CNS Overview Quiz

1. The patient's final diagnosis is hemangioma of the head. Is this a reportable diagnosis?
    a. Yes
    b. No

2. Which of the following anatomical structures is supratentorial?
    a. Anterior cranial fossa
    b. Hypothalamus
    c. Pons
    d. Posterior cranial fossa

3. The cranial nerves are part of the peripheral nervous system.
    a. True
    b. False

4. Patient has a cerebral meningioma extending across the right and left hemispheres. What is the code for laterality?
    a. 0 – not a paired site
    b. 1 – right
    c. 2 – left
    d. 3 - Only one side involved, right or left origin unspecified
    e. 4 - Bilateral involvement, lateral origin unknown
    f. 9 - Paired site but no information concerning laterality; midline tumor

5. The patient's final diagnosis is WHO grade III brain stem astrocytoma. The grade/differentiation code is:
    a. Grade I – well differentiated
    b. Grade II – moderately differentiated
    c. Grade III – poorly differentiated
    d. Grade IV – undifferentiated
    e. 9 – grade or differentiation not determined, not stated, or not applicable

Multiple Primary and Histology Quiz

Case Scenario 1:

A 22-year-old man with bilateral blindness, paraparesis and difficulty in urination was admitted on November 20, 2009. The patient has a history of recurrences of intracranial tumors since initial resection of a pineal teratoma when he was 12 years old and a hypothalamic germinoma when he was 20. An MRI was performed and revealed a large tumor along the entire wall of the third ventricle with extensive invasion into the brain parenchyma. The tumor was highly suspicious for malignant germ cell tumor. A stereotactic biopsy was performed which confirmed the diagnosis of malignant germ cell tumor.

1. Assign a topography and histology code to each of the three tumors mentioned in the case scenario.

	Tumor 1	Tumor 2	Tumor 3
Topography			
Histology			

2. Using the 2007 Multiple Primary Rules how many primaries are present?
    a. 1 primary
    b. 2 primaries
    c. 3 primaries
    d. 4 primaries

3. What rule(s) did you use to determine the number of primaries for this patient (explain)?

4. What histology did you assign to each primary (write in your answer next to the primary that applies)?
    a. Primary 1
    b. Primary 2
    c. Primary 3
    d. Primary 4

5. What rule did you use to determine the histology for each primary?
    a. Primary 1
    b. Primary 2
    c. Primary 3
    d. Primary 4

Case Scenario 2:

A 49-year-old woman presented with progressive headache, loss of vision and urinary incontinence on January 5, 2007. An MRI showed a large well-circumscribed tumor in the left parietal lobe. The tumor was partially removed. The histologic findings indicated an oligodendroglioma with astrocytic differentiation. Residual tumor was treated by stereotactic radiosurgery.

The patient returned for a follow-up MRI on February 3, 2009 and was found to have a new tumor arising in the left posterior occipital lobe. A stereotactic biopsy was performed and the histologic findings indicated glioblastoma multiforme.

6. Assign a topography and histology code to each of the three tumors mentioned in the case scenario.

	Tumor 1	Tumor 2
Topography		
Histology		

7. Using the 2007 Multiple Primary Rules determine the number of primaries for this patient.
    a. 1 primary
    b. 2 primaries
    c. 3 primaries
    d. 4 primaries
8. What rule(s) did you use to determine the number of primaries for this patient (explain)?

9. What histology did you assign to each primary (write in your answer next to the primary that applies)?
    a. Primary 1
    b. Primary 2
    c. Primary 3
    d. Primary 4

10. What rule did you use to determine the histology for each primary?
    a. Primary 1
    b. Primary 2
    c. Primary 3
    d. Primary 4

Collaborative Staging Quiz

MRI, brain: Enhancing mass, measuring 7.2 x 7.2 x 5.2 cm, attached to the anterior cranial fossa compresses the anterior horn of the lateral ventricles bilaterally and stretches the optic chiasm and optic nerves inferiorly. The pituitary stalk and lamina terminalis are also stretched posteriorly. IMPRESSION: Olfactory groove meningioma.

