CASE 1

Submitted by: Dr. E. C. Alvord, Jr., University of Washington School of Medicine

Ref. No. Np 148.

This baby boy, the grandson and nephew of physicians, developed recurrent episodes of purulent leptomeningitis beginning at age nine months when for one day he was noted to keep his head turned to the left. For the previous two weeks he had had several episodes of fever, for which antibiotics had been given, but otherwise his growth and development had been normal. Physical examination revealed that he resisted all movements of his neck. Purulent meningitis was diagnosed and treated, but relapsed several times, and he developed internal hydrocephalus, which required ventriculo-atrial shunt at age twelve months. He died at age fourteen months after another episode of meningitis and acute staphylococcal septicemia and bacterial endocarditis.

At autopsy a foreign body, 16 cm. long and 1 to 2 mm. in diameter, was found within and beneath the spinal dura extending from the cervical region down to the cauda equina. No portal of entry could be identified in skin, gastrointestinal tract or dura.

CASE 2

Submitted by: Dr. R. A. Clasen, Presbyterian-St. Luke's Hospital, Chicago, Illinois

(A60-205)

This is the case of a white female who suddenly developed left-sided convulsions at the age of 14 years. Her pediatric history was non-contributory. At the age of 6 years and 7 months she had uncomplicated measles. At the time of her first admission to this hospital she was in a confused state following seven focal seizures. There were no positive physical findings and the neurological examination was within normal limits. A spinal tap revealed clear colorless fluid under a pressure of 400 mm. but the patient was uncooperative. Examination of the spinal fluid revealed no cells and a protein of 31 mg.%. An EEG showed a right fronto-temporal slow wave focus with a spike seizure in the mid-temporal area. She improved gradually and was discharged on the 8th hospital day.

Following her discharge the EEG abnormalities increased in severity. She was, therefore, readmitted one month later for a spinal tap. This revealed clear colorless fluid under a pressure of 174 mm. Chemical examination revealed: protein, 31 mg.%; sugar, 75 mg.%; chloride, 125 mEq/L and a negative colloidal gold curve. There were no cells and the Wasserman was negative. Because of the fact that the patient planned to return to school and there was a measles epidemic at this institution, she was given prophylactic gamma globulin following her discharge on the second hospital day.

The patient subsequently visited her school but did not attend classes. On the 12th day after her discharge she retired in good spirits. On the following morning she could not be aroused. She was brought to the hospital immediately. Her pupils were fixed and dilated and there was a bilateral papilledema. Just after admission her respirations ceased. She was placed on the Bennett respirator, given hypertonic urea and taken to surgery. Bilateral burr holes revealed moderate pressure. The left ventricle was cannulated and blood tinged fluid under moderate pressure was obtained. Cannulation on the right produced a mixture of softened brain and blood. Following surgery the patient did not regain consciousness and never again breathed spontaneously. She expired one week later, 3 months from the onset of her symptoms.

At autopsy the significant findings were confined to the brain. When the scalp was reflected, cerebral tissue exuded from the burr holes. The brain was extremely soft and could be removed only with great difficulty. A large mass of clotted blood replaced a portion of the right temporal lobe. The brain was sectioned following formalin fixation. It showed marked anoxic changes but there was no gross evidence of tumor. The sections submitted are from the area adjacent to the hemorrhage. Cerebral tissue obtained at the time of autopsy was incubated in eggs and tissue culture. A viral agent was isolated in monkey kidney cells. Its cytopathologic effects were specifically neutralized by measles antisera.

Findings: 1) Inflamm disease – ? measles encephalitis
2) ? Neoplasm. Majority

CASE 3

Submitted by: Dr. Mary I. Tom, University of Toronto Medical School

A baby girl, 3 months of age, was admitted to hospital 24 hours before death. She was pale, unresponsive and convulsing. Reflexes were hypertonic and she reacted very slightly to painful stimuli. A grade II systolic murmur was heard over the left sternal border. Lumbar puncture showed no increase in pressure, 83 mg. of protein per 100 cc. and 131 mg. of sugar per 100 cc. The blood white count was 23,400 per cu. mm. with 39% neutrophils, 55% lymphocytes and 1% eosinophils. The temperature was subnormal and she became pale and cyanosed prior to death.

