1180

CALIFORNIA
TUMOR TISSUE REGISTRY

"NEUROPATHOLOGY"

Study Cases, Subscription A

October, 2004

Note: This study set was put together by Dr. Boleslaw Liwnicz, the Registry's neuropathologist for over a decade. He was on chemotherapy at the time, and died of cancer shortly therapy. The Registry dedicates this set to our friend and collegue. May God bless. ...Donald Chase, Executive Director, CTTR.

California Tumor Tissue Registry
c/o: Department of Pathology and Human Anatomy
Loma Linda University School of Medicine
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Web page: www.cttr.org
Web site & Case of the Month: www.cttr.org

Target audience:

Practicing pathologists and pathology residents.

Goal:

To acquaint the participant with the histologic features of a variety of benign and malignant neoplasms and tumor-like conditions.

Objectives:

The participant will be able to recognize morphologic features of a variety of benign and malignant neoplasms and tumor-like conditions and relate those processes to pertinent references in the medical literature.

Educational methods and media:

Review of representative glass slides with associated histories.
Feedback on consensus diagnoses from participating pathologists.
Listing of selected references from the medical literature.

Principal faculty:

Weldon K. Bullock, MD
Donald R. Chase, MD

CME Credit:

Loma Linda University School of Medicine designates this continuing medical education activity for up to 2 hours of Category I of the Physician's Recognition Award of the American Medical Association.
CME credit is offered for the subscription year only.

Accreditation:

Loma Linda University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians.

Contributor: Dorothy Tatter, M.D.
Los Angeles, CA

Case No. 1 - October 2004

Tissue from: Cerebrum

Accession #21953

Clinical Abstract:

For two years this 64-year-old female had a history of memory loss, disorientation and bizarre behavior. She was experiencing right homonymous hemianopsia, early papilledema, increased muscle tone, slight nuchal rigidity and bilateral Babinski signs. For eight weeks she also sustained weakness, headache and difficulty in swallowing. A right carotid angiogram showed an avascular right fronto-parietal mass. She died four months later.

Gross Pathology:

Within the coronal sections of the cerebrum was a 2.0 x 1.5 cm mass. Additionally, there was a white mass in the right frontal lobe measuring 6.0 x 6.0 x 5.0 cm.

Contributor: Nelson J. Quigley, M.D.
Anaheim, CA

Case No. 2 - October 2004

Tissue from: Brain

Accession #22484

Clinical Abstract:

Having experienced headaches, blurred vision, dizziness, and gastrointestinal problems, this 15-year-old male was admitted to the hospital for disorientation and confusion. A CT scan revealed a mass involving the left frontal lobe. The patient expired nine days after surgery.

Gross Pathology:

The resected tumor tissue weighted 9 grams, and totaled 3.0 cm in aggregate.

Contributor: Orange County Sheriff (Coroner)
Orange, CA

Case No. 3 - October 2004

Tissue from: Cerebrum

Accession #29188

Clinical Abstract:

At 19 months of age, this 8-year-old female had an episode of food choking and was forcibly shaken to dislodge the food. She became cosmatose and was placed on a ventilator and was eventually weaned. Later on, a checkup EEG showed generalized delta-2 activity, and she was placed on pheobarbital for seizures. Her neurologic status remained poor and she was shunted for hydrocephalus. Her medical condition deteriorated following removal of the shunt and she was pronounced dead.

Gross Pathology:

The 571 gram brain had a soft slightly hemorrhagic bulge measuring 1.5 cm in the dorsal right frontal region. The cranial dura matter and both dorsal convexities showed numerous sessile and polypoid soft masses.

SPECIAL STUDIES:

Desmin	negative
GFAP	negative
S100	negative
EMA	negative
CMV	negative

Contributor: Jozef Kollin, M.D.
Lakewood, CA

Case No. 4 - October 2004

Tissue from: Brain

Accession #29839

Clinical Abstract:

This 46-year-old male presented with complaints of headaches and difficulty in speaking. He had a history of nodular growths in the back of his neck, some of which were treated with antibiotics. A CT scan found a space-occupying lesion.

Gross Pathology:

The resected tumor was oval, relatively well-circumscribed, and measured 3.0 cm. Dura was attached to one periphery.

Contributor: John McGill, M.D.
Pasadena, CA

Case No. 5 - October 2004

Tissue from: Brain

Accession #29845

Clinical Abstract:

A 40-year-old male experienced progressive severe headaches and a slightly blunted affect. On examination he was found to have mild left-sided hemiparesis. CT and MR imaging studies showed a massive right frontal ring-enhanced mass.

Gross Pathology:

Excised tissue weighed 0.5 grams and formed a 1.3 x 0.8 x 0.8 cm aggregate.

GFAP & S100 protein	Focally positive
CAM5.2, CK7 & CK20	Negative
HMB45 & MelanA	Negative
CD31, CD34	Negative in lesional cells
CD68	Positive in macrophages, negative in lesional cells
LCA	Negative
TTF1	Negative
P53 & Ki67	<5% positive staining

Contributor: Pamela D. Boswell, M.D.
San Diego, CA

Case No. 6 - October 2004

Tissue from: Brain

Accession #29627

Clinical Abstract:

A 45-year-old male presented with a mass in the left occipital lobe of his brain He had a history of lung cancer (type unknown).

Gross Pathology:

Removed tissue was and formed a 0.5 x 0.5 x 0.5 cm aggregate.

SPECIAL STUDIES:

CK7	diffusely positive
CAM5.2	diffusely positive
CK20	negative

Contributor: Phillip C. Gordon, M.D.
Winter Haven, FL

Case No. 7 - October 2004

Tissue from: Brain

Accession #29793

Clinical Abstract:

For a month or two this 34-year-old female complained of migraine headaches and dizziness. Imaging studies showed a heterogeneous, minimally enhancing mass involving the right frontal lobe. A lobectomy was performed.

Gross Pathology:

The 100 gram portion of cerebral cortex and underlying white matter measured 8.5 x 7.0 a 3.0 cm.

Contributor: LLUMC Pathology Group
Loma Linda, CA

Case No. 8 - October 2004

Tissue from: Brain

Accession #29095

Clinical Abstract:

This 62-year-old female presented with a history of increasing lethargy. Imaging showed a large enhancing temporal lobe mass. Craniotomy, resection of supratentorial tumor, and microdissection were performed. There was a past history of uterine cancer with a vaginal recurrence.

Gross Pathology:

Removed tissue formed two 5.0 x 4.0 x 4.0 cm and 1.8 x 1.5 x 0.9 cm aggregates.

Contributor: Peter L. Morris, M.D.
Santa Barbara, CA

Case No. 9 - October 2004

Tissue from: Brain

Accession #29853

Clinical Abstract:

Due to Parkinson's tremors, this 75-year-old female underwent a scan which revealed a dural-based convexity tumor.

Gross Pathology:

The 18 gram mass was 3.5 x 3.0 x 2.5 cm

Contributor: Morteza Moussavi, M.D.
El Centro, CA

Case No. 10 - October 2004

Tissue from: Cranium/right inferotemporal fossa

Accession #29098

Clinical Abstract:

This 75-year-old male had a four-year history of progressively worsening pain in the right side of the head. CT scan showed a large neoplasm involving the cranium and extending into the inferotemporal fossa. At surgery the tumor was described by the surgeon as being "dark blue with visible calcifications.

Gross Pathology:

Excised tissue formed a 5.5 x 4.0 x 1.4 cm aggregate.

CALIFORNIA
TUMOR TISSUE REGISTRY

NEUROPATHOLOGY

Minutes – Subscription A

October, 2004

SUGGESTED READING (General Topics from Recent Literature):

Mechanisms of Bone Metastasis. Roodman, David G. *New Eng J of Med* 2004; 350; 1655-1664.

Osteoprotegerin-Receptor Activator of Nuclear Factor-KB Ligand Ratio. A New Approach to Osteoporosis Treatment? Coetzee, M. and Kruger MC. *Southern Med J* 2004; 97(5):507-511.

Focused Ultrasound Treatment of Uterine Fibroid Tumors. Safety and Feasibility of a Noninvasive Thermoablative Technique. Stewart EA, Gedroyc WM, Tempany CM, et al. *Am J Obstet Gynecol* 2003; 189(1):48-54.

Rules for Making Human Tumor Cells. Hahn W C and Weinberg RA. *N Eng J Med* 2002; 347(20):1593-1603.

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FILE DIAGNOSES

(If possible, submit answers on website at www.cttr.org. Click "subscriptions", then "submit answers".)