Final pathologic diagnosis from bifrontal craniotomy for tumor resection: Brain, bifrontal tumor, meningioma. No brain invasion is seen

1. What is the code for CS Extension?
    a. 05
    b. 10
    c. 30
    d. 60

2. Final pathologic diagnosis: Cerebral malignant meningioma with extension into adjacent brain tissue. What is the code for CS Extension?
    a. 05
    b. 10
    c. 60
    d. 80

3. Final pathologic diagnosis: Astrocytoma of the right parietal lobe with significant pressure on the right lateral ventricle. What is the code for CS Extension?
    a. 05
    b. 10
    c. 11
    d. 30

4. Final pathologic diagnosis: Malignant teratoma originating in the pineal gland and encroaching upon the cerebellum. What is the code for CS Extension?
    a. 05
    b. 10
    c. 60
    d. 80

5. Final discharge diagnosis: Schwannoma of the acoustic nerve with facial paralysis due to tumor affects on the cranial nerve. What is the code for CS Extension?
    a. 05
    b. 10
    c. 30
    d. 50

6. The patient's final pathologic diagnosis is anaplastic astrocytoma, WHO grade III, arising in the midbrain. What is the code for CS SSF1?
    a. 010 – grade I
    b. 020 – grade II
    c. 030 – grade III
    d. 040 – grade IV
    e. 999 – unknown

7. The patient's final pathologic diagnosis is right frontal cerebral meningioma with extension into the skull. The code for CS extension is:
    a. 05
    b. 10
    c. 40
    d. 60

8. The pathology report documents a 3.3 cm right frontal lobe mass, mixed glioma, astrocytoma, and oligodendroglioma, WHO grade III that infiltrates the leptomeninges and dura. What is the code for CS Extension?
    a. 05
    b. 10
    c. 15
    d. 60

9. The patient's final diagnosis is 6 cm cerebral anaplastic astrocytoma involving the right occipital and right temporal lobes. The code for CS Extension is:
    a. 05
    b. 10
    c. 40
    d. 80

10. The patient's final diagnosis is ependymoblastoma of the posterior cranial fossa extending into the temporal lobe. The code for CS Extension is:
    a. 05
    b. 12
    c. 20
    d. 51

Treatment Quiz

Case Scenario 1
PREOPERATIVE DIAGNOSIS: Brain tumor left temporal lobe.

POSTOPERATIVE DIAGNOSIS: Brain tumor left temporal lobe - glioblastoma multiforme.

OPERATIVE PROCEDURE:
1. Left temporal craniotomy.
2. Removal of brain tumor.

OPERATING MICROSCOPE: Stealth.

PROCEDURE: The patient was placed in the supine position, shoulder roll, and the head was turned to the right side. The entire left scalp was prepped and draped in the usual fashion after having been placed in 2-point skeletal fixation. Next, we made an inverted-U fashion base over the asterion over temporoparietal area of the skull. A free flap was elevated after the scalp that was reflected using the burr hole and craniotomy. The bone flap was placed aside and soaked in the bacitracin solution.

The dura was then opened in an inverted-U fashion. Using the Stealth, we could see that this large cystic mass was just below the cortex in the white matter just anterior to the trigone of the ventricle. We headed through the vein of Labbe, and we made great care to preserve this.

We saw where the tumor almost made to the surface. Here we made a small corticectomy using the Stealth for guidance. We biopsied this very abnormal tissue and submitted it to pathology. They gave us a frozen section diagnosis of glioblastoma multiforme. With the operating microscope and Greenwood bipolar forceps, we then systematically debulked this tumor. It was very vascular and we continued to remove this tumor until all visible tumor was removed. We appeared to get two gliotic planes circumferentially. We could see it through the ventricle.

