


Collecting Cancer Data: Central Nervous System

2014-2015 NAACCR Webinar Series
August 6, 2015




Q&A


- Please submit all questions concerning webinar content through the Q&A panel.

Reminder:

- If you have participants watching this webinar at your site, please collect their names and emails.
- We will be distributing a Q&A document in about one week. This document will fully answer questions asked during the webinar and will contain any corrections that we may discover after the webinar.



FABULOUS PRIZES



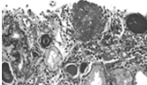

AGENDA

- Casefinding
- MP/H
 - Quiz
- Anatomy
- Stage
- Treatment
 - Quiz
- Case Scenarios

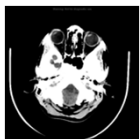
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CASEFINDING

- Disease Index
- Pathology Reports
- Radiation Completion Summaries
- Cytology Reports



Collapsingglomerulopathyveryhighmag.jpg
Microsoft PowerPoint clip art



Brainsternhighmag.jpg
Microsoft PowerPoint clip art

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CASE ELIGIBILITY

- Includes malignant & non-malignant tumors diagnosed on or after 1/1/2004 of the following sites:
 - Meninges (C70._)
 - Brain (C71._)
 - Spinal cord, cranial nerves, & other CNS (C72._)
 - Pituitary gland (C75.1)
 - Craniopharyngeal duct (C75.2)
 - Pineal gland (C75.3)

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QUESTION FOR JIM

pop?
quiz

What is one exception to these case eligibility rules?

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TODAY WE WILL BE TOUCHING ON;

- Gliomas
- (PNET) Primitive Neuroectodermal tumors
- Meningiomas
- Primary Spinal Cord Tumors


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TIP OF THE DAY!

Don't confuse these two acronyms....

Ppnet's are not the same as PNET's!

Ppnet's or (peripheral Primitive Neuroectodermal Tumor's): usually occur in the soft tissues of the chest, pelvis, and retroperitoneum and are rarely intracranial.

TIP

TIPBULB.JPG
Microsoft PowerPoint
clip art

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REPORTABLE TERMS

FORDS Case Eligibility & Overview of Coding Principles
Section 1 page 3

Ambiguous Terms List Constituting a Reportable Diagnosis

- Tumor (Beginning with 2004 diagnosis and only for Sites C70.0-C72.9, C75.1-C75.3)
- Neoplasm Tumor (Beginning with 2004 diagnosis and only for Sites C70.0-C72.9, C75.1-C75.3)

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EQUIVALENT OR EQUAL TERMS LIST

Only Equivalent when determining the number of primaries or histology **NOT REPORTABILITY:**

- Tumor
- Mass
- Lesion
- Neoplasm

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QUESTION FOR JIM

pop? quiz

Is "Lhermitte-Duclos disease" reportable?

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BENIGN & BORDERLINE

- Benign & Borderline Intracranial & CNS neoplasms are reportable if and only if
- The neoplasm meets **2** criteria
 1. The Histology is reportable **AND**
 2. The Primary Site is reportable

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CRANIAL TUMORS

- Report neoplasms described as intradural or intracranial
- Do not report cranial neoplasms described as extradural

Cross-section of skull and the Meninges

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QUESTION FOR JIM

pop? quiz

What site should a Tuberculum sellae meningioma be coded to ?

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MULTIPLE PRIMARY & HISTOLOGY RULES

- Based on the behavior of the tumor
- Malignant Meninges, Brain, Spinal Cord, Cranial Nerves, Pituitary gland, Craniopharyngeal duct and Pineal gland
- Benign and Borderline Intracranial and CNS Tumors

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MULTIPLE PRIMARY & HISTOLOGY RULES

Malignant
Meninges, Brain, Spinal Cord, Cranial Nerves, Pituitary gland, Craniopharyngeal duct and Pineal gland

malignant

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MULTIPLE TUMORS		DECISION	
Multiple tumors may be a single primary or multiple primaries.			
M4	<p>Is there an Invasive tumor (3) and either a benign (0) or an uncertain/borderline tumor (1)?</p> <p>NO</p>	YES	MULTIPLE Primaries**
M5	<p>Are there tumors in sites with ICD-O-3 topography codes that are different at the second (Cxx) and/or third character (Cxx)?</p> <p>NO</p>	YES	MULTIPLE Primaries**

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pop? quiz

Does Timing &/or laterality play a role in determining multiple primaries for malignant intracranial and CNS tumors

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MULTIPLE PRIMARY & HISTOLOGY RULES

Benign and Borderline
Intracranial and CNS Tumors

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MS

Are there tumors on **both sides** (left and right) of a **paired site** (See Table 1)?