CTTR Subscription A October, 2004

Case 1:

Diffuse large B-cell lymphoma, cerebrum
T-X2000, M-95903

Case 2:

Subependymal giant cell astrocytoma, cerebrum
T-X2000, M-94003

Case 3:

Semi-necrotic myxoid process, likely sarcoma, cerebrum
T-X2000, M-88003

Case 4:

Meningioma, left temporoparietal region
T-X2595, M-95300

Case 5:

Giant cell glioblastoma, right frontal lobe
T-X2200, M-94413

Case 6:

Metastatic adenocarcinoma, probably pulmonary in origin
T-Y2000, M-81403

Case 7:

Anaplastic oligodendroglioma, frontal lobe
T-X2000, M-94513

Case 8:

Glioblastoma multiforme, temporal lobe
T-X2000, M-94403

Case 9:

Meningioma with lipomatosis metaplasia
T-X2000, M-95301

Case 10:

Low grade chondrosarcoma, cranium and infratemporal fossa
T-Y0151, M-92203

Alameda (Alameda County Medical Center - Lymphoma
Baldwin Park (Kaiser Permanente) - Lymphoma (3)
Glendale - Lymphoma vs. PNET
Hayward/Fremont - Small blue cell tumor, metastatic (NB, Ewings, lymphoma, P.D. syn sarc., rhabdo)
Irvine (University of California Irvine) - Lymphoma; 2nd choice plasmacytoma
Long Beach - Large cell lymphoma (6)
Monterey Park (Garfield Hospital) - Lymphoma
Monterey (Monterey Peninsula Pathologists) - Diffuse large cell lymphoma
Mountain View (El Camino Pathology Group) - Large cell lymphoma
Oakland (Kaiser Permanente) - Large cell lymphoma (4)
Sacramento (UC Davis Medical Center) - Lymphoma vs. metastatic neuroendocrine carcinoma
San Diego (Naval Medical Center) - Primary CNS lymphoma
San Francisco (SF General Hospital) - Anaplastic oligodendroglioma
Santa Rosa (Santa Rosa Memorial Hospital) - Large cell lymphoma (1); Diffuse large cell malignant lymphoma (2)
Ventura - Malignant lymphoma
Arizona (Maryvale Medical Center) - Anaplastic oligodendroglioma
Arkansas University of Arkansas Medical Center) - Primary CNS lymphoma
Colorado, Evergreen) - Diffuse B-cell lymphoma, small cleaved cell
Colorado (Lutheran Medical Center) - Lymphoma
Florida (Baptist Hospital) - Malignant, lymphoma large cell type vs. anaplastic oligodendroglioma vs. melanoma (special stains would help) (3); Large cell malignant lymphoma (1); Round cell tumor; ddx incluses lymphoma (would do immunostains) (1)
Florida (Winter Haven Hospital) - Lymphoma, possible mantle cell
Illinois, Burr Ridge) - Primary CNS lymphoma (DLBCL)
Illinois (Evanston Hospital) - Large cell lymphoma
Illinois (Northwestern Memorial Hospital) - Lymphoplasmocytic lymphoma
Indiana (Howard Community Hospital) - Anaplastic oligodendroglioma
Louisiana (Louisiana State University Medical Center) - Malignant lymphoma
Maryland (University of Maryland) - Lymphoma
Maryland (Johns Hopkins Hospital Residents) - Lymphoma
Massachusetts (Berkshire Medical Center) - CNS lymphoma
Massachusetts (New England Medical Center) - Lymphoma
Michigan, Kalamazoo) - High grade lymphoma
Michigan (Oakwood Hospital) - Malignant; favor non-Hodgkin's lymphoma
Michigan (St. Joseph Mercy Hospital) - Large B-cell lymphoma
Missouri (Truman Medical Center) - Lymphoma
Nebraska (Creighton University School of Medicine Residents) - Lymphoma
New York (Long Island Jewish Medical Center) - Lymphoma (DDx: PNET)
New York (Nassau University Medical Center) - Malignant lymphoma
New York (New York Presbyterian Residents) - Lymphoma
New York (Stony Brook University Hospital Residents) - Large cell lymphoma
New York (Westchester Medical Center) - Lymphoma
North Carolina (Mountain Area Pathology) - Large cell lymphoma (1); Large cell lymphoma c/w primary CNS lymphoma (1); Large cell lymphoma vs. chloroma
Ohio (Medical College of Ohio) - Diffuse large cell lymphoma, high grade
Ohio (McCullough Hyde Memorial Hospital) - Malignant lymphoma
Pennsylvania (Lehigh Valley Hospital) - Lymphoma (1); Primary CNS lymphoma (1)
Pennsylvania (Mt. Nittany Medical Center) - Medulloblastoma, cerebrum
Pennsylvania (Pennsylvania Hospital Residents) - Lymphoma (2)
Puerto Rico (University of Puerto Rico) - Primary CNS lymphoma
Qatar (Hamad Medical Corporation) - Lymphoma
Texas, Houston - Microglioma?
Texas, Lubbock - Large cell lymphoma
Texas (Pro Path Associates) - CNS lymphoma (1); Lymphoma (1)
Texas (Scott & White Memorial Hospital) - Large cell lymphoma
West Virginia (Greenbrier Valley Medical Center) - Primary central nervous system, lymphoma
Wisconsin (Meriter Hospital) - Large cell lymphoma
Wisconsin (St. Vincent Hospital) - Diffuse large cell lymphoma
Australia (North Queensland Pathology) - Chloroma
Australia (Royal Prince Alfred Hospital) - Large cell lymphoma
Canada (Foothills Medical Center) - Primary CNS lymphoma
Canada (Woodstock General Hospital) - Non-Hodgkins lymphoma

Brazil (UNIFESP/EPM) - Large B-cell lymphoma, with plasmacytic differentiation (2)
Hong Kong (Hong Kong Baptist Hospital) - Malignant lymphoma
Jamaica (University Hospital of West Indies) - Plasma cell neoplasm/Plasmacytoid central nervous system lymphoma
Netherlands, Amsterdam - Malignant lymphoma (non-Hodgkin's lymphoma)
Saudi Arabia (King Khalid University) - Small round cell tumor PNET vs. anaplastic ependymoma

Case 1 - Diagnosis:

Diffuse large B-cell lymphoma, cerebrum
T-X2000, M-95903

Directors Note: This case was contributed in 1976, when immunostains were not really an option. (drc)

Consultation: Jun Wang, M.D. (LLUMC), "Diffuse large B-cell lymphoma."

Case 1 – References:

Paueksakon P, Shaya M, Harper R, et al. Local Cryoglobulin Deposition in Primary Central Nervous System Lymphoma. *Hum Pathol* 2003; 34(7):720-724.

Ferreri AJ, Dell'Oro S, Reni M, et al. Questions and Answers in the Management of Primary Central Nervous System and Ocular Lymphomas. *Haematologica* 2003; 88(9):1063-1068.

Yamanaka R, Akutagawa S, Taguchi F, et al. Selection of Surrogate Marker Genes in Primary Central Nervous System Lymphomas for Radio-Chemotherapy by DNA Array Analysis of Gene Expression Profiles. *Int J Oncol* 2003; 23(4):913-923.

Kosuda S, Kusano S, Ishihara S, et al. Combined 201Tl and 67Ga Brain SPECT in Patients with Suspected Central Nervous System Lymphoma or Germinoma. Clinical and Economic Value. *Ann Nucl Med* 2003; 17(5):359-367.

Taillandier L, Chinot O, Hoang-Xuan K, et al. Chemotherapy Alone as Initial Treatment for Primary CNS Lymphoma in Patients Older than 60 Years. A Multicenter Phase II Study (26952) of the European Organization for Research and Treatment of Cancer Brain Tumor Group. *J Clin Oncol* 2003; 21(14):2726-2731.

Ferreri AJ, Abrey LE, Blay JY, et al. Summary Statement on Primary Central Nervous System Lymphomas from the Eighth International Conference on Malignant Lymphoma. *J Clin Oncol* 2003; 21(12):2407-2414.