The only finding revealed at general autopsy was moderate left sided hypertrophy of the heart. The brain weighed 460 gms. unfixed, and was grachycephalic in appearance. Microgyria, absence of the cingulate gyrus and hypoplasia of the corpus callosum were prominent features.

The microscopic changes seen in the accompanying slide were most prominent throughout the brain stem. The mammillary bodies were normal.

CASE 4

Submitted by: Dr. John T. McGrath, University of Pennsylvania,
The School of Veterinary Medicine.

Ref. No. 56-114.

Female, 2-1/2-month-old Holstein calf.

Animal was born November 28, 1955; was normal and nursed dam until December 9, 1955. Attempts to feed calf milk from bucket were unsuccessful. Animal ate calf starter immediately and attempts to give milk were discontinued.

February 5, 1956, animal appeared listless with a staggery, incoordinated gait, constant twitching of eyelids, and hyperkinesia of the head to the right. Animal was prostrate the morning of February 6--constant extension of limbs with occasional spasms with marked opisthotonos. Blood studies, including counts, sugar, calcium and phosphorus, were normal.

Necropsy was essentially normal with the exception of the brain. The frontal, temporal, and parietal gyri appeared swollen, soft, with a distinct yellowish cast.

CASE 5

Submitted by: Dr. K. M. Earle, University of Texas School of Medicine.

This 18 year old colored male was first seen at John Sealy Hospital on February 20, 1960. History revealed that during the previous 5 weeks he had noted the onset of diplopia, frontal headaches, vomiting and lethargy. Physical examination revealed bilateral papilledema, paralysis of upward and lateral gaze, and decrease in visual convergence. His gait was unsteady and he would stagger to the left and to the right. Skull films were negative, but ventriculograms demonstrated bilateral dilatation of the lateral ventricles with a large indentation into the posterior portion of the third ventricle and compression of the aqueduct.

On February 25, 1960, a Torkildsen procedure was done. Postoperatively he received x-ray therapy totalling 5,025 r which was administered in multiple doses over a six week period.

Following dismissal from the hospital he did well until May 11, 1960 when he suddenly developed severe frontal headaches. Examination revealed bulging of the operative site, and a ventricular puncture provided temporary relief. However, on May 13, 1960, the patient suddenly became apneic and expired.

The brain weighed 1399 gms. The gyri were flattened and there was narrowing of the sulci. A midline section revealed an irregular, grayish-white tumor mass in the region of the pineal gland which measured 3x3x2 cm. The colliculi were depressed and neoplastic tissue appeared to be invading the tectum, rostral mesencephalic structures, and the posterior part of the third ventricle.

CASE 6

Submitted by: Dr. H. J. Peters, Eugene Talmadge Memorial Hospital, Augusta, Ga.

(VAH Augusta, Ga., #10961) M.G., a 60 year old white, married male was admitted to the hospital on 1 October 1944 and died in the same institution on 30 September 1960.

According to the wife, the patient's illness began in 1929 as manifested by increasing personality changes. By 1944 these changes had become so severe that on one occasion he was picked up by the police and admitted to a hospital. He exhibited a definite behavior of grandeur. Neurological examination (1944) revealed a small contracted pupil which reacted only slightly to light. The clinical diagnosis was Paresis. Most of the laboratory examinations performed were within normal limits including the blood Wasserman reaction. The spinal fluid examination revealed a 4 plus Wasserman reaction and a colloidal gold curve of 4444210000. A review of the past history indicated that the patient had served in the Armed Forces during and after World War I. He apparently contracted syphilis overseas and, in 1920, was treated; details concerning the disease and the subsequent treatment were not known. The familial history was not contributory.

The patient was now treated with malaria followed by chemo-therapy. Mentally the patient did not improve but deteriorated. He cooperated poorly and soiled himself frequently. In 1948 his gait became unsteady and by 1951 he was mentally completely out of contact. At this time, a diagnosis of hypertensive cardiovascular disease was also made. Annual physical examinations for many years subsequent to 1951 were reported as showing no appreciable change. In 1958 inguinal herniorraphy was performed.

