days she was in coma, and seemed to grow steadily worse. October 2 500 c.c. of saline was given intraperitoneally. The afternoon of October 4 she had two convulsions, somewhat relieved by lumbar punctures, and that evening a third. A third puncture gave 30 c.c. of slightly cloudy fluid. The respirations in the early evening were rapid

and difficult, and there were râles throughout the chest. She lay very quietly all night, becoming very stiff when disturbed. Early the morning of October 5 she died.

Discussion

BY DR. FRITZ B. TALBOT

The history of vomiting is the outstanding feature of this case. The character of the vomiting at first attracted little attention, but as it became worse it became forceful. If the symptom of vomiting alone were taken into consideration, the following causes should be ruled out. (1) Indigestion. The history of putting a stone in her mouth and of passing something by stool which looked like flesh at first sight might be suggestive. When indigestible materials are eaten, however, the symptoms are usually acute, and instead of increasing in severity, decrease. Vomiting due to indigestion is practically never forceful. (2) Recurrent vomiting (cyclic vomiting) may be forceful, but it comes at intervals between which there is no digestive disturbance. It never comes at this age. (3) Pyloric stenosis and spasm, on the other hand, are diseases of the newborn or of early infancy. Vomiting from these causes hardly ever commences as late as ten months of age. (4) The symptom, however, may be due to increasing intracranial pressure. The fact that it has become progressively more pronounced is in favor of this explanation.

Evidence in the physical examination confirms this assumption. One pupil is larger than the other. There is strabismus. Despite the fact that there is no Kernig sign, the Brudzinski sign is positive. The cell count of 75 is also consistent.

The diagnosis, therefore, is some infection of the cerebrospinal canal. The long duration practically rules out infections with pyogenic organisms such as the pneumococcus, streptococcus, and meningococcus. The negative Wassermann is against syphilis. The course of the disease is against encephalitis, in which one would expect the most acute symptoms at the onset.

The history and the clinical findings are typical of tuberculous meningitis. The leucocyte count and the differential count may be explained by the otitis media. Toward the end Cheyne-Stokes breathing confirms the assumption of intracranial pressure. The diagnosis of tuberculous meningitis with otitis media is therefore made on clinical evidence. The skin tuberculin is not recorded, and although there is no positive laboratory evidence of this diagnosis the other evidence is very much in its favor.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Tuberculous meningitis.
Bronchopneumonia.

DR. FRITZ B. TALBOT'S DIAGNOSIS

Tuberculous meningitis.
Otitis media.

ANATOMICAL DIAGNOSIS

Tuberculous meningitis.
Tuberculosis of a mesenteric gland.
Miliary tuberculosis of the spleen, liver and lung.

Dr. Richardson: The pia along the medulla, up along the pons, out the fissures of Sylvius, and between the frontal lobes showed a layer of grayish-yellow diffuse exudate, in places granular, which stuck the lobes together. On the

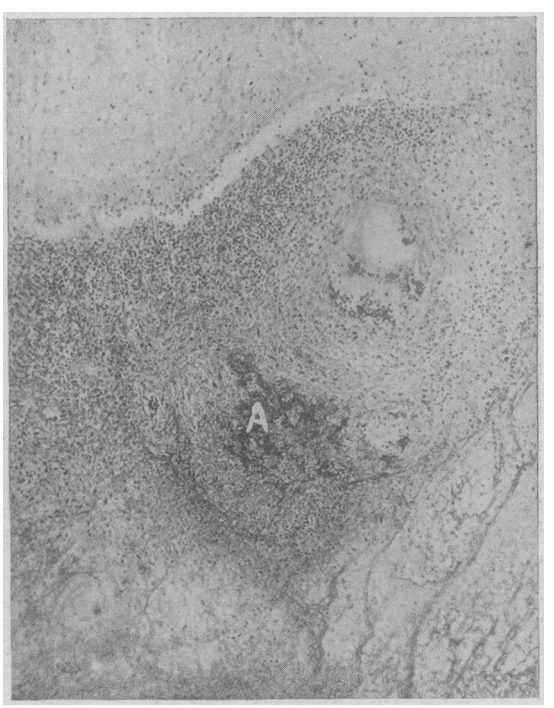


PLATE I.—Sections from the pia in Case 10032, showing exudate in tuberculous meningitis. Mass of tubercle bacilli at A. × 500.

Dr. William H. Smith.

Photomicrograph by Dr. Albert E. Steele.

right side of the brain between the corpus callosum and the mesial aspect of the right frontal lobe there was a granular area which was reddened and over which rested a small collection of blood clot. The vessels of Willis, sinuses, middle ears and the pineal and pituitary glands were negative. The ventricles showed no definite excess of fluid, but the choroid plexuses were dirty red and roughened. The brain weighed 865 grams. The tissue was rather wet, but otherwise negative. The pia along the spinal cord was somewhat reddened and roughened. The gray matter was a little redder than usual.