Case No. 2, Accession No. 22484 October 2004

Alameda (Alameda County Medical Center - Subependymal giant cell astrocytoma
Baldwin Park (Kaiser Permanente) - Gemistocytic astrocytoma (2); Giant cell astrocytoma (1)
Glendale - Ganglion cell tumor
Hayward/Fremont - Ganglion cell tumor
Irvine (University of California Irvine) - Subependymal giant cell
Long Beach - Gemistocytic astrocytoma (6)
Monterey Park (Garfield Hospital) - Neuroma
Monterey (Monterey Peninsula Pathologists) - Gemistocytic astrocytoma
Mountain View (El Camino Pathology Group) - Giant cell astrocytoma vs. ganglion cell tumor
Oakland (Kaiser Permanente) - High grade astrocytoma (4)
Sacramento (UC Davis Medical Center) - Pleomorphic xanthoastrocytoma
San Diego (Naval Medical Center) - SEGA
San Francisco (SF General Hospital) - Giant cell astrocytoma
Santa Rosa (Santa Rosa Memorial Hospital) - Glioblastoma multiforme with gemistocytic features (2); Glioblastoma multiforme (1)
Ventura - Ganglion cell tumor
Arizona (Maryvale Medical Center) - Gemistocytic astrocytoma
Arkansas University of Arkansas Medical Center) - Subependymal giant cell astrocytoma
Colorado, Evergreen) - Ganglioglioma
Colorado (Lutheran Medical Center) - Pleomorphic xanthoastrocytoma
Florida (Baptist Hospital) - Desmoplastic infantile astrocytoma/ganglioglioma (1); Ganglioglioma (4)
Florida (Winter Haven Hospital) - Pleomorphic xanthoastrocytoma
Illinois, Burr Ridge) - Glioblastoma multiforme, giant cell variant
Illinois (Evanston Hospital) - PXA
Illinois (Northwestern Memorial Hospital) - Subependymal giant cell astrocytoma
Indiana (Howard Community Hospital) - Gemistocytic astrocytoma
Louisiana (Louisiana State University Medical Center) - Subependymal giant cell tumor
Maryland (University of Maryland) - Subependymal giant cell tumor

Maryland (John Hopkins Hospital Residents) - Ganglion cell tumor
Massachusetts (Berkshire Medical Center) - PXA
Massachusetts (New England Medical Center) - Ganglioglioma/pleomorphic xanthoastrocytoma
Michigan, Kalamazoo) - Malignant rhabdoid tumor
Michigan (Oakwood Hospital) - Gemistocytic astrocytoma
Michigan (St. Joseph Mercy Hospital) - Gangliocytoma
Missouri (Truman Medical Center) - Pleomorphic xanthoastrocytoma
Nebraska (Creighton University School of Medicine Residents) - Gangliocytoma
New York (Long Island Jewish Medical Center) - Astrocytoma, high grade (DDx: Subependymal giant cell astrocytoma)
New York (Nassau University Medical Center) - Cerebral neuroblastoma
New York (New York Presbyterian Residents) - Subependymal giant cell astrocytoma
New York (Stony Brook University Hospital Residents) - Subependymal giant cell astrocytoma
New York (Westchester Medical Center) - Giant cell astrocytoma vs. PXA
North Carolina (Mountain Area Pathology) - Ganglioglioma
Ohio (Medical College of Ohio) - Pleomorphic xanthoastrocytoma
Ohio (McCullough Hyde Memorial Hospital) - Gemistocytic astrocytoma
Pennsylvania (Lehigh Valley Hospital) - GBM (1); Ganglion cell tumor (gangliocytoma) (2)
Pennsylvania (Mt. Nittany Medical Center) - Pleomorphic xanthoastrocytoma, left frontal lobe
Pennsylvania (Pennsylvania Hospital Residents) - Anaplastic gemistocytic astrocytoma (2)
Puerto Rico (University of Puerto Rico) - Subependymal giant cell astrocytoma
Qatar (Hamad Medical Corporation) - Ganglioglioma (ganglion cell tumor)
Texas, Houston - Gemistocytic astrocytoma/glioblastoma multiforme
Texas, Lubbock - Neurocytoma
Texas (Pro Path Associates) - Aggressive meningioma (2)
Texas (Scott & White Memorial Hospital) - Atypical teratoid/rhabdoid tumor
West Virginia (Greenbrier Valley Medical Center) - Gemistocytic astrocytoma
Wisconsin (Meriter Hospital) - Diffuse astrocytoma
Wisconsin (St. Vincent Hospital) - Subependymal giant cell astrocytoma
Australia (North Queensland Pathology) - Subependymal giant cell astrocytoma
Australia (Royal Prince Alfred Hospital) - Pleomorphic xanthoastrocytoma
Canada (Foothills Medical Center) - Pleomorphic xanthoastrocytoma
Canada (Woodstock General Hospital) - Ganglioneuroma
Brazil (UNIFESP/EPM) - Gemistocytic glioblastoma (2)
Jamaica (University Hospital of West Indies) - Ganglion cell tumor/ganglioglioma
Netherlands, Amsterdam - Gemistocytic astrocytoma
Saudi Arabia (King Khalid University) - Gemistocytic astrocytoma

Case 2 - Diagnosis:

Subependymal giant cell astrocytoma, cerebrum
T-X2000, M-94003

Consultation: Louis Dehner, M.D. CTTR seminar 1982, "Subependymal giant cell astrocytoma."

Case 2 - References:

Shepherd CW, Scheithauer BW, Gomez MR, et al. Subependymal Giant Cell Astrocytoma. A Clinical, Pathological and Flow Cytometric Study. *Neurosurg* 1991 28(6):864-868.

Martin HL, Lee E and Albores-Saavedra J. Secondary parathyroid hyperplais in tuberous sclerosis. Report of a Case with Large Eosinophilic Ganglion-Like Cells Similar to Those of Subependymal Giant Cell astrocytoma, Tubers and Atypical Angiomyolipoma. *Am J Surg Pathol* 2002; 26(2):260-265.

Crino PB and Henske EP. New Developments in the Neurobiology of the Tuberous Sclerosis Complex. *Neurology* 1999; 53(7):1384-1390.

Watanabe Y, Oki S, Migita K, et al. A Case of Subependymal Giant Cell Astrocytoma Not Associated with Tuberous Sclerosis. *No Shinkei Geka* (Japan) 2003; 31(5):543-548.

Kim SK, Wang KC and Cho BK. Biological Behavior and Tumorigenesis of Subependymal Giant Cell Astrocytomas. *J Neurooncol* 2001; 52(3):217-225.

Case No. 3, Accession No. 29188 **October 2004**

Alameda (Alameda County Medical Center - Atypical fibroinflammatory lesion
Baldwin Park (Kaiser Permanente) - Pilocytic astrocytoma (1); Myxopapillary ependymoma (1)
Glendale - Solitary fibrous tumor
Hayward/Fremont - Post traumatic pseudotumor
Irvine (University of California Irvine) - Protoplasmic astrocytoma ?
Long Beach - Primary neoplasm, NOS (4); Diffuse glial reaction (2)
Monterey Park (Garfield Hospital) - Sarcoma
Monterey (Monterey Peninsula Pathologists) - Dysembryoplastic neuroepithelial tumor (DNT)
Mountain View (El Camino Pathology Group) - Pilocytic astrocytoma
Oakland (Kaiser Permanente) - Extensive lamina necrosis (? brain) (4)
Sacramento (UC Davis Medical Center) - Abscesses, multiple
San Diego (Naval Medical Center) - Global hemispheric necrosis/multicystic encephalopathy
San Francisco (SF General Hospital) - Fibrous reaction
Santa Rosa (Santa Rosa Memorial Hospital) - Herpes encephalitis (1); Acute meningitis (1); Organizing granulation tissue with acute inflammation (1)
Ventura - Meningioma
Arizona (Maryvale Medical Center) - Acute disseminated leukoencephalitis
Arkansas University of Arkansas Medical Center) - Chronic subdural hematoma
Colorado, Evergreen) - Chordoid meningoma
Colorado (Lutheran Medical Center) - Infarct
Florida (Baptist Hospital) - Dysembryoplastic neuroepithelial tumor (5)
Florida (Winter Haven Hospital) - Progressive multifocal leukoencephalopathy
Illinois, Burr Ridge) - Necrosis with gliosis
Illinois (Evanston Hospital) - Sarcoma
Illinois (Northwestern Memorial Hospital) - Reactive/inflammatory, possible amebi encephalitis
Louisiana (Louisiana State University Medical Center) - Dysembryoplastic neuroepithelial tumor
Maryland (University of Maryland) - Dysembryoplastic neuroepithelial tumor
Maryland (John Hopkins Hospital Residents) - Astrocytoma (WHO grade I)
Massachusetts (Berkshire Medical Center) - Infectious abscess
Massachusetts (New England Medical Center) - Vascular malformation
Michigan, Kalamazoo) - Infarct
Michigan (Oakwood Hospital) - Malignant acute leukemia vs. neuroblastoma
Michigan (St. Joseph Mercy Hospital) - Solitary fibrous tumor
Missouri (Truman Medical Center) - Organized subarachnoid hemorrhage
Nebraska (Creighton University School of Medicine Residents) - Old infarct
New York (Long Island Jewish Medical Center) - Spindle cell sarcoma, favor fibrosarcoma
New York (Nassau University Medical Center) - Xantofibromyxoid lesion, benign
New York (New York Presbyterian Residents) - Meningial sarcoma
New York (Stony Brook University Hospital Residents) - Amebic meningioencephalitis
New York (Westchester Medical Center) - Sarcoma
North Carolina (Mountain Area Pathology) - Inflammatory pseudotumor (1); Organizing infarcts (1); Organized necrosis (1)
Ohio (Medical College of Ohio) - Reactive fibroblastic/myofibroblastic proliferation
Pennsylvania (Lehigh Valley Hospital) - Inflammation (1); Chronic subdural hematoma (1)
Pennsylvania (Mt. Nittany Medical Center) - Infarct with gliosis
Pennsylvania (Pennsylvania Hospital Residents) - Respiratory brain
Puerto Rico (University of Puerto Rico) - Subdural membrane
Qatar (Hamad Medical Corporation) - Cerebral amoebiasis (1); Diffuse axonal injury 2nd choice
Texas, Houston - Infarction
Texas, Lubbock - Rhabdoid tumor
Texas (Pro Path Associates) - Taxoplasmosis
Texas (Scott & White Memorial Hospital) - Non-neoplastic reactive reparative process
West Virginia (Greenbrier Valley Medical Center) - Cerebral infarct
Wisconsin (Meriter Hospital) - Abscess
Wisconsin (St. Vincent Hospital) - Possible dysembryoplasia neuroepithelial tumor
Australia (North Queensland Pathology) - Necrotic/organizing subdural hematoma
Australia (Royal Prince Alfred Hospital) - Liquefactive necrosis (no tumor seen)
Canada (Foothills Medical Center) - Inflammatory pseudotumor
Canada (Woodstock General Hospital) - Organized subdural hamatoma
Brazil (UNIFESP/EPM) - Dysembryoplastic neuroepithelial tumor (DNET) (2)
Hong Kong (Hong Kong Baptist Hospital) - Gliomatosis