About 5 weeks before his death the patient was noted to have a cold. Twenty-six days before his death the patient felt very weak and he fell while on his way to the hospital chapel. Following the accident he perspired profusely and indicated to have pain in his left arm and shoulder. Subsequently, he was noted to stumble while walking and, 22 days before death, a considerable increasing difficulty swallowing, which necessitated liquid feedings. Eighteen days before his death an x-ray examination of the chest revealed a mass in the left hilar region suggestive of carcinoma. In addition there was a large calcified node in the midportion of the right lung previously diagnosed as "calcified tuberculosis." Nine days before death the weakness in the right foot was more pronounced and this together with the difficulty of swallowing was suspected to represent the signs of a stroke. The deep tendon reflexes on the right side appeared increased and a questionable right Babinski sign was elicited. During the last day of life the patient became less responsive and finally exhibited signs of peripheral vascular collapse and severe pulmonary edema.

The essential gross finding in this autopsy (FA 60-91) was a bronchogenic carcinoma, approximately 4 cm. in diameter, involving the upper lobe bronchus and the main bronchus of the left lung, and metastases to the liver.

The brain which externally was not remarkable, weighed 1400 gms. The cerebral arteries contained little atherosclerosis; the circle of Willis was symmetrical. During the course of dissection a small, white-gray, granular tumor measuring 2x1 cm. in largest dimensions was noted in the midline in the region of the pineal gland. This was the only tumor in the brain. A slight dilatation of the third and lateral ventricles was noted.

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CASE 7

Submitted by: Dr. John A. Wagner, University of Maryland School of Medicine, Baltimore, Maryland

The section is from the cerebellum from a newborn, premature infant who died at the age of 17 days, following birth by cesarean section.

The early phases of the mother's pregnancy were without incident. At approximately the 26th week, she was found to have epidermoid carcinoma of the cervix. A course of radium therapy was applied by interstitial and contracervical techniques, and in addition, approximately 2000 roentgens of deep 2 voltage (Cobalt 60) radiation therapy was applied to the lower abdomen. The death of the infant was anticipated but did not occur. Accordingly, she was delivered by cesarean section, the baby being vigorous and viable at birth. However, gradual, progressive anemia occurred, and the infant died in a state of profound anemia and thrombocytopenia on the 17th day. General autopsy findings revealed an atrophy of the bone marrow and secondary changes, presumably resulting from the anemia. The brain in general shows extensive swelling and many punctate hemorrhages with virtual hemorrhagic necrosis of the cerebellum. The microscopic examination of the cerebral cortex unearthed extreme edema of the white matter and swelling of the glia with disappearance of most of the paraventricular cells.

CASE 8

Submitted by: Dr. J. Bebin, Henry Ford Hospital, Detroit, Michigan.

Ref. No. A60-489

This 42 year old man was first admitted to Henry Ford Hospital on July 10, 1960 with a history of two months easy fatigability, weakness and some weight loss, and a leucocytosis of 24,100. In addition, he had had a low grade fever and had been shown to have impairment of his liver function studies.

On examination, the patient was lethargic, had a short attention span, a left homonymous hemianopsia, a left facial weakness, and a left hemiparesis. He had left-sided extinction with amorphagnosia, astereognosia and constructional apraxia, and dressing apraxia on the left. The fundi were negative and showed no evidence of papilledema. The heart and lung examination, as well as the remainder of the general physical, was within normal limits.

On July 18, 1960 a right percutaneous carotid arteriogram was done which showed a shoft of the right anterior cerebral artery to left with the right middle cerebral artery elevated and slightly displaced medially. The same day the patient was taken to the Operating Room where a right frontal temporal craniotomy was performed with removal of 115 gms. of a hard, firm neoplasm which grossly resembled a "meningioma." Following this, the patient had some spontaneous drainage of purulent material from beneath the scalp flap which required re-elevation of the flap on August 2, 1960. The patient was then discharged on August 7, 1960, and readmitted on August 22, 1960 because of his developing right-sided headaches, again drainage from the flap and increasing weakness of his left side with pain in the right eye.

At this time, the patient was alert but slow mentally. He was well oriented. He demonstrated a left facial weakness. There was no papilledema. The reflexes were increased on the left side. There was an extensor plantar response on the left. There was almost total disregard for the left extremities and the patient still had a complete left homonymous hemianopsia.

On August 23, 1960 a repeat right carotid arteriogram showed even more shift of the right middle cerebral than before. A right frontoparieto-temporal craniectomy was done and removal of 70 gms. of neoplasm was carried out.

On August 30, 1960, 42 gms. of tumor were removed from the right temporal region. Following this the patient's course was one of gradual deterioration with an increasing bulging mass in the operative site. The patient expired on September 21, 1960.