NO

YES

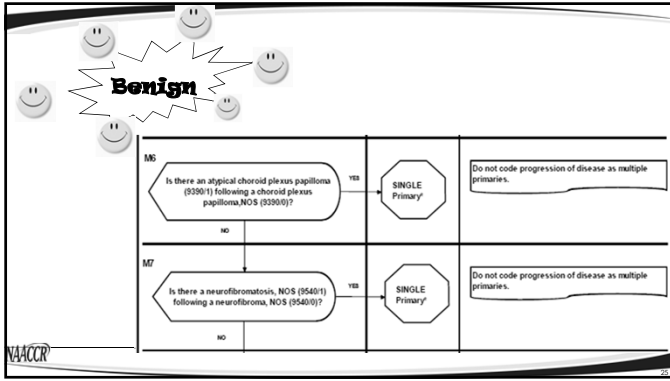
MULTIPLE Primaries**

Benign

Table 1 – Paired Sites
Table Instructions: Use this table to Identify paired sites (Rule M5).

Column 1: Paired Sites	Column 2: Code
Cerebral meninges, NOS	C700
Cerebrum	C710
Frontal lobe	C711
Temporal lobe	C712
Parietal lobe	C713
Occipital lobe	C714
Olfactory nerve	C722
Optic nerve	C723
Acoustic nerve	C724
Cranial nerve	C725

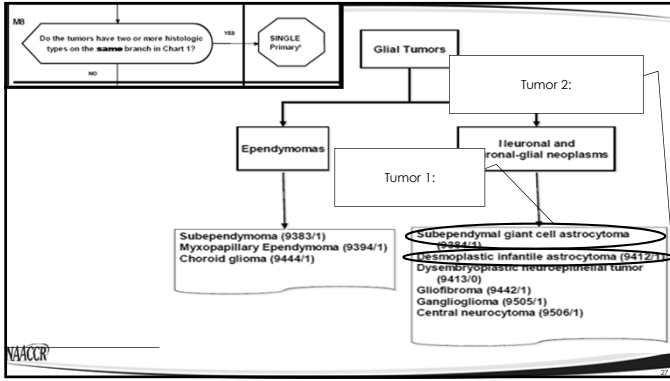
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QUESTION FOR JIM

pop? quiz

- When a patient has two Benign and Borderline Intracranial and CNS Tumors that have two or more histologic types on the same branch of Chart 1, is the cases a single or multiple primary?



SEQUENCING

- Records sequence of malignant and nonmalignant neoplasms over patient's lifetime.
- 00-59 and 99 for malignant and in situ behavior
 - 00 = solitary malignant neoplasm
 - 01 = first of multiple malignant neoplasms
- 60-88 for non-malignant behavior
 - 60 = solitary non-malignant neoplasm
 - 61 = first of multiple non-malignant neoplasms

4, 5, ?

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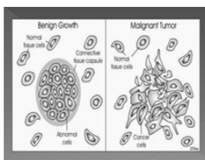
**AND NOW A BRIEF PAUSE FOR...
AN EPI MOMENT**

(insert the *Bonanza* theme song here)

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REPORTING: BRAIN & CNS TUMORS


- First primary, clusters
- Malignant and non-malignant (2004+)
 - Non-malignant causes disruption of normal function similar to malignant
 - Location impacts survival
- Benign Brain Tumors Cancer Registries Amendment Act, Public Law 107-260
 - 2002
- CBTRUS



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EPIDEMIOLOGY: BRAIN & CNS TUMORS

- Non-malignant rates higher (11.0 per 100,000 versus 6.6)
 - Rates higher in women (13.8 per 100,000 versus 7.9)
- Malignant rates higher in developed countries
 - Rates higher in men (7.8 per 100,000 versus 5.6)
- Survival varies significantly by age, behavior, & histology
 - Pediatric survival a success story
 - 0-19 73% 5-year survival; 20-44 59%; 45-54 31%; 55-64 18%, 65-74 11%; 75+ 6% (malignant)
 - Non-malignant survival higher in US than Europe
 - 96% US 69-77 % Europe (adults)
 - Glioblastoma lowest survival rates
 - 4-17% 5-year survival dependent upon age



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INCIDENCE, MORTALITY, TRENDS


- Analyzed as Brain & CNS; malignant
- Incidence 14th men, 2008-2012
 - 7.8 per 100,000
 - ↑ 1.4% annually
- Incidence 15th women, 2008-2012
 - 5.6 per 100,000
 - ↓ 1.8% annually
- Mortality 11th men, 2008-2012
 - 5.3 per 100,000
 - stable
- Mortality 10th women, 2008-2012
 - 3.5 per 100,000
 - stable