Jamaica (University Hospital of West Indies) - Contusion resolution
Netherlands, Amsterdam - Acute myeloid leukemia
Saudi Arabia (King Khalid University) - Cerebral atrophy, probably inflammatory (infection)

Case 3 - Diagnosis:

Semi-necrotic myxoid process, likely sarcoma, cerebrum
T-X2000, M-88003

Consultation: Boleslaw Liwnicz, M.D. (LLUMC) "Myxoid sarcoma (NOS)"

Case 3 - References:

Lam RM and Colah SA. Atypical Fibrous Histiocytoma with Myxoid Stroma. A Rare Lesion Arising from Dura Mater of the Brain. *Cancer* 1979; 43(1):237-245.

Kalyanaraman UP, Taraska JJ, Fierer JA, et al. Malignant Fibrous Histiocytoma of the Meninges. Histological, Ultrastructural, and Immunocytochemical Studies. *J Neurosurg* 1981; 55(6):957-962.

Berry AD 3rd, Reintjes SL and Kepes JJ. Intracranial Malignant Fibrous Histiocytoma with Abscess-Like Tumor Necrosis. Case Report. *J Neurosurg* 1988; 69(5):780-784.

Tsutsumi M, Kawano T, Kawaguchi T, et al. Intracranial Meningeal Malignant Fibrous Histiocytoma Mimicking Parsagittal Meningioma. Case Report. *Neurol Med Chir* (Tokyo) 2001; 41(2):90-93.

Case No. 4, Accession No. 29839 October 2004

Alameda (Alameda County Medical Center - Meningioma
Baldwin Park (Kaiser Permanente) - Meningioma, fibrous type (1); Meningioma (2)
Glendale - Meningioma
Hayward/Fremont - Meningioma, fibroblastic
Irvine (University of California Irvine) - Meningioma
Long Beach - Meningioma (6)
Monterey Park (Garfield Hospital) - Meningioma
Monterey (Monterey Peninsula Pathologists) - Meningioma
Mountain View (El Camino Pathology Group) - Meningioma
Oakland (Kaiser Permanente) - Meningioma with extramedullary hyperplasia (4)
Sacramento (UC Davis Medical Center) - Clear cell meningioma
San Diego (Naval Medical Center) - Meningioma, Grade I (WHO)
San Francisco (SF General Hospital) - Meningioma
Santa Rosa (Santa Rosa Memorial Hospital) - Fibrous meningioma (1); Meningioma (2)
Ventura - Meningioma
Arizona (Maryvale Medical Center) - Meningioma, WHO Grade I
Arkansas University of Arkansas Medical Center) - Meningioma
Colorado, Evergreen) - Fibrous meningioma
Colorado (Lutheran Medical Center) - Meningioma
Florida (Baptist Hospital) - Schwannoma (1); Meningioma (3); Hemangiopericytoma (1)
Florida (Winter Haven Hospital) - Meningioma
Illinois, Burr Ridge) - Pilocytotic astrocytoma
Illinois (Evanston Hospital) - Meningioma
Illinois (Northwestern Memorial Hospital) - Meningioma
Indiana (Howard Community Hospital) - Meningioma
Louisiana (Louisiana State University Medical Center) - Meningioma
Maryland (University of Maryland) - Microcystic meningioma
Maryland (Johns Hopkins Hospital Residents) - Meningioma
Massachusetts (Berkshire Medical Center) - Meningioma
Massachusetts (New England Medical Center) - Neurilemmoma
Michigan, Kalamazoo) - Meningothelial meningioma
Michigan (Oakwood Hospital) - Meningioma, meningothelial type
Michigan (St. Joseph Mercy Hospital) - Meningioma
Missouri (Truman Medical Center) - Meningioma fibroblastic type
Nebraska (Creighton University School of Medicine Residents) - Schwannoma
New York (Long Island Jewish Medical Center) - Atypical meningioma
New York (Nassau University Medical Center) - Meningioma

New York (New York Presbyterian Residents) - Meningioma with focal necrosis, not atypical (WHO Grade I)
New York (Stony Brook University Hospital Residents) - Meningioma
New York (Westchester Medical Center) - Meningioma
North Carolina (Mountain Area Pathology) - Schwannoma, r/o meningioma (1); Schwannoma (1); Meningioma (1)
Ohio (Medical College of Ohio) - Meningioma
Ohio (McCullough Hyde Memorial Hospital) - Schwannoma
Pennsylvania (Lehigh Valley Hospital) - Meningioma (2)
Pennsylvania (Mt. Nittany Medical Center) - Meningioma, intracranial
Pennsylvania (Pennsylvania Hospital Residents) - Meningioma (2)
Puerto Rico (University of Puerto Rico) - Meningioma
Qatar (Hamad Medical Corporation) - Meningothelial meningioma
Texas, Houston - Meningioma
Texas, Lubbock - Neurilemmoma
Texas (Pro Path Associates) - Meningioma, syncytial type (2)
Texas (Scott & White Memorial Hospital) - Meningioma
West Virginia (Greenbrier Valley Medical Center) - Meningioma
Wisconsin (Meriter Hospital) - Meningioma
Wisconsin (St. Vincent Hospital) - Meningioma
Australia (North Queensland Pathology) - Meningioma
Australia (Royal Prince Alfred Hospital) - Meningioma, Grade 1 (transitional)
Canada (Foothills Medical Center) - Meningioma
Canada (Woodstock General Hospital) - Meningioma
Brazil (UNIFESP/EPM) - Meningioma (probably associated with NF-2) (2)
Hong Kong (Hong Kong Baptist Hospital) - Meningioma, meningiothelial type, focally microcystic
Jamaica (University Hospital of West Indies) - Meningioma, fibroblastic type
Netherlands, Amsterdam - Meningioma
Saudi Arabia (King Khalid University) - Meningioma, meningothelial type

Case 4 - Diagnosis:

Meningioma, left temporoparietal region
T-X2595, M-95300

Case 4 - References:

Cho YD, Choi GH, Lee SP, et al. (1)H-MRS Metabolic Patterns for Distinguishing Between Meningiomas and Other Brain Tumors. *Magn Reson Imaging* 2003; 21(6):663-672.

Miettinen M and Paetau A. Mapping of the Keratin Polypeptides in Meningiomas of Different Types. An Immunohistochemical Analysis of 463 Cases. *Hum Pathol* 2002; 33(6):590-598.

Al-Sarraj S, King A, Martin AJ, et al. Ultrastructural Examination is Essential for Diagnosis of Papillary Meningioma. *Histopath* 2001; 38(4):318-324.

Filippi CG, Edgar MA, Ulug AM, et al. Appearance of Meningiomas on Diffusion-Weighted Images. Correlating Diffusion Constants with Histopathologic Findings. *AJNR Am J Neuroradiol* 2001; 22(1):65-72.