At the autopsy a large tumor, measuring 8.5x5x7 cms., was found in the right temporal lobe. The tumor was firm and lobulated. On sectioning, it contained extensive areas of hemorrhage and necrosis. Other findings were bronchopneumonia and generalized arteriosclerosis. No other neoplasm was encountered.

CASE 9

Submitted by: Dr. K. T. Neubuerger, General Rose Memorial Hospital, Denver, Colorado.

A 53 year old man was admitted to the hospital for investigation of fever of unknown origin following an upper respiratory infection one month before admission. General physical examination revealed no abnormalities except for leucocytosis with shift to the left. Laboratory studies were non-contributory. Neurologic examination: Deep tendon reflexes were physiological and no pathologic reflexes were elicited. The cranial nerves were intact except for the optic nerves. Difficulty in vision in the right eye has progressed to complete blindness; funduscopic examination showed edema of the nerve head and a few punctate hemorrhages. In the left eye, there was pallor of the optic disc and a left superior temporal quadrant defect. Arteriography demonstrated some elevation of the right anterior cerebral artery. Fluid obtained by lumbar puncture was under normal pressure but the spinal fluid protein was 140 mgm.%. Craniotomy was performed the next day. There was thickening of the right optic nerve proximally, with extension into the optic chiasm. The left optic nerve appeared normal. Arteriosclerosis was seen in both carotid syphons beneath the optic nerves but no other abnormalities were encountered. Postoperatively, the patient's temperature became normal but after ten days fever again appeared and the patient gradually became demented. No significant differences in neurologic signs were noted after operation with the exception of slight left lower facial weakness. One week before his death, the patient developed marked nuchal rigidity. Lumbar puncture at that time yielded slightly xanthochromic fluid with 10 white cells per c.mm. The protein was 80 mgm.% and bacteriologic studies were negative. His course was down-hill and he died five weeks after admission. The only gross change was enlargement and abnormal appearance of the right optic nerve. A few peripancreatic lymph nodes were enlarged.

CASE 10

Submitted by: Dr. Eleanor Roverud, Woman's Hospital of Philadelphia, Philadelphia

60-A-1025

This 25 month old white female was well until age 15 months when she developed gastroenteritis in December 1959. On the second day of illness the child fell down while walking and had an episode of left horizontal nystagmus with the head turned to the left. She was conscious, had a fever of 102°F. All blood and spinal fluid studies were negative, including viral studies. She had been given compazine at home and in the hospital was treated with ACTH, cortisone, achromycin and phenobarbital. Within two weeks she developed ascending paralysis. Later she developed episodes of ballistic and choreiform movements, as well as tremors of the extremities. Later she had difficulty swallowing and suffered several episodes of aspiration pneumonitis. By July she had regained the use of her limbs and was able to roll over. The abnormal movements ceased. During August the extrapyramidal signs recurred with accompanying rigidity. She lost all voluntary movement except sucking, smiling and a weak grasp. In October 1960 the child became comatose, had left-sided Jacksonian seizures and a fever of 107°F. Again all viral studies were negative. She died the next day never having regained consciousness.

At autopsy the outstanding alteration of the brain was the decrease in size and discoloration of the putamen and to a lesser extent of the caudate nucleus and the globus pallidus. The liver was larger and heavier than normal and had a pale yellow, nongreasy cut surface. There was aspiration pneumonitis.

CASE 11

Submitted by: Dr. Rosa E. Fiol Rodriquez, University of Puerto Rico
School of Medicine, San Juan.

Ref. No. A-5220

This 5 month old baby girl had been running high temperature for three months prior to admission. At onset she had had a mild cough and had been hospitalized for six weeks. The mother took the child home without an official discharge. The baby was readmitted on July 15, 1960 with fever, marked dyspnea, ronchi and vomiting. She died five hours after admission.

Autopsy revealed mongoloid facies, fusion of the middle and ring fingers and of the second and third toes of the right foot. Important microscopic findings consisted of partial atelectasis of the lungs, a mild early type of cystic disease of the liver and an aberrant pancreas in the region of the pylorus.

The brain surface was flattened. The gyral pattern was normal. The floor of the third ventricle was thin and bulging. Coronal sections revealed moderate dilatation of the lateral ventricles. The glomus of the choroid plexus bilaterally was almost black and prominently papillary.