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ETIOLOGY/RISK FACTORS


- Established risks
 - Radiation exposure (Radiation therapy)
 - Genetic disorders: Neurofibromatosis type 1 & 2, tuberous sclerosis, Von Hippel-Lindau disease, Li-Fraumeni
- Suspected risks
 - Cell phone use (radiofrequency rays not ionizing radiation)
 - Occupation exposures (vinyl chloride, petroleum products)
- Popular myths
 - Sugar substitutes (aspartame)
 - EMF
 - Some viruses



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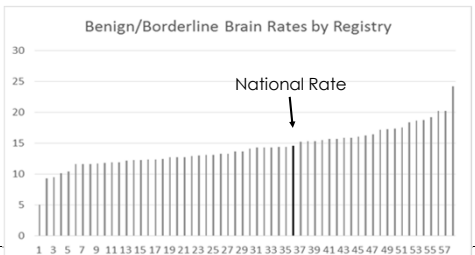
CINA RESEARCH

- CBTRUS
 - Descriptive epidemiology
 - Documented under reporting
- Annual Report to the Nation 2010
- Pediatric
 - Appalachian versus non-Appalachian
 - Potential genetic component
 - Pilot project to develop hypotheses about why risk in Appalachian children is higher



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VARIABILITY OF BENIGN/BORDERLINE BRAIN TUMORS, 2009-2012; RANGE 5.1, 24.2



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UNDERREPORTING

- Benign/Borderline brain tumors historically have high degree of inter-registry variability in rates
- Does the variability have public health importance or is it spurious?
- Prior investigation indicates benign/borderline brain tumors variability driven by case completeness differences

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PILOT PROJECT OBJECTIVES

- Prior work indicates specific patient & tumor characteristics associated with underreporting for brain
 - Non-microscopically confirmed, non-surgery
 - Younger age, Specific subsites
- Assess benign/borderline brain tumors variability by registry
- Survey high and low incidence registries
 - Mutable differences in case ascertainment
 - training, operations
- Assess correlations with rates
 - Registry capacity, reporting facilities capacity, demographics, geography





SURVEY

- Questions
 - 15 general
 - 18 brain/cns specific
 - Qualitative & quantitative
- Incidence ranked by US registry
 - Ranked sum
 - Incidence of benign/borderline brain tumors & % benign/borderline brain of total brain tumors
- Benign/Borderline/Uncertain defined by CBTRUS
 - Site/histology specific
 - Updated 2012, expands SEER recode


SURVEY RESULTS: LOWER INCIDENCE

- < % state funding
 - 100% Federal
- < % electronic sources
 - Paper abstracting
 - Physician office, pathology labs, stand-alone radiation facilities
- >% reporting from local hospitals
 - versus cancer centers

SURVEY RESULTS: HIGHER INCIDENCE

- History of collection prior to 2004
- History of brain specific ascertainment training
 - 1 low registry had recent training
- History of issue
- Active case finding
 - Radiation facilities
 - Site-specific
 - AIM software synoptic software
 - Hospital discharge
- Documented fewer case deletions during editing over time
- Knowledge of issues; prior self assessment
 - Open ended questions—lists of potential barriers



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SURVEY RESULTS: QUALITATIVE

- Open ended questions: extensive lists of barriers
- High
 - Follow-back because brains are missed at facilities; delay-reporting (high)
 - Radiology only cases
 - Local hospitals; out of state centers
- Low
 - "We don't get credit for those cases"
 - "We have a back-log. We try to abstract all cases but if I have a malignant brain I will abstract that first."

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CORRELATIONS RESULTS

- No correlation
 - # CoC hospitals; # NCI centers; # Pedi Oncology Groups
 - Population size, Geographic area, Poverty, Rural
- Weak correlation
 - % non-Hispanic black +
- Moderate correlation
 - SEER registries +, Population Density +
- Strong correlation
 - NAACCR Certification +


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CONCLUSIONS

- Active case finding
 - Linkage, use electronic sources
 - Site Specific, code specific, patient discharge
 - Non-Hospital sources
 - Radiology
- Brain
 - Active radiology case finding/hospital discharge
 - Site specific
 - AIM software

