Case 1996-1

Submitted by: Eric J. Huang, M.D., PH.D. and Richard L. Davis, M.D.
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Case Reference number: UA95-90

Clinical History: The patient was a 32 y.o. woman with a long standing disease beginning at age 15, admitted with a one-day history of dysarthria, gait ataxia, increased right-sided weakness, and a six week history of a 20 pound weight loss with post-prandial nausea.

At age 15, the patient had fatigue, arthralgia, and hypertension. At that time she had a biopsy of a subcutaneous nodule and a diagnosis was made, but the records and slides were not available. She was treated with steroids and did well until 1989, when she developed fatigue, arthralgia, intermittent diplopia, and Raynaud's phenomenon. She had an extensive workup that showed: high titer ANA with a speckled pattern, negative SM, SSA and SSB antigens, rheumatoid factor, normal C3, low C4, normal ESR, C-reactive protein, negative anti-JO-1, and no antiphospholipid antibodies. She had mild sclerodactyly, Raynaud's phenomenon, and livido reticularis. During the next two years she developed intermittent bilateral amaurosis fugax, intermittent diplopia, right-sided tinnitus, progressive weakness, arthralgia, and arthritis. She was on various steroids and aspirin. She was relatively stable with persistent right-sided weakness and hypertension.

At admission, imaging studies showed changes consistent with intermediate and remote infarcts. She was treated with high dose steroids; during the workup, she was found unarousable one morning, and imaging showed extensive intracerebral hemorrhage. She went rapidly downhill and died.

Necropsy Findings: Left thalamic and intraventricular hemorrhage, recent, with multiple recent and intermediate evolving infarcts.
Multiple organ involvement by same process as in brain; (kidneys, heart, stomach, spleen, small and large intestine, ovaries, skeletal muscle, lymph nodes, adrenal glands, and peripheral nerves.)

Material submitted: One (1) H&E stained slide of either cerebrum or midbrain;
One 2X2 Ektachrome slide of gross basilar vessels

CASE 1996-2

Case submitted by: Cheryl Ann Palmer, M.D.
University of Alabama at Birmingham

CLINICAL HISTORY: This 51 year old man was in his usual state of health until 2/93 when he became acutely disoriented while on a boat trip. He was taken to a local hospital and found to be hypothermic and hyponatremic. Cranial magnetic resonance imaging was unremarkable. He was treated for the syndrome of inappropriate anti-diuretic hormone with an increase in his serum sodium but his mental status continued to be poor with disorientation and increasing somnolence. Neurology was consulted and felt that the patient was suffering from narcolepsy. He was treated with Ritalin with improvement in his somnolence but with continued disorientation. He was given the diagnosis of a possible midbrain infarction and discharged. However, his mental status did not improve, and in 9/93 he developed worsening dementia with hallucinations requiring an admission to a local psychiatric hospital. Treatment with various psychotropic medications did not improve his status. In 3/94, he was admitted to a local hospital for a evaluation of worsening dementia. Work up included lumbar puncture which revealed normal protein, glucose, 0 WBC's and negative VDRL; ESR 74 with negative RF and ANA, normal B12, normal TFT's, normal cortisol levels, urine drug screen negative, HIV negative, and lyme titers negative. An admission chest x-ray revealed a small right pleural effusion with analysis consistent with an exudate, but all cultures were negative. A chest computed tomography revealed small bilateral pleural effusions but no masses or adenopathy. During his hospitalization, a mass of the left jaw was also noted. He was transferred to the Birmingham Veteran's Administrative Medical Center.

PHYSICAL EXAM: VITAL SIGNS: T-97.5, BP-115/60, P-70, R-16. GEN: Slightly obese, awake, and responsive. NECK: approximately 6 x 4 cm firm mobile, nontender mass in left submandibular region; no carotid bruits. HEART: RRR without M, R, or G. NEURO: Alert, oriented to name and place, fully awake but confabulating with a decreased attention span, and poor cooperation. He could repeat well, but had 0/3 recall at 3 minutes. Serial sevens were poorly performed. A left Horner's syndrome was present but other cranial nerves were intact. Motor strength was 5/5 throughout with increased tone and occasional myoclonic jerks. DTR's were 2 + and symmetric Babinski signs were absent. There were no cerebellar deficits and the sensory exam was normal.