Case No. 5, Accession No. 29845 October 2004

Alameda (Alameda County Medical Center - Gliosarcoma
Baldwin Park (Kaiser Permanente) - Gliosarcoma (1); Glioblastoma multiforme (1); High grade glioma (1)
Glendale - High-sarcoma vs. GBM
Hayward/Fremont - Giant cell GBM (monstrocellular sarcoma/gliosarcoma)
Irvine (University of California Irvine) - Glioblastoma
Long Beach - Glioblastoma multiforme (6)
Monterey Park (Garfield Hospital) - Glioblastoma multiforme
Monterey (Monterey Peninsula Pathologists) - Glioblastoma multiforme
Mountain View (El Camino Pathology Group) - Glioblastoma multiforme
Oakland (Kaiser Permanente) - Glioblastoma (4)
Sacramento (UC Davis Medical Center) - Glioblastoma multiforme vs. anaplastic pleomorphic xanthoastrocytoma
San Diego (Naval Medical Center) - Giant cell glioblastoma vs. malignant fibrous histiocytoma
San Francisco (SF General Hospital) - Giant cell glioblastoma
Santa Rosa (Santa Rosa Memorial Hospital) - Gliosarcoma (1); Glioblastoma multiforme (2)
Ventura - Glioblastoma multiforme
Arizona (Maryvale Medical Center) - Giant cell glioblastoma

Arkansas University of Arkansas Medical Center) - Glioblastoma multiforme
Colorado, Evergreen) - Giant cell glioblastoma
Colorado (Lutheran Medical Center) - GBM
Florida (Baptist Hospital) - Gliosarcoma (5)
Florida (Winter Haven Hospital) - Giant cell glioblastoma
Illinois, Burr Ridge) - Glioblastoma multiforme
Illinois (Evanston Hospital) - Sarcoma
Illinois (Northwestern Memorial Hospital) - Gliosarcoma
Indiana (Howard Community Hospital) - Glioblastoma multiforme
Louisiana (Louisiana State University Medical Center) - Glioblastoma multiforme
Maryland (University of Maryland) - Giant cell glioblastoma
Maryland (Johns Hopkins Hospital Residents) - Anaplastic astrocytoma
Massachusetts (Berkshire Medical Center) - Giant cell glioblastoma multiforme
Massachusetts (New England Medical Center) - Glioblastoma multiforme
Michigan, Kalamazoo) - Gliosarcoma
Michigan (Oakwood Hospital) - Glioblastoma multiforme
Michigan (St. Joseph Mercy Hospital) - Gliosarcoma
Missouri (Truman Medical Center) - Giant cell glioblastoma
Nebraska (Creighton University School of Medicine Residents) - Giant cell glioblastoma multiforme
New York (Long Island Jewish Medical Center) - Pleomorphic xanthoastrocytoma (DDx: Glioblastoma multiforme)
New York (Nassau University Medical Center) - Giant cell glioblastoma
New York (New York Presbyterian Residents) - Gliosarcoma
New York (Stony Brook University Hospital Residents) - Glioblastoma multiforme
New York (Westchester Medical Center) - Giant cell glioblastoma
North Carolina (Mountain Area Pathology) - PXA (1); Glioblastoma multiform vs. Grade IV PXA (1); Glioblastoma multiforme (1)
Ohio (Medical College of Ohio) - Glioblastoma multiforme, giant cell variant
Ohio (McCullough Hyde Memorial Hospital) - Glioblastoma
Pennsylvania (Lehigh Valley Hospital) - Glioblastoma multiforme (1); Gliosarcoma (1)
Pennsylvania (Mt. Nittany Medical Center) - Glioblastoma multiforme, right frontal lobe
Pennsylvania (Pennsylvania Hospital Residents) - Giant cell glioblastoma (2)
Puerto Rico (University of Puerto Rico) - Glioblastoma multiforme
Qatar (Hamad Medical Corporation) - Giant cell glioblastoma
Texas, Houston - Glioblastoma multiforme, giant cell type
Texas, Lubbock - Anaplastic oligodendroglioma
Texas (Pro Path Associates) - Pleomorphic xanthoastrocytoma
Texas (Scott & White Memorial Hospital) - Glioblastoma multiforme
West Virginia (Greenbrier Valley Medical Center) - Astrocytoma, high grade
Wisconsin (Meriter Hospital) - Grade 4, astrocytoma
Wisconsin (St. Vincent Hospital) - Glioblastoma multiforme
Australia (North Queensland Pathology) - Glioblastoma multiforme, monstro cellular type
Australia (Royal Prince Alfred Hospital) - Gliosarcoma (Grade 4)
Canada (Foothills Medical Center) - Giant cell glioblastoma multiforme
Canada (Woodstock General Hospital) - Glioblastoma multiforme
Brazil (UNIFESP/EPM) - Pleomorphic xanthoastrocytoma with anaplastic features (2)
Hong Kong (Hong Kong Baptist Hospital) - Gliosarcoma
Jamaica (University Hospital of West Indies) - Gliobastoma multiforme, giant cell type
Netherlands, Amsterdam - Glioblastoma multiforme
Saudi Arabia (King Khalid University) - Giant cell glioblastoma

Case 5 - Diagnosis:

Giant cell glioblastoma, right frontal lobe
T-X2200, M-94413

Case 5 - References:

Katoh M, Aida T, Sugimoto S, et al. Immunohistochemical Analysis of Giant Cell Glioblastoma. *Pathol Int* 1995; 45(4):275-282.

Margetts JC, and Kalyan-Raman UP. Giant-Celled Glioblastoma of Brain. A Clinico-Pathological and Radiological Study of Ten Cases (Including Immunohistochemistry and Ultrastructure). *Cancer* 1989; 63(3)524-531.

Peraud A, Watanabe K, Schwechheimer K, et al. Genetic Profile of the Giant Cell Glioblastoma. *Lab Invest* 1999; 79(2):123-129.

Sembritzki O, Hagel C, Lamszus K, et al. Cytoplasmic Localization of Wild-type p53 in Glioblastomas Correlates with Expression of Vimentin and Glial Fibrillary Acidic Protein. *Neuro-Oncol* 2002 4(3):171-178.

Martinez-Diaz H, Kleinschmidt-DeMasters BK and Powell SZ. Giant Cell Glioblastoma and Pleomorphic Xanthoastrocytoma Show Different Immunohistochemical Profiles for Neuronal Antigens and p53 but Share Reactivity for Class III Beta-Tubulin. *Arch Pathol Lab Med* 2003; 127(9):1187-1191.

Akslen LA, Mork SJ, Larsen JL, et al. Giant Cell Glioblastoma. A Work-Up of 2 Cases with Long Survival. *Acta Neurol Scand* 1989; 79(3):194-199.

Case No. 6, Accession No. 29627 October 2004

Alameda (Alameda County Medical Center - Adenocarcinoma, metastatic
Baldwin Park (Kaiser Permanente) - Metastatic adenocarcinoma, c/w primary (3)
Glendale - Metastatic adenocarcinoma
Hayward/Fremont - Metastatic adenocarcinoma consistent with lung origin
Irvine (University of California Irvine) - Metastatic adenocarcinoma
Long Beach - Metastatic adenocarcinoma (6)
Monterey Park (Garfield Hospital) - Metastatic adenocarcinoma
Monterey (Monterey Peninsula Pathologists) - Metastatic adenocarcinoma consistent with lung primary
Mountain View (El Camino Pathology Group) - Metastatic adenocarcinoma
Oakland (Kaiser Permanente) - Metastatic adenocarcinoma (4)
Sacramento (UC Davis Medical Center) - Metastatic non-small cell carcinoma
San Diego (Naval Medical Center) - Metastatic adenocarcinoma from lung
San Francisco (SF General Hospital) - Metastatic lung adenocarcinoma
Santa Rosa (Santa Rosa Memorial Hospital) - Metastatic malignant mesothelioma (1); Metastatic carcinoma (1); Metastatic adenocarcinoma (1)
Ventura - High-grade papillary carcinoma
Arizona (Maryvale Medical Center) - Metastatic adenocarcinoma consistent with lung primary
Arkansas University of Arkansas Medical Center) - Metastatic pulmonary adenocarcinoma
Colorado, Evergreen) - Metastatic lung carcinoma
Colorado (Lutheran Medical Center) - Metastatic adenocarcinoma
Florida (Baptist Hospital) - Chorid plexus carcinoma if a metastasis can be ruled out (1); Met, lung carcinoma (adenocarcinoma) (2); Metastatic papillary adenocarcinoma (1); Adenocarcinoma (1)
Florida (Winter Haven Hospital) - Metastatic adenocarcinoma
Illinois, Burr Ridge) - Metastatic papillary carcinoma c/w lung primary
Illinois (Evanston Hospital) - Metastatic adenocarcinoma
Illinois (Northwestern Memorial Hospital) - Metastatic carcinoma
Indiana (Howard Community Hospital) - Metastatic adenocarcinoma
Louisiana (Louisiana State University Medical Center) - Metastatic carcinoma
Maryland (University of Maryland) - Metastatic lung cancer
Maryland (Johns Hopkins Memorial Hospital) - Adenocarcinoma, c/w metastasis from patient's know lung primary
Massachusetts (Berkshire Medical Center) - Metastatic adenocarcinoma (lung)
Massachusetts (New England Medical Center) - Metastatic adenocarcinoma of lung
Michigan, Kalamazoo) - Metastatic adenocarcinoma
Michigan (Oakwood Hospital) - Metastatic carcinoma
Michigan (St. Joseph Mercy Hospital) - Adenocarcinoma
Missouri (Truman Medical Center) - Lung adenocarcinoma metastasis
Nebraska (Creighton University School of Medicine Residents) - Metastatic adenocarcinoma
New York (Long Island Jewish Medical Center) - Metastatic adenocarcinoma, favor lung origin
New York (Nassau University Medical Center) - Metastatic carcinoma
New York (New York Presbyterian Residents) - Metastatic carcinoma, compatible with lung primary
New York (Stony Brook University Hospital Residents) - Metastatic adenocarcinoma
New York (Westchester Medical Center) - Metastatic adenocarcinoma
North Carolina (Mountain Area Pathology) - Metastatic adenocarcinoma (3)
Ohio (Medical College of Ohio) - Metastatic papillary adenocarcinoma
Ohio (McCullough Hyde Memorial Hospital) - Ependymoma
Pennsylvania (Lehigh Valley Hospital) - Metastatic carcinoma (2)
Pennsylvania (Mt. Nittany Medical Center) - Metastatic adenocarcinoma, left occipital lobe
Pennsylvania (Pennsylvania Hospital Residents) - Metastatic adenocarcinoma (2)
Puerto Rico (University of Puerto Rico) - Metastatic lung carcinoma
Qatar (Hamad Medical Corporation) - Metastatic adenocarcinoma of probable lung origin
Texas, Houston - Metastatic adenocarcinoma
Texas, Lubbock - Metastatic bronchioloalveolar carcinoma