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PUBLIC HEALTH RELEVANCE

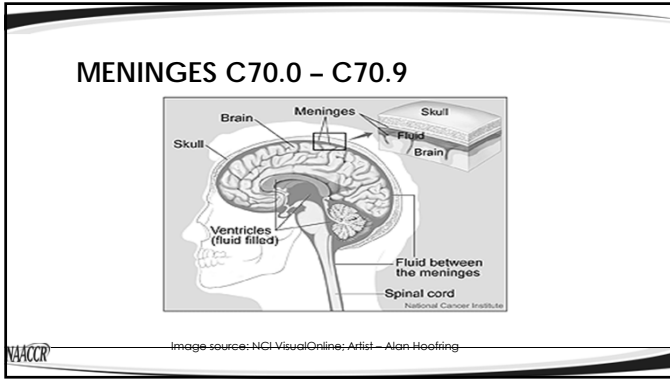


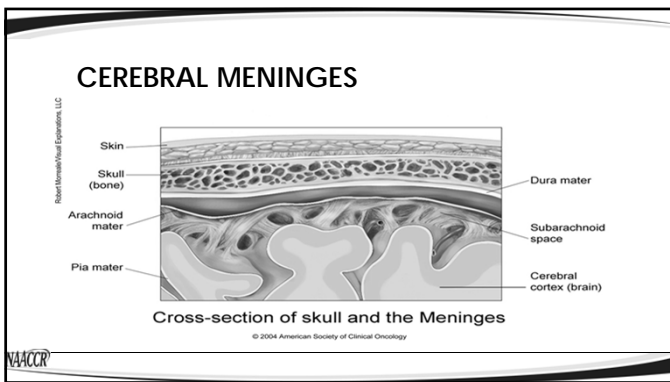
- Collection ever more complex for all registries irrespective of funding level
- Important to determine specific methods that result in high levels of case ascertainment
- To effectively inform public health practice and research, we need to define and promulgate effective methods that can be adopted by all registries

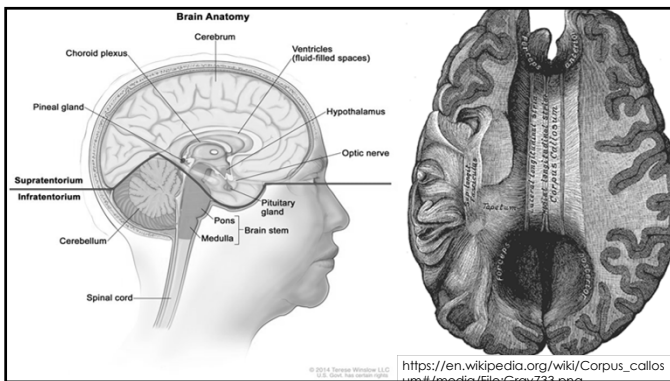
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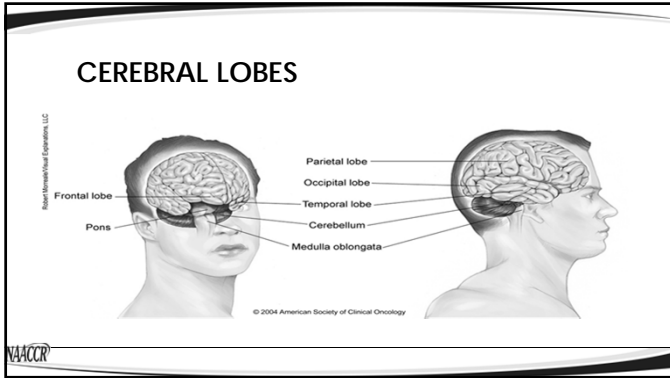
ANATOMY

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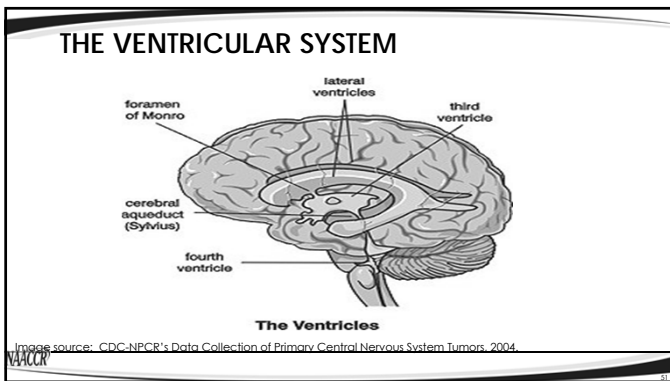


LATERALITY

•CNS sites defined as paired for cases diagnosed 1/1/2004 and after

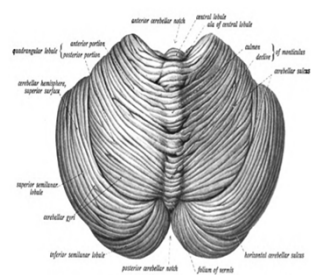
- Cerebral meninges C70.0
- Cerebrum C71.0
- Frontal lobe C71.1
- Temporal lobe C71.2
- Parietal lobe C71.3
- Occipital lobe C71.4
- Olfactory nerve C72.2
- Optic nerve C72.3
- Acoustic nerve C72.4
- Cranial nerve, NOS C72.5