After removing all visible tumor grossly, 4 carmustine wafers were placed in the tumor cavity. We then irrigated the cavity multiple times and obtained meticulous hemostasis and then closed the dura primarily with 4-0 Nurolon sutures with the piece of DuraGen placed over this in order to increase our chances for a good watertight seal. The bone flap was then replaced and sutured with the Lorenz titanium plate system. The muscle fascia galea was closed with interrupted 2-0 Vicryl sutures. Skin staples were used for skin closure. The blood loss of the operation was about 200 cc. There were no complications of the surgery per se. The needle count, sponge count, and the cottonoid count were correct.

Addendum:
The patient went on to successfully complete 60Gy of fractionated beam radiation at 2Gy per fraction using 6Mv. The patient also received adjuvant Temozolomide.

1. What is SURGICAL PROCEDURE OF PRIMARY SITE?
    a. 10 Tumor destruction, NOS
    b. 20 Local excision (biopsy) of lesion or mass
    c. 40 Partial resection
    d. 55 Gross total resection

2. What is REGIONAL TREATMENT MODALITY?
    a. 00 No radiation treatment
    b. 20 External beam, NOS
    c. 24 Photons (6–10 MV)
    d. 31 IMRT
    e. 42 Linac radiosurgery

3. What is CHEMOTHERAPY?
    a. 00 None
    b. 01 Chemotherapy administered as first course therapy, but the type and number of agents is not documented in patient record.
    c. 02 Single-agent chemotherapy administered as first course therapy.
    d. 03 Multiagent chemotherapy administered as first course therapy.

4. What is SYSTEMIC/SURGERY SEQUENCE?
    a. 0 No systemic therapy and/or surgical procedures
    b. 3 Systemic therapy after surgery
    c. 5 Intraoperative systemic therapy
    d. 6 Intraoperative systemic therapy with other therapy administered before or after surgery

Case Scenario 2:

A 56-year-old man presented with progressive hearing loss and vertigo. Neurological examination revealed right-sided hearing loss and decreased ability to tandem walk. MRI scan showed an enhancing lesion in the right auditory canal, consistent with an acoustic neuroma. The patient's medical history was notable for significant cardiac and pulmonary disease, with an angioplasty having been done within the last 12 months, and decreased respiratory reserve due to a past history of smoking. He was moderately overweight.

The patient was referred for stereotactic radiosurgery using a linear accelerator as definitive treatment of the acoustic neuroma.

A contrast-enhanced stereotactic MRI scan was done a week before radiosurgery. On the day of treatment, the Radionics head ring was applied, making sure that the skull base would be visualized. A stereotactic CT scan was then performed. All data were downloaded to the treatment planning computer, and the MRI and CT scans were fused. A radiosurgical plan was generated using the fused image.

Treatment was carried out using a single isocenter. 1800 cGy were prescribed to the 80% isodose line. After 6 months the patient is clinically stable and has suffered no further hearing loss. A follow-up MRI showed tumor shrinkage

1. What is SURGICAL PROCEDURE OF PRIMARY SITE?
    a. 00 None
    b. 10 Tumor destruction, NOS
    c. 20 Local excision (biopsy) of lesion or mass
    d. 40 Partial resection
2. What is REGIONAL TREATMENT MODALITY?
    a. 00 No radiation treatment
    b. 20 External beam, NOS
    c. 32 Conformal or 3D therapy
    d. 40 Stereotactic radiosurgery,NOS
    e. 42 Linac radiosurgery
3. What is CHEMOTHERAPY?
    a. 00 None
    b. 01 Chemotherapy administered as first course therapy, but the type and number of agents is not documented in patient record.
    c. 02 Single-agent chemotherapy administered as first course therapy.
    d. 03 Multiagent chemotherapy administered as first course therapy.
4. What is SYSTEMIC/SURGERY SEQUENCE?
    a. 0 No systemic therapy and/or surgical procedures
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