Texas (Pro Path Associates) - Metastatic adenocarcinoma (2)
Texas (Scott & White Memorial Hospital) - Metastatic adenocarcinoma
West Virginia (Greenbrier Valley Medical Center) - Metastatic lung carcinoma
Wisconsin (Meriter Hospital) - Metastatic non-small carcinoma
Wisconsin (St. Vincent Hospital) - Metastatic adenocarcinoma, papillary, c/w lung origin
Australia (North Queensland Pathology) - Metastatic adenocarcinoma
Australia (Royal Prince Alfred Hospital) - Metastatic poorly differentiated carcinoma
Canada (Foothills Medical Center) - Metastatic small cell carcinoma of lung
Canada (Woodstock General Hospital) - Metastatic carcinoma
Brazil (UNIFESP/EPM) - Metastatic papillary adenocarcinoma of the lung (2)
Hong Kong (Hong Kong Baptist Hospital) - Metastatic adenocarcinoma
Jamaica (University Hospital of West Indies) - Metastatic lung adenocarcinoma, papillary type
Netherlands, Amsterdam - Metastatic papillary adenocarcinoma
Saudi Arabia (King Khalid University) - Metastatic bronchioalveolar carcinoma

Case 6 - Diagnosis:

Metastatic adenocarcinoma, probably pulmonary in origin
T-Y2000, M-81403

Case 6 - References:

Koutras AK, Marangos M, Kourelis T, et al. Surgical Management of Cerebral Metastases From Non-Small Lung Cancer. *Tumori* 2003; 89(3):292-297.

Ohta Y, Oda M, Tsunezuka Y, Uchiyama N, et al. Results of Recent Therapy for Non-Small-Cell Lung Cancer with Brain metastasis as the Initial Relapse. *Am J Clin Oncol* 2002; 25(5):476-479.

Rodrigus P, de Brouwer P and Raaymakers E. Brain Metastases and Non-Small Cell Lung Cancer. Prognostic Factors and Correlation with Survival After Irradiation. *Lung Cancer* 2001; 32(2):129-136.

Shahidi H and Kvale PA. Long-Term Survival Following Surgical Treatment of Solitary Brain Metastasis in Non-Small Cell Lung Cancer. *Chest* 1996; 109(1):271-276.

Arbit E, Wronski M, Burt M, et al. The Treatment of Patients with Recurrent Brain Metastases. A Retrospective Analysis of 109 Patients with Nonsmall Cell Lung Cancer. *Cancer* 1995; 76(5):765-773.

Case No. 7, Accession No. 29793 October 2004

Alameda (Alameda County Medical Center - Anaplastic astrocytoma
Baldwin Park (Kaiser Permanente) - Astrocytic astrocytoma (1); Oligodendroglioma (1); Glioma (1)
Glendale - Anaplastic oligodendroglioma
Hayward/Fremont - Astrocytoma, Grade II, modestly gemistocytic
Irvine (University of California Irvine) - Oligodendroglioma
Long Beach - Oligodendroglioma, high grade (6)
Monterey Park (Garfield Hospital) - Hi grade astrocytoma
Monterey (Monterey Peninsula Pathologists) - Oligodendroglioma
Mountain View (El Camino Pathology Group) - Oligodendroglioma
Oakland (Kaiser Permanente) - Anaplastic astrocytoma (4)
Sacramento (UC Davis Medical Center) - Astrocytoma, Grade II
San Diego (Naval Medical Center) - Oligodendroglioma, Grade II (WHO)
San Francisco (SF General Hospital) - Anaplastic oligodendroglioma
Santa Rosa (Santa Rosa Memorial Hospital) - Oligodendroglioma (2); Protoplasmic astrocytoma (1)
Ventura - Anaplastic astrocytoma
Arizona (Maryvale Medical Center) - Anaplastic astrocytoma, WHO Grade III
Arkansas University of Arkansas Medical Center) - Low-grade astrocytoma
Colorado, Evergreen) - Oligoastrocytoma
Colorado (Lutheran Medical Center) - Oligodendroglioma
Florida (Baptist Hospital) - Oligodendroglioma (4); Grade III glioma (1)
Florida (Winter Haven Hospital) - Anaplastic oligodendroglioma
Illinois, Burr Ridge) - Protoplasmic astrocytoma
Illinois (Evanston Hospital) - Anaplastic oligodendroglioma
Illinois (Northwestern Memorial Hospital) - Astrocytoma
Indiana (Howard Community Hospital) - Fibrillary astrocytoma
Louisiana (Louisiana State University Medical Center) - Oligodendroglioma

Maryland (University of Maryland) - Oligodendroglioma
Maryland (Johns Hopkins Hospital Residents) - Astrocytoma (WHO, Grade III)
Massachusetts (Berkshire Medical Center) - Mixed oligoastrocytoma, Grade II
Massachusetts (New England Medical Center) - Oligodendroglioma
Michigan, Kalamazoo) - Ganglioglioma
Michigan (Oakwood Hospital) - Anaplastic astrocytoma
Michigan (St. Joseph Mercy Hospital) - Oligodendroglioma
Missouri (Truman Medical Center) - Diffuse astrocytoma
Nebraska (Creighton University School of Medicine Residents) - Cystic astrocytoma
New York (Long Island Jewish Medical Center) - Dysembryoplastic neuroepithelial tumor
New York (Nassau University Medical Center) - Astrocytoma, anaplastic
New York (New York Presbyterian Residents) - Anaplastic astrocytoma (WHO, Grade III)
New York (Stony Brook University Hospital Residents) - Anaplastic astrocytoma
New York (Westchester Medical Center) - Anaplastic astrocytoma
North Carolina (Mountain Area Pathology) - Oligodendroglioma (3)
Ohio (Medical College of Ohio) - Diffuse astrocytoma, grade II
Ohio (McCullough Hyde Memorial Hospital) - Anaplastic astrocytoma
Pennsylvania (Lehigh Valley Hospital) - Pilocytic astrocytoma (1); Oligodendroglioma (1)
Pennsylvania (Mt. Nittany Medical Center) - Anaplastic astrocytoma
Pennsylvania (Pennsylvania Hospital Residents) - Subependymoma (2)
Puerto Rico (University of Puerto Rico) - Diffuse astrocytoma
Qatar (Hamad Medical Corporation) - Astrocytoma, Grade III
Texas, Houston - Astrocytoma II
Texas, Lubbock - Oligodendroglioma
Texas (Pro Path Associates) - Pilocytic astrocytoma (2)
Texas (Scott & White Memorial Hospital) - Oligodendroglioma
West Virginia (Greenbrier Valley Medical Center) - Astrocytoma, low grade
Wisconsin (Meriter Hospital) - Grade II-III astrocytoma
Wisconsin (St. Vincent Hospital) - Anaplastic astrocytoma vs. oligoastrocytoma
Australia (North Queensland Pathology) - Oligodendroglioma
Australia (Royal Prince Alfred Hospital) - Mixed oligoastrocytoma
Canada (Foothills Medical Center) - Oligodendroglioma, WHO Grade II
Canada (Woodstock General Hospital) - Astrocytoma
Brazil (UNIFESP/EPM) - Ganglion cell tumor/ganglioglioma (2)
Hong Kong (Hong Kong Baptist Hospital) - Protoplasmic astrocytoma
Jamaica (University Hospital of West Indies) - Pilocytic astrocytoma, cystic
Netherlands, Amsterdam - Anaplastic oligodendroglioma
Saudi Arabia (King Khalid University) - Low grade (fibrillary Grade II) astrocytoma

Case 7 - Diagnosis:

Anaplastic oligodendroglioma, frontal lobe
T-X2000, M-94513

Consultation: Boleslaw Liwniez, M.D., (LLUMC) "Anaplastic Oligodendroglioma" & Amyn M. Rojiani, M.D. (H. Lee Moffitt Cancer Center-Univerisity of South Florida, Tampa), "Anaplastic Astrocytoma".