•Assign laterality as '0' for all other CNS sites



CEREBELLUM

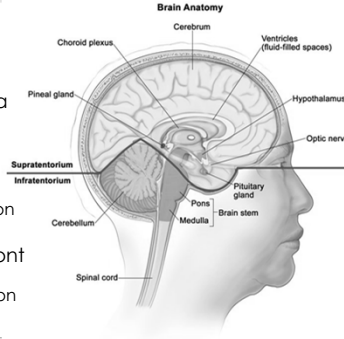
- Vermis: narrow median portion of cerebellum between the 2 lateral hemispheres
- Lateral lobes: 2 lateral hemispheres of cerebellum; cranial and caudal
- Cerebellopontine angle: angle between cerebellum and pons



https://en.wikipedia.org/wiki/Cerebellum#/media/File:Sobo_1909_653.png

BRAIN STEM

- Pons: portion of brain stem superior to medulla oblongata
- Medulla oblongata: lower portion of brain stem
 - Olive: pair of oval structures in medulla oblongata
 - Pyramid: anterior or ventral portion of medulla oblongata
- Midbrain: mesencephalon; front of brain stem
 - Cerebral peduncle: ventral portion of midbrain



SPINAL CORD

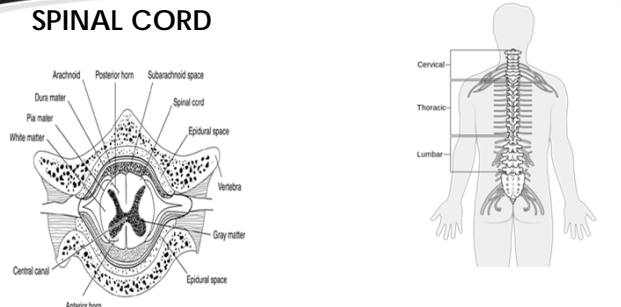


Image source: CDC-NPCR's Data Collection of Primary Central Nervous System Tumors, 2004.

https://en.wikipedia.org/wiki/Spinal_cord#/media/File:Diagram_of_the_spinal_cord_CRUK_046.svg

INTRACRANIAL ENDOCRINE GLANDS AND RELATED STRUCTURES

- Endocrine glands
- Pituitary gland
- Pineal gland
- Craniopharyngeal duct

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pop? quiz

What histology code do we use for an adenoma of the pituitary gland?

8272/0

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NEURONS AND GLIAL CELLS

NEURONS

- Neurons are the conducting cells of the nervous system.

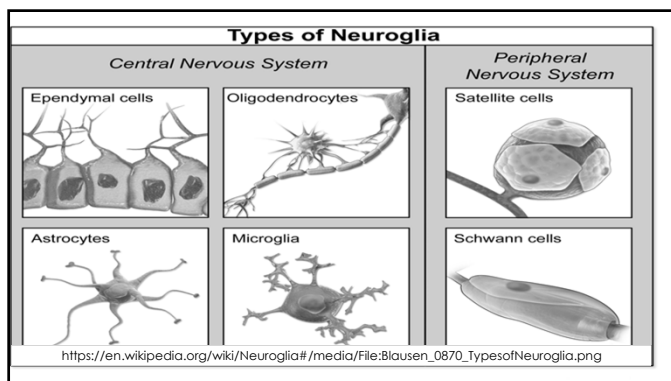
Structure of a Typical Neuron

GLIAL CELLS

- Do not conduct nerve impulses
- Support, nourish, and protect the neurons
- Glial cells are far more numerous than neurons and, unlike neurons, are capable of mitosis.

<http://training.seer.cancer.gov/brain/tumors/anatomy/neurons.html>

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WHO GRADE

- CNS tumor histologies are based on WHO grade as well as standard nomenclature.
- See page 596 of the AJCC Staging manual

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QUESTION FOR KENDRA

pop? quiz

How do we code histologic grade for a malignant brain tumor case where all we have is a WHO grade?

What about Anaplastic Astrocytoma, WHO grade III?

<http://seer.cancer.gov/tools/grade/>

What if the case is a benign tumor?

Where do we code the WHO Grade?

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STAGING
 AJCC
 Summary Stage
 Collaborative Stage

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AJCC STAGE

- Chapter 56 page 593
- No stage grouping
- Excellent background information
- Table 56.2 WHO classification of tumors of the central nervous system
- Table 56.3 WHO grades of CNS Tumors
- Brain Tumor Survival Data

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AJCC STAGE

• Clinical Stage	T88 N88 M88 Stage 88
• Pathologic Stage	T88 N88 M88 Stage 88
• Clinical Staged by	8
• Pathologic Staged by	8
• TNM Edition	88

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AJCC STAGE-88

- 88 is not an AJCC code
 - Defined by FORDS as "Not Applicable"
 - Defined by SEER as "Not applicable, no code assigned for this case in the current AJCC Staging Manual"
 - The primary site and histology are not included in the chapter
- Leukemia, CNS, malignancy of the medulla of the adrenal gland
- Lymphoma
 - T88 N88 M88 Stage I, II, III, IV