HOSPITAL COURSE: A repeat cranial MRI revealed global atrophy of the cerebellum and cortex. EEG showed diffuse slowing and disorganization into the delta and theta frequency range consistent with a moderate to severe encephalopathic process. Fine needle aspiration of the submandibular mass was performed with cytology consistent with a squamous cell carcinoma. Neck and chest CT showed a 2 x 3 cm well circumscribed mass located behind left sternocleiodomastoid muscle and right lower lobe atelectasis with mid-left pleural thickening but no masses or adenopathy. Oncology was consulted and felt that due to the patient's advanced dementia, chemotherapy or radiation therapy was not indicated. The patient was discharged to a nursing home and expired approximately 2 months later. An autopsy was performed and a diagnosis confirmed.

Material Submitted: H&E stained section of mesial temporal region.

CASE 1996 - 3

Submitted by: Brian Harding, BM DPhil FRCPath
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Great Ormond Street Hospital for Children
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Case reference number: NP 83-94

Clinical History:

This boy was delivered by caesarian section for breech presentation at term. Facial asymmetry, torticollis and bilateral congenital hip dislocation were seen soon after birth. Early development was normal but he presented at 21 months with developmental delay, hearing loss and spastic diplegia: developmental assessment indicated 8-9 months delay, brainstem evoked potentials confirmed sensorineural hearing loss. By 2 years there was severe delay, by 3 he was definitely regressing and by 4 he was unable to crawl, with marked spasticity and bulbar palsy. Head circumference remained on the fiftieth centile. Generalised seizures commenced at 5 years and he died of a chest infection at the age of 6. His younger brother presented with hearing loss at 7 months of age. At 4 years old he is now developmentally at a 3 year level and there is significant speech delay.

Necropsy findings:

There was mucopurulent bronchitis and the lung parenchyma was studded with irregular pale firm nodules. Other viscera were unremarkable. The fixed brain was small and weighed 1050g. Coronal slices revealed dilated ventricles, very hard ivory white centra semi-ovalia and cystic disintegrating subcortical U-fibres, thin callosum, soft and greyish-brown basal nuclei and variably thinned cortex. The aqueduct appeared compressed by firm white periaqueductal tissue, the internal structure of pons and medulla was blurred, and the cerebellum showed global folial atrophy, indistinct dentate nuclei and firm greyish white matter.

Material submitted: Frontal lobe section stained with haematoxylin-eosin.

Case 1996 #4

Submitted by:
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Case Reference number: 90NPA19

Clinical History: The patient was an 89 year old former tool and die foreman who was active and asymptomatic until the age of 79 years, when he began to demonstrate poor judgement, incontinence, and memory loss. He had occasional episodes of violence and during one episode killed the family dog. Six years prior to death he began to wander more frequently and was often disoriented to time being no longer able to drive. Four years prior to death he was placed in a nursing home and frequently wandered off. He continued to have episodes of combativeness and agitation. He also began to fall resulting in frequent hospitalization for evaluation of possible arrhythmia or other cardiovascular abnormality. Three years prior to death the patient was operated on for bilateral entropions with a poor postoperative result. The patient continued to have frequent falls but radiographs never revealed fractures. Three years prior to death his CT scan revealed cerebral atrophy. His family history included a mother who died of cancer at age 86 years and a father who died of cardiovascular disease at age 76 years. The patient reportedly had three sisters and one brother aged 70, 88, 91, and 76 years (with the 88 year old having a history of dementia of unknown etiology).

Material Submitted: 1 H&E Section and 1 unstained section which includes a portion of cingulate gyrus, thalamus, and parietal lobe.

CASE 1996 [5]

Submitted by: Hans H. Goebel, Division of Neuropathology, Mainz University Medical Center, Langenbeckstrasse 1, D-55131 Mainz, Germany

Case reference number: N2489/94

Clinical History:

This 63-year-old woman had impaired sensitivity to touch and absent sensitivity to pain on the left leg, the first fingers of her right hand and her right jaw as long as she could remember. She also had impaired hearing on the left which progressed over the years. When 8 years old she experienced diphtheria which subsided without residual symptoms. When 55 years old, she had surgery of her stomach owing to recurrent ulcers and an amputation of her right second toe. A paternal aunt and grandmother also had hypacusis on the left, but no relative had any sensory deficits. Both her daughters are healthy at the ages of 37 and 38 years, respectively. Since the age of 52 years she had recurrent corneal ulcera resulting in decreased vision and bilateral corneal transplants at the age of 63 years.