The skin and mucous membranes were very pale. The subcutaneous fat was in fair amount and the muscles were negative. There was no fluid in the peritoneal cavity. On the peritoneum in several places there were small hemorrhagic areas.

The appendix was negative. The esophagus, stomach and pylorus were negative, as were the intestines.

The mesenteric glands generally were negative, but there was one enlarged gland 2 cm. in diameter which showed marked caseous degeneration. The retroperitoneal glands were negative.

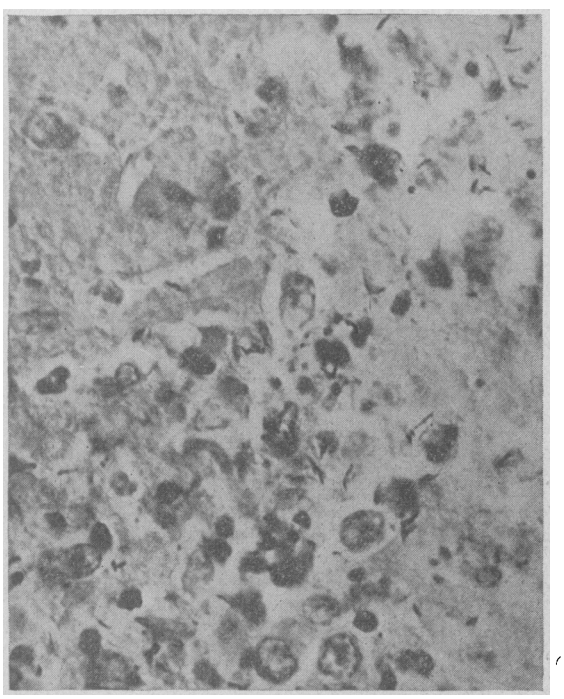


PLATE II.—Higher magnification of exudate at A in Plate I, showing tubercles in exudate. × 1500.

DR. WILLIAM H. SMITH.

Photomicrograph by Dr. Albert E. Steele.

The apices of the lungs were negative. There were no areas of consolidation. Macroscopically the tissue generally was pink and spongy and in a few places there were minute hemorrhagic areas. No definite tubercles were made out macroscopically, but microscopically there were a few tubercles.

The heart and circulatory apparatus generally were negative.

Macroscopically there were no definite tubercles made out in the liver, but in the sections one tubercle was found. The spleen showed no definite enlargement, but the surface of the organ showed many scattered tubercle-like nodules. In the substance tubercle-like nodules were seen here and there.

A well marked case of tuberculous meningitis extending down along the cord, with some miliary tuberculosis of the spleen, liver and lung, and tuberculosis of a mesenteric gland.

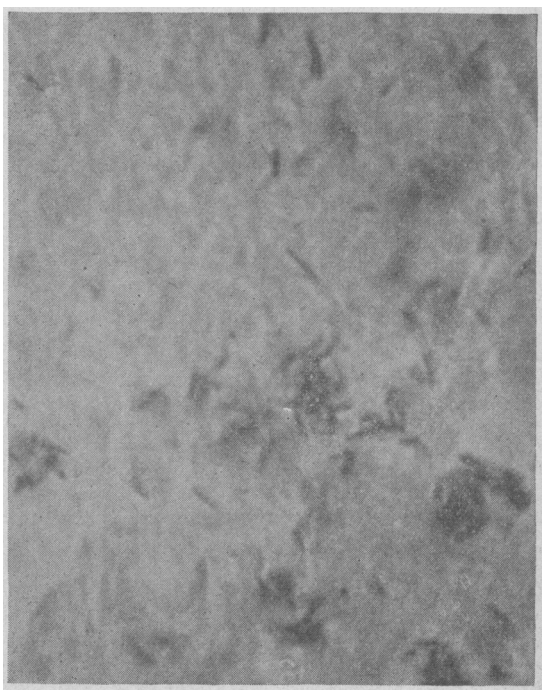


PLATE III.—Tubercle bacilli in exudate in Case 10032. × 2000.

DR. WILLIAM H. SMITH.

Photomicrograph by Dr. Albert E. Steele.

NOTE BY DR. TALBOT

This case is an example which can be taken as evidence in favor of gastro-intestinal infection, probably of bovine origin. The caseous mesenteric gland was apparently older than any lesion in the lungs. In infancy tuberculous infection is less often localized than in later childhood, and when it escapes into the blood stream it usually becomes meningitis and miliary tuberculosis. I cannot remember seeing any case of tuberculous meningitis which was localized in the nervous system alone.

The lesson that such a case as this teaches is prevention of infection in children, especially during infancy. It is due to fear of such infections that cows' milk is generally either pasteurized or sterilized today, while a decade ago it was used almost entirely in the raw state in this city.

CASE 10033

An English janitor of fifty-seven entered December 26 complaining of loss of weight.

F. H. Unimportant.

P. H. Negative except for an injury to his