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SUMMARY STAGE 2000

- 1 Local
 - Confined to: one hemisphere in one part of brain (infra/supratentorial); meninges; invading/encroaching on ventricular system
- 5 Regional
 - crossing midline or tentorium invades bone, blood vessel, nerves, spinal cord
- 7 Distant
 - Circulating cells in CSF; extension to nasal cavity, nasopharynx, posterior pharynx; outside CNS
- 8 Benign
 - Codes 0, 2, 3, 4 are not applicable

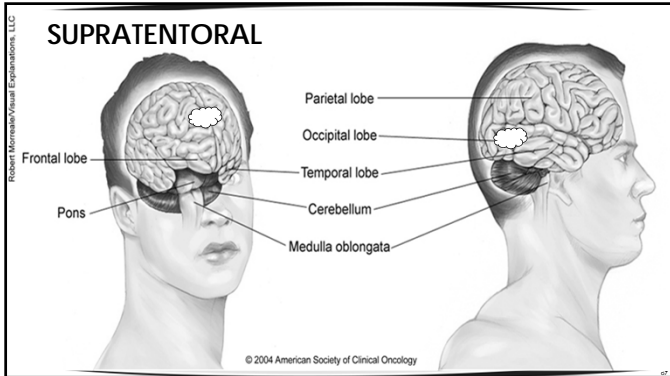
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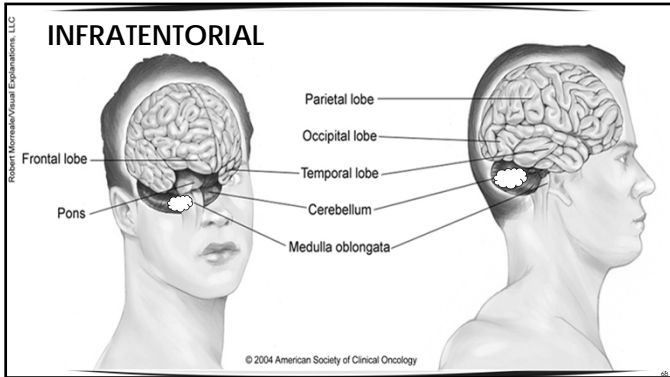
QUESTION FOR KENDRA

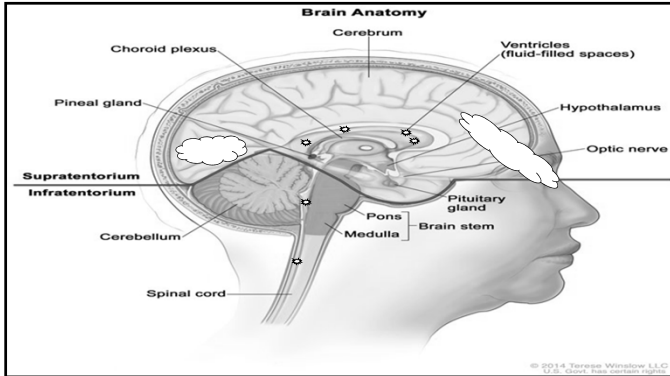
pop? quiz

What Summary Stage should we assign a benign tumor of the brain?


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COLLABORATIVE STAGE DATA COLLECTION SYSTEM (CSV02.05)




CNS SCHEMAS

Schema Name	Site Codes
Brain	C70.0, C71.0-C71.9
CNSOther	C70.1, C70.9, C72.0-C72.5, C72.8-C72.9
IntracranialGland	C75.1, C75.2, C75.3



OTHER CS DATA ITEMS FOR CNS SCHEMAS

- CS Tumor Size/Ext Eval = 9
- CS Lymph Nodes = 988
- CS Lymph Nodes Eval = 9
- Regional Nodes Positive = 99
- Regional Nodes Examined = 99
- CS Mets Eval = 9



CS EXTENSION: BRAIN

- Code 050
 - Benign or borderline
- Codes 100-510
 - Confined to brain or cerebral meninges
 - Supratentorial tumor
 - Infratentorial tumor
 - Crosses midline
 - Crosses tentorium cerebelli
- Codes 600-800
 - Extension beyond brain or cerebral meninges
 - 710: Circulating cells in CSF

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CS METS AT DX: BRAIN

- 00: No distant metastasis
- 20: Drop metastasis
- 30: Metastasis outside the CNS (extra-neural)
- 50: 20 + 30
- 99: Unknown

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SSF1: WHO GRADE CLASSIFICATION

- Histologic grading classification for CNS tumors by the WHO
- Important prognostic factor for response to treatment & outcomes for CNS tumors
- Not the same as ICD-O-3 grade/differentiation
- Coded in the SSF1