Neurological examination at the age of 63 years revealed corneal ulcers bilaterally with respective impaired vision, hypesthesia and hypalgesia of her oral cavity on the right and of her right nasal cavity. She had left-sided hypacusis and generalized lack of deep tendon reflexes, no pyramidal signs. She had hypesthesia and hypalgesia of her first and second fingers on the right, of her entire left leg, the circular border at the groin level. Vibration sense was normal over her wrists and right ankle, but reduced to 2/8 over her left ankle. Position sense of her left leg was impaired, and she had an ulcer of her left foot sole. Her left peroneal muscles were reduced to ¾ with a circumference of 29 cm compared to the equivalent of the right lower limb. She showed mild ataxia when standing or walking with closed eyes. Blink reflex was impaired bilaterally. Somato-sensory potentials over the right median nerve and of the left tibial nerve were normal. Motor nerve conduction velocities were normal, but amplitudes from the left leg and the right arm were reduced. No sensory potentials could be elicited from her right ulnar and median nerves as well as from her left sural nerve.

A full size biopsy of her right sural nerve at ankle level was performed at the age of 63 years.

Material submitted:

1 plastic-embedded section of biopsied sural nerve, stained with toluidine-blue.

CASE 1996 # 6

Submitted by: Caterina Giannini and Joseph E Parisi Department of Pathology, Hilton 11, Mayo Clinic, Rochester, MN 55905

Case reference number: YR95-166

Clinical History: The patient, a 70-year old male, following an emergency appendectomy in February 94, developed a flu-like illness with cough of about two week duration. At that time, he noticed generalized weakness (legs being more affected and requiring assistance in walking), diplopia and dizziness. He also developed slowed and slurred speech and noticed a tremor of the right hand with intention and occasional choking of solid and fluids. His past medical history was significant for hypertension, diabetes insipidus and coronary bypass surgery. The neurological exam disclosed nystagmus, eye movement abnormalities, slowed speech, dysmetria and ataxia, as well as spasticity in the lower extremities.
MRI of the head demonstrated multiple areas of prominent T2 signal abnormalities with spotty enhancement intraaxially in the brainstem and brachium pontis bilaterally and a few small enhancing lesions in the periventricular white matter. Areas of enhancement surrounding the vertebral arteries were also noted. The most likely diagnosis was thought to be a granulomatous disease such as sarcoidosis. A CT of chest was done, that disclosed several small cystic areas, c/w emphysema.
Despite steroid treatment, no improvement either clinically or radiographically was noted and ultimately the patient was admitted to a long-term care facility, where he succumbed to bronchopneumonia in August 95.

Material submitted: 2 kodachrome slides of base of the medulla and cerebellum, and of the right vertebral artery, and an H&E section of either pons or cerebellum

CASE 1996 [7]

SUBMITTED BY: Dr. J.M. Bilbao
St. Michael's Hospital, Department of Pathology
30 Bond Street, Toronto, Ontario, M5B 1W8, Canada

CASE REFERENCE NUMBER: S11766/95 St. Michael's Hospital

CLINICAL HISTORY:
This 44 year old electrical contractor was admitted to St. Michael's Hospital on December 3, 1995 because of a 3 month history of progressive headache and a 2 week history of difficulty with left hand dexterity and very mild speech impairment. The morning of the day of admission, his headache suddenly worsened and he became drowsy and experienced weakness on the left side of his body.

In 1988 this patient suffered severe electrical burns to the chest, upper arms, and neck area amounting to about 35% of body surface. This was complicated by infection of skin and subcutaneous tissue resulting in severe scarring which required several admission over the subsequent years for removal of scars and cosmetic surgery. He eventually recovered and was able to resume a normal life.

Examination on admission revealed that the patient was spleepy but arousable and oriented. He had a slight facial droop, slight left hemiparesis and left Babinski sign. General physical examination was unremarkable.

An emergency non-enhancing computerized tomogram of the head revealed an heterogeneous mass with hemorrhagic component occupying the right fronto-temporal region with midline shift and compression of right lateral ventricle. The sulci of right cerebral hemisphere were obliterated.

The patient was given dilantin and decadron and taken to the OR for an emergency evacuation of hematoma and debulking of a brain tumor. The craniotomy was uneventful. The dura separated easily from the underlying brain. The superior gyrus of the temporal lobe was swollen and flattened as if expanded by an intrinsic mass. A pial opening into the middle temporal gyrus was enlarged and suction produced an abnormal greyish friable tissue; slightly deeper, a large hematoma was found. Evacuation of tumor and hematoma left a 4x3x3 cm cavity. This achieved significant decompression of the brain which had flattened and fallen away from the dural space. The specimen received in pathology consisted of 3 pieces of brain tissue each measuring 1.4 x 0.9 x 0.5 cm, and clotted blood.

MOLECULAR PATHOLOGY (courtesy of Dr. L. Becker, Hospital for Sick Children, Toronto): MYCN Gene amplification: not demonstrable following FISH analysis.