Case 7 - References:

Gelpi E, Ambros IM, Birner P, et al. Fluorescent In-Situ Hybridization on Isolated Tumor Cell Nuclei. A Sensitive Method for 1p and 19q Deletion Analysis in Paraffin-Embedded Oligodendroglial Tumor Specimens. *Mod Pathol* 2003; 16(7):708-715.
Anand M, Kumar R, Jain P, et al. Metastatic Anaplastic Oligodendroglioma Simulating Acute Leukemia. A Case Report. *Acta Cytol* 2003; 47(3):467-469.
Sharma A, Agarwal A, Sharma MC, et al. Bone Marrow Metastasis in Anaplastic Oligodendroglioma. *Int J Clin Pract* 2003; 57(4):351-352.

Case No. 8, Accession No. 29095 October 2004

Alameda (Alameda County Medical Center - Glioblastoma multiforme
Baldwin Park (Kaiser Permanente) - Glioblastoma multiforme (2); Glioblastoma (1)
Glendale - Glioblastoma multiforme
Hayward/Fremont - Malignant astrocytoma (Grade III)

Irvine (University of California Irvine) - Glioblastoma multiforme
Long Beach - Glioblastoma multiforme (6)
Monterey Park (Garfield Hospital) - Glioblastoma multiforme
Monterey (Monterey Peninsula Pathologists) - Glioblastoma multiforme
Mountain View (El Camino Pathology Group) - Glioblastoma multiforme
Oakland (Kaiser Permanente) - Glioblastoma (4)
Sacramento (UC Davis Medical Center) - Oligo and astrocytoma, high grade vs. glioblastoma multiforme
San Diego (Naval Medical Center) - Glioblastoma multiforme
San Francisco (SF General Hospital) - Oligodendroglioma
Santa Rosa (Santa Rosa Memorial Hospital) - Glioblastoma multiforme (3)
Ventura - Glioblastoma multiforme
Arizona (Maryvale Medical Center) - Glioblastoma, WHO Grade IV
Arkansas University of Arkansas Medical Center) - Glioblastoma multiforme
Colorado, Evergreen) - Anaplastic astrocytoma
Colorado (Lutheran Medical Center) - Anaplastic oligodendroglioma
Florida (Baptist Hospital) - Glioblastoma multiforme (5)
Florida (Winter Haven Hospital) - Astrocytoma
Illinois, Burr Ridge) - Psammomatous meningioma
Illinois (Evanston Hospital) - Glioblastoma multiforme
Illinois (Northwestern Memorial Hospital) - Glioblastoma multiforme
Indiana (Howard Community Hospital) - Grade III, astrocytoma
Louisiana (Louisiana State University Medical Center) - Glioblastoma multiforme
Maryland (University of Maryland) - Anaplastic ependymoma vs. papillary glioneuronal tumor
Maryland (Johns Hopkins Hospital Residents) - Glioblastoma multiforme
Massachusetts (Berkshire Medical Center) - Glioblastoma multiforme
Massachusetts (New England Medical Center) - Ependymoma
Michigan, Kalamazoo) - Glioblastoma multiforme
Michigan (Oakwood Hospital) - Glioblastoma multiforme
Michigan (St. Joseph Mercy Hospital) - Glioblastoma multiforme
Missouri (Truman Medical Center) - Glioblastoma multiforme
Nebraska (Creighton University School of Medicine Residents) - Glioblastoma multiforme
New York (Long Island Jewish Medical Center) - Glioblastoma
New York (Nassau University Medical Center) - Glioblastoma multiforme
New York (New York Presbyterian Residents) - Glioblastoma multiforme (WHO Grade IV)
New York (Stony Brook University Hospital Residents) - Glioblastoma multiforme
New York (Westchester Medical Center) - Glioblastoma multiforme (GBM)
North Carolina (Mountain Area Pathology) - Glioblastoma multiforme
Ohio (Medical College of Ohio) - Glioblastoma multiforme
Ohio (McCullough Hyde Memorial Hospital) - Anaplastic oligodendroglioma
Pennsylvania (Lehigh Valley Hospital) - Glioblastoma multiforme (2)
Pennsylvania (Mt. Nittany Medical Center) - Glioblastoma multiforme, temporal lobe
Pennsylvania (Pennsylvania Hospital Residents) - Glioblastoma multiforme (2)
Puerto Rico (University of Puerto Rico) - Glioblastoma multiforme
Qatar (Hamad Medical Corporation) - Glioblastoma multiforme
Texas, Houston - Ependymoma
Texas, Lubbock - Glioblastoma multiforme
Texas (Pro Path Associates) - Glioblastoma multiforme (2)
Texas (Scott & White Memorial Hospital) - Glioblastoma multiforme
West Virginia (Greenbrier Valley Medical Center) - Glioblastoma multiforme
Wisconsin (Meriter Hospital) - Grade IV, astrocytoma
Wisconsin (St. Vincent Hospital) - Glioblastoma
Australia (North Queensland Pathology) - Glioblastoma multiforme
Australia (Royal Prince Alfred Hospital) - Anaplastic ependymoma
Canada (Foothills Medical Center) - Glioblastoma multiforme
Canada (Woodstock General Hospital) - Astrocytoma
Brazil (UNIFESP/EPM) - Glioblastoma (2)
Hong Kong (Hong Kong Baptist Hospital) - Glioblastoma
Jamaica (University Hospital of West Indies) - Glioblastoma multiforme, small cell variant
Netherlands, Amsterdam - Astrocytoma
Saudi Arabia (King Khalid University) - Glioblastoma multiforme

Case 8 - Diagnosis:

Glioblastoma multiforme, temporal lobe
T-X2000, M-94403

Case 8 – References:

Shi R, Shi T, Karemen TJ, Horvath S, et al. Gene Expression Profiling Identifies Molecular Subtypes of Gliomas. *Oncogene* 2003; 22(31):4918-4923.

Barnholtz-Sloan JS, Sloan AE, Schwartz AG, et al. Racial Differences in Survival After Diagnosis with Primary Malignant Brain Tumor. *Cancer* 2003; 98(3):603-609.

Burger PC and Green SB. Patient Age, Histologic Features and Length of Survival in Patients with Glioblastoma Multiforme. *Cancer* 1987; 59(9):1617-1625.

Burger PC, Vogel FS, Green SB, et al. Glioblastoma Multiforme and Anaplastic Astrocytoma. Pathologic Criteria and Prognostic Implications. *Cancer* 1985; 56(5):1106-1111.

Coons SW and Johnson PC. Regional Heterogeneity in the Proliferative Activity of Human Gliomas as Measured by Ki-67 Labeling Index. *J Neuropathol Exp Neurol* 1993; 52(6):609-618.

Dolman CL. Lymph Node Metastasis as First Manifestation of Glioblastoma. Case Report. *J Neurosurg* 1974; 41(5):607-609.

Case No. 9, Accession No. 29853 — October 2004

Alameda (Alameda County Medical Center - Invasive meningioma
Baldwin Park (Kaiser Permanente) - Meningioma, meningothelial type (1); Meningioma (2)
Glendale - Meningioma
Hayward/Fremont - Meningioma
Irvine (University of California Irvine) - Meningioma with psammoma bodies
Long Beach - Meningioma (6)
Monterey Park (Garfield Hospital) - Meningioma
Monterey (Monterey Peninsula Pathologists) - Meningioma
Mountain View (El Camino Pathology Group) - Meninginoma
Oakland (Kaiser Permanente) - Meningioma (4)
Sacramento (UC Davis Medical Center) - Meningioma
San Diego (Naval Medical Center) - Meningioma, Grade I (WHO)
San Francisco (SF General Hospital) - Meningioma
Santa Rosa (Santa Rosa Memorial Hospital) - Meningioma (3)
Ventura - Meningioma
Arizona (Maryvale Medical Center) - Atypical meningioma, WHO Grade II
Arkansas University of Arkansas Medical Center) - Meningioma
Colorado, Evergreen) - Transitional meningioma
Colorado (Lutheran Medical Center) - Meningioma
Florida (Baptist Hospital) - Fibrous type meningioma (1); Meningioma (4)
Florida (Winter Haven Hospital) - Meningioma
Illinois, Burr Ridge) - Chondrosarcoma
Illinois (Evanston Hospital) - Meningioma
Illinois (Northwestern Memorial Hospital) - Meningioma
Indiana (Howard Community Hospital) - Meningioma
Louisiana (Louisiana State University Medical Center) - Lipidized meningioma
Maryland (University of Maryland) - Transitional meningioma
Maryland (Johns Hopkins Hospital Residents) - Meningioma
Massachusetts (Berkshire Medical Center) - Meningioma
Massachusetts (New England Medical Center) - Meningioma
Michigan, Kalamazoo) - Plexiform meningioma
Michigan (Oakwood Hospital) - Meningioma
Michigan (St. Joseph Mercy Hospital) - Meningioma
Missouri (Truman Medical Center) - Meningioma
Nebraska (Creighton University School of Medicine Residents) - Meningioma
New York (Long Island Jewish Medical Center) - Meningioma
New York (Nassau University Medical Center) - Meningioma, fibroblastic
New York (New York Presbyterian Residents) - Meningioma
New York (Stony Brook University Hospital Residents) - Meningioma
New York (Westchester Medical Center) - Meningioma