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SSF1: WHO GRADE CLASSIFICATION

- Code WHO grade as documented in health record
- If WHO grade is not documented see Table 56.3 in AJCC 7th Ed. (page 596) for specific histologies with assigned WHO grade
- *Examples:*
 - Anaplastic astrocytoma – grade III
 - Glioblastoma – grade IV
 - Meningioma – grade I

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SSF1: WHO GRADE CLASSIFICATION

- Grade I: Code 010
 - Slow-growing, nonmalignant
- Grade II: Code 020
 - Slow-growing; can be nonmalignant or malignant
- Grade III: Code 030
 - Malignant
- Grade IV: Code 040
 - Very aggressive malignant tumors

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SSF2: KI-67/MIB-1 LABELING INDEX (LI)

- Ki-67 is a nuclear protein
- Labeling index (LI)
 - Record percentage of carcinoma cells in the tissue sample with positive IHC staining for Ki-67 protein
 - Staining may be done with MIB-1 monoclonal antibody
 - May correlate with patient's clinical course
- This can typically be found in the path report as the testing will be completed on tumor tissue.

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SSF3: FUNCTIONAL NEUROLOGIC STATUS - KARNOFSKY PERFORMANCE SCALE (KPS)

- Record the KPS as documented by physician in patient's record
- Do NOT infer KPS from information in record
- Used to compare treatment effectiveness and to assess prognosis

0: Dead
10: Moribund
20: Very sick
30: Severely disabled
40: Disabled
50: Requires considerable assistance
60: Requires occasional assistance
70: Cares for self but unable to carry on normal activity
80: Normal activity with effort
90: Normal activity with minor signs disease
100: Normal with no evidence of disease

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SSF4: METHYLATION OF O6-METHYLGUANINE-METHYLTRANSFERASE (MGMT)

- MGMT is DNA repair enzyme
- Methylation shuts down DNA repair
- Increased methylation may allow specific drugs to be effective on CNS tumors

Hints and Tips

Typically listed on an addendum to a pathology report.

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SSF5 & SSF6: LOSS OF HETEROZYGOSITY (LOH)

- LOH
 - Chromosome damage that results in failure of tumor suppression
- SSF5
 - Record results of test for LOH in chromosome 1p
- SSF6
 - Record results of test for LOH in chromosome 19q

Hints and Tips

Typically listed on an addendum to a pathology report. Tests may be performed at same time and on single report

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SSF7: SURGICAL RESECTION

- Code extent of surgical resection as described in operative and pathology reports
- Correlated to outcome
- May be determinant in treatment

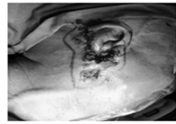


Fig. 32: Malignant tumour of the right parotid

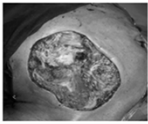


Fig. 33: Defect created after excision of the tumour. Notice the excision involved the external ear and the external auditory canal as well.

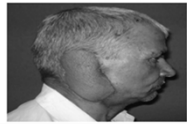


Fig. 34: A free microvascular flap used to close the defect.

Shornoteinsplasticsurgery.jpg
Microsoft PowerPoint clip art

SSF8: UNIFOCAL VS. MULTIFOCAL TUMOR

- Record whether tumor is solitary or multifocal at time of diagnosis
- Multifocal tumors have a worse prognosis
- Affect treatment decisions

QUESTIONS?

TREATMENT

- Gliomas
 - Anaplastic gliomas and glioblastoma multiforme
 - Low grade infiltrative astrocytomas
 - Oligodendroglioma
 - Ependymomas
- (PNET) Primitive Neuroectodermal tumors
- Meningiomas
- Primary Spinal Cord Tumors

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TREATMENT OF GLIOMAS

Grade	Example Histology & Behavior	Treatment #1	Treatment 2	Treatment #3
Low Grade I, II	Astrocytomas & Oligodendromas	Surgery Total gross resection Stereotactic biopsy Open biopsy Subtotal resection	Radiation	Watchful Waiting
High Grade III, IV	Anaplastic Oligodendromas & Glioblastoma	Surgery Total gross resection Subtotal resection Stereotactic or open biopsy	Radiation Therapy Standard adjuvant treatment after surgery	Chemotherapy Temozolomide PCV Carbustine wafers (intraoperative)

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TREATMENT OF LOW GRADE GLIOMAS

Low grade defined as WHO grade I or II
Example: Astrocytomas & Oligodendromas

- Surgery
 - Total gross resection
 - Stereotactic biopsy
 - Open biopsy
 - Subtotal resection
- Radiation
- Watchful Waiting

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TREATMENT OF HIGH GRADE GLIOMAS

High grade defined as WHO grade III or IV
Example: Anaplastic Oligodendromas & Glioblastoma