RNA analysis by polymerase chain reaction: no chromosomal translocation.

Flow cytometry: G0G1 82%, G2M 10%, and DNA index 1.5.

MATERIAL SUBMITTED: Hematoxylin-eosin stained paraffin section.

CASE 1996 - 8

Amyn M. Rojiani M.D., Ph.D.
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UF College of Medicine, Box 100275, Gainesville, FL 32610

A ten-month-old female was diagnosed with a cerebellar medulloblastoma in November of 1982. She underwent gross total resection followed by placement of a ventriculoperitoneal shunt for persistent hydrocephalus. Because of her age, the patient did not received craniospinal radiotherapy, but instead, was given twelve courses of MOPP (nitrogen mustard, vincristine, procarbazine, and prednisone). She did well following her treatment, remaining free of recurrence for eleven years. She appropriately reached all developmental milestones and was an excellent student.

In August of 1995, the patient began experiencing severe frontal headaches, nausea and became acutely obtunded. Neurological examination was notable for marked somnolence, although she was easily aroused by verbal stimuli. The remainder of her neurologic examination was normal. Computed tomographic (CT) scan revealed evidence of an acute hemorrhage in the left frontal lobe. Magnetic resonance imaging (MRI) with gadolinium uncovered a 3x5 cm. enhancing mass in the same region.

The patient underwent emergent left frontal craniotomy. Upon opening the dura, a yellowish mass with associated hemorrhage, invading cerebral cortex and underlying white matter was identified and resected. The patient has made a good recovery in the immediate post-operative period.

Material submitted :a) 1 H & E stained slide of recent surgical specimen

:b) 1 unstained section

Case 1996-9

Submitted by: John J. Kepes, M.D. and Michael S. Handler, M.D.

Department of Pathology and Laboratory Medicine

University of Kansas Medical Center

Kansas City, KS 66160

Case reference number: KUMC S-95-10540

Clinical History.

This 67 year old woman was admitted with clinical symptoms and signs of a left hemispheric mass. MRI scan showed a fairly sharply circumscribed mass in her left frontal lobe (see attached Kodachrome), which was surgically resected. The patient has a long smoking history and was said to have to have a poorly defined mass in her left lung with hilar adenopathy. A needle biopsy was taken from the lung lesion while she was recovering from the craniotomy. The lung biopsy will be shown at the meeting.

Material submitted: Kodachrome of MRI scan of brain

H&E -stained slide of the surgically removed brain tumor

CASE 1996 - 10

Submitted by:

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Chinnamma Thomas, M.D.
Section of Neuropathology
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Maywood, IL 60153

Case reference number:

A95-7

Clinical History:

A 45-year-old male, intravenous drug abuser, presented to West Side VA Hospital in Chicago, IL with a two week history of intermittent nausea, vomiting and inability to tolerate oral fluids. He was HIV seropositive for two years and had a previous history of Herpes zoster, oral candidiasis, and a thirty pound weight loss.

Upon admission, the patient was cachectic but afebrile with normal vital signs. The remainder of the physical exam was unremarkable except for prominent oral thrush. Routine laboratory tests, including blood and biochemical analysis were within normal limits. Both chest and abdominal x-rays were interpreted as unremarkable. The patient was hydrated with intravenous saline and administered compazine and nystatin. Initially he had a partial improvement; however on day three, he developed severe nausea, vomiting, and vertigo, accompanied by headache, fever, and nuchal rigidity. A repeat chest x-ray demonstrated bilateral, apical pleural thickening without evidence of infiltrates, mass lesions, or pleural effusion. Cerebral spinal fluid analysis revealed an opening pressure of 460mm Hg, a white blood cell count of 256,000/ul (neutrophils - 63%, lymphocytes - 32%, and monocytes - 4%), a protein of 162 mg/dl, glucose - 14 mg/dl and numerous gram positive cocci and bacilli. However, VDRL, CIE and Cryptococcal antigen tests were negative. Intravenous mannitol, dexamethasone, ampicillin, ceftriaxone, and empiric amphotericin B were administered. A CT scan demonstrated diffuse cerebral edema, hydrocephalus, and a mass lesion obstructing the fourth ventricle. Despite aggressive therapy, the patient developed respiratory failure requiring intubation and hyperventilation. Subsequently, the patient was referred to VA Hospital, Hines, IL for intracranial shunt placement.

During the transfer, the patient became completely unresponsive and markedly hypotensive. The following day, a perfusion scan showed no cerebral blood flow consistent with brain death.

Material submitted:

One H&E and one unstained section of cerebellum