North Carolina (Mountain Area Pathology) - Meningioma (3)
Ohio (Medical College of Ohio) - Meningioma
Ohio (McCullough Hyde Memorial Hospital) - Meningioma
Pennsylvania (Lehigh Valley Hospital) - Meningioma (2)
Pennsylvania (Mt. Nittany Medical Center) - Metaplastic meningioma, intracranial
Pennsylvania (Pennsylvania Hospital Residents) - Metaplastic lipomatous meningioma (2)
Puerto Rico (University of Puerto Rico) - Meningioma
Qatar (Hamad Medical Corporation) - Meningioma
Texas, Houston - Meningioma, syncytial variant
Texas, Lubbock - Meningiotheliomatous meningioma
Texas (Pro Path Associates) - Meningioma (2)
Texas (Scott & White Memorial Hospital) - Meningioma
West Virginia (Greenbrier Valley Medical Center) - Fibrous meningioma
Wisconsin (Meriter Hospital) - Atypical meningioma
Wisconsin (St. Vincent Hospital) - Meningioma
Australia (North Queensland Pathology) - Meningioma
Australia (Royal Prince Alfred Hospital) - Metaplastic meningioma (Grade I)
Canada (Foothills Medical Center) - Lipomatous meningioma
Canada (Woodstock General Hospital) - Meningioma
Brazil (UNIFESP/EPM) - Meningioma, WHO Grade I (2)
Hong Kong (Hong Kong Baptist Hospital) - Lipomeningioma
Jamaica (University Hospital of West Indies) - Meningioma, transitional type
Netherlands, Amsterdam - Meningothelial meningioma
Saudi Arabia (King Khalid University) - Meningioma, meningiothelial type

Case 9 - Diagnosis:

Meningioma with lipomatosis metaplasia
T-X2000, M-95301

Case 9 – References:

Atlas of Tumor Pathology Third Series Fascicle 10. Tumors of the Central Nervous System. Peter Burger, M.D./Bernd Scheithauer, M.D. Armed Forces Institute of Pathology, Washington DC 1999; 259-286.
See References on Case #4

Case No. 10, Accession No. 29098 October 2004

Alameda (Alameda County Medical Center - Chondrosarcoma
Baldwin Park (Kaiser Permanente) - Chondrosarcoma (3)
Glendale - Chondrosarcoma
Irvine (University of California Irvine) - Chondrosarcoma
Long Beach - Chondrosarcoma (6)
Monterey Park (Garfield Hospital) - Chondrosarcoma
Monterey (Monterey Peninsula Pathologists) - Chondrosarcoma, low grade
Mountain View (El Camino Pathology Group) - Chondrosarcoma
Oakland (Kaiser Permanente) - Chondrosarcoma (4)
Sacramento (UC Davis Medical Center) - Chondrosarcoma, low grade (I-II)
San Diego (Naval Medical Center) - Chondrosarcoma
San Francisco (SF General Hospital) - Chondrosarcoma
Santa Rosa (Santa Rosa Memorial Hospital) - Chondrosarcoma (3)
Ventura - Chondrosarcoma
Arizona (Maryvale Medical Center) - Chondrosarcoma, low grade (I-II)
Arkansas University of Arkansas Medical Center) - Chondrosarcoma
Colorado, Evergreen) - Chondrosarcoma
Colorado (Lutheran Medical Center) - Chondrosarcoma
Florida (Baptist Hospital) - Chondrosarcoma (3); Chondroblastic osteosarcoma (1); Osteogenic sarcoma (1)
Florida (Winter Haven Hospital) - Chondroma
Illinois, Burr Ridge) - Astrocytoma, Grade III
Illinois (Evanston Hospital) - Chondrosarcoma
Illinois (Northwestern Memorial Hospital) - Chondrosarcoma
Indiana (Howard Community Hospital) - Chondrosarcoma

Louisiana (Louisiana State University Medical Center) - Chondrosarcoma
Maryland (University of Maryland) - Chondrosarcoma
Maryland (Johns Hopkins Hospital Residents) - Chondrosarcoma
Massachusetts (Berkshire Medical Center) - Mesenchymal chondrosarcoma
Massachusetts (New England Medical Center) - Chondroma
Michigan, Kalamazoo) - Chondrosarcoma
Michigan (Oakwood Hospital) - Gliosarcoma
Michigan (St. Joseph Mercy Hospital) - Chondrosarcoma
Missouri (Truman Medical Center) - Mesenchymal chondrosarcoma (extraosseous)
Nebraska (Creighton University School of Medicine Residents) - Chordoma
New York (Long Island Jewish Medical Center) - Chondrosarcoma
New York (Nassau University Medical Center) - Low grade chondrosarcoma
New York (New York Presbyterian Residents) - Chondrosarcoma
New York (Stony Brook University Hospital Residents) - Chondrosarcoma
New York (Westchester Medical Center) - Chondrosarcoma
North Carolina (Mountain Area Pathology) - Chondrosarcoma (3)
Ohio (Medical College of Ohio) - Chondrosarcoma
Ohio (McCullough Hyde Memorial Hospital) - Chondrosarcoma
Pennsylvania (Lehigh Valley Hospital) - Chondrosarcoma (2)
Pennsylvania (Mt. Nittany Medical Center) - Chondrosarcoma, cranium
Pennsylvania (Pennsylvania Hospital Residents) - Mesenchymal chondrosarcoma (2)
Puerto Rico (University of Puerto Rico) - Chondrosarcoma, Grade I
Qatar (Hamad Medical Corporation) - Chondrosarcoma
Texas, Houston - Chondroma
Texas, Lubbock - Chondrosarcoma
Texas (Pro Path Associates) - Chondrosarcoma (2)
Texas (Scott & White Memorial Hospital) - Chondrosarcoma
West Virginia (Greenbrier Valley Medical Center) - Chondroma
Wisconsin (Meriter Hospital) - Chondroid neoplasm
Wisconsin (St. Vincent Hospital) - Chondroblastic osteosarcoma (vs. chondrosarcoma) (1)
Australia (North Queensland Pathology) - Chondroma
Australia (Royal Prince Alfred Hospital) - Chondroblastoma
Canada (Foothills Medical Center) - Chondrosarcoma
Canada (Woodstock General Hospital) - Chondrosarcoma
Brazil (UNIFESP/EPM) - Mesenchymal chondrosarcoma (2)
Hong Kong (Hong Kong Baptist Hospital) - Chondroblastoma
Jamaica (University Hospital of West Indies) - Chondrosarcoma
Netherlands, Amsterdam - Chondrosarcoma
Saudi Arabia (King Khalid University) - Chondrosarcoma

Case 10 - Diagnosis:

Low grade chondrosarcoma, cranium and infratemporal fossa
T-Y0151, M-92203

Case 10 - References:

Sala F, Talacchi A, Beltramello A, et al. Intracranial Myxoid Chondrosarcoma with Early Intradural Growth. *J Neurosurg Sci* 1998; 42(3):159-163.

Reid CB, Fagan PA and Turner J. Low-Grade Myxoid Chondrosarcoma of the Temporal Bone. Differential Diagnosis and Report of Two Cases. *Am J Otol* 1994; 15(3):419-422.

Korten AG, ter Berg HJ, Spincemaille GH, et al. Intracranial Chondrosarcoma. Review of the Literature and Report of 15 Cases. *J Neurol Neurosurg Psychiatry* 1998; 65(1):88-92.

Oikawa H, Satoh T, Masuda T, et al. Intrafcranial Low-Grade Chondrosarcoma with Hyperostosis of the Skull. A Case Report. *J Neurooncol* 2000; 49(3):249-254.

Kubota T, Hayashi M and Yamamoto, S. Primary Intracranial Mesenchymal Chondrosarcoma. Case Report with Review of the Literature. *Neurosurg* 1982; 10(1):105-110.