- Surgery
 - Total gross resection of the tumor
 - Subtotal resection
 - Stereotactic or open biopsy
- Radiation Therapy
 - Standard adjuvant treatment after surgery
- Chemotherapy
 - Temozolomide
 - PCV
 - Carmustine wafers (intraoperative)

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TREATMENT OF EPENDYMOMAS

Grade	Example Histology & Behavior	Treatment #1	Treatment 2	Treatment #3
I	Subependymoma (9383/1) Myxopapillary ependymoma (9394/1)	Observation if asymptomatic and tumor is less than 30mm	Gross total resection	Subtotal resection with a radiation if the tumor is more than 30mm
II	Ependymoma, nos (9391/3)	Observation if asymptomatic and tumor is less than 30mm	Gross total resection	Subtotal resection with adjuvant radiation
III	Anaplastic ependymoma (9392/3)	Gross total resection followed by radiation	If not a surgical candidate, radiation alone.	

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TREATMENT OF PRIMITIVE NEUROECTODERMAL TUMORS (PNET)

Most Common Type: Medulloblastoma (Infratentorial) or Supratentorial, WHO Grade IV

- Surgery
 - Gross total resection whenever possible
- Adjuvant radiation
- Adjuvant systemic treatment

REMEMBER THE TIP OF THE DAY!

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TREATMENT OF MENINGIOMAS			
Grade	Treatment #1	Treatment 2	Treatment #3
I	Observation Asymptomatic Tumor <30 mm	Surgery Symptomatic Surgical candidate Tumor >30mm	Radiation Tumor >30mm Non-surgical candidate
II	Observation Asymptomatic Tumor <30 mm	Surgery Symptomatic Surgical candidate Tumor >30mm	Radiation Tumor >30mm Non-surgical candidate
III	Surgery	Adjuvant radiation	

TREATMENT OF PRIMARY SPINAL CORD TUMORS				
Grade	Examples	Treatment #1	Treatment 2	Treatment #3
I	meningiomas peripheral nerve sheath tumors	Observation if asymptomatic	Surgery if symptomatic	Radiation if symptoms persist after treatment
I	astrocytomas ependymomas	Gross total resection		
Grade II and higher		Partial resection		

SURGERY CODES		
Code	Procedure	Specifics
20	Local excision of tumor, lesion or mass; excisional biopsy	Used when the surgeon describes the procedure "biopsy," or "excisional biopsy", or when there are no details about the procedure. Unknown whether total or partial tumor resected.
21	Subtotal resection of tumor, lesion or mass in brain	Near total, partial, subtotal, debulking, open biopsy (if residual tissue).
22	Resection of tumor of spinal cord nerve	
30	Radical, total, gross resection of tumor, lesion or mass in brain	The resection of the brain tissue surrounding the tumor is limited to ensure clean margins. THIS 30 code can be used with all cases regardless of diagnosis year.
40	Partial resection of lobe of brain, when the surgery cannot be coded as 20-30.	Less than lobectomy, but more than it would be necessary to ensure clean margins
55	Gross total resection	Lobectomy

QUESTION FOR JIM **pop? quiz**

While abstracting a case you discover documentation stating that the patient underwent NeuroBlate Laser Interstitial Thermal Therapy to treat a glioblastoma of the frontal lobe of the brain. What surgery code you document in the surgery field?

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RADIATION CODES

Code	Specific Energy	Radiation Type
20-30	Orthovoltage Cobalt Photons Electrons neutrons	External beam radiation
31	IMRT Intensity modulated radiation therapy	External beam radiation
32	3D conformal radiation	External beam radiation

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TREATMENT MODALITY

- Radiosurgery
 - Code 40: Particle or proton beam
 - Code 41: Stereotactic radiosurgery NOS
 - Code 42: Linac radiosurgery
 - Cyberknife
 - Code 43: Gamma knife

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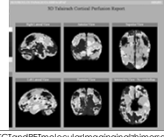
ABSTRACTING HITS



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DON'T FORGET

- To document follow-up imaging following a surgical resection.
- You may need to review several due to the fact that post-surgical changes may obscure residual tumor identification.



Use of PET/CT and PET molecular imaging in Alzheimer's disease.jpg
Microsoft PowerPoint clip art

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Quiz
Case Scenarios

QUESTIONS?

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COMING UP...

- Coding Pitfalls
 - 9/3/15
- New starts October 1st!
 - Collecting Cancer Data: Unusual Sites and Histologies

<http://www.naaccr.org/EducationandTraining/WebinarSeries.aspx>

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AND THE WINNERS ARE.....

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CE CERTIFICATE QUIZ/SURVEY

- Phrase
 - Glioma
- Link
 - <http://www.surveygizmo.com/s3/2260744/CNS>

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