بسم الله الرحمن الرحيم

Past Papers

FINAL | Lectures (7-9)

﴿إِنِّي تَوَكَّلْتُ عَلَى اللَّهِ رَبِّي وَرَبِّكُمْ ۚ مَّا مِن دَابَّةٍ إِلَّا هُوَ آخِذٌ بِنَاصِيَتِهَا ۚ إِنَّ رَبِّي عَلَىٰ صِرَاطٍ مُّسْتَقِيمٍ﴾

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PATHOLOGY

قبل ما تبلشوا احكوا بسم الله، واحمدوا ربنا على نعمة الصحة والعافية

{ الحمد لله الذي عافانا مما ابتلي به غيرنا وفضّلنا على كثيرٍ ممن خلق تفضيلا }

Lec 7: CNS Tumors pt.1

Q1: Which of the following is correct regarding astrocytoma:

A) IDH (isocitrate dehydrogenase) mutation is a late event in the pathogenesis of gliomas

B) Pseudo- rosettes are seen in low grade astrocytomas

C) The presence of necrosis within a glioma indicates a high grade and a bad prognosis

D) Contrast enhancing lesions are usually low grade lesions

E) Gliomas are negative with FAP (glial fibrillary acidic protein)

Ans: C

Q2: All present in grade III astrocytoma except:

ANSWER: necrosis & microvascular proliferation

Lec 8: CNS Tumors pt.2

Q1: Which of the following mutations is associated with oligodendrogliomas:

A) P53 tumor suppressor gene inactivation

B) IDH-I gene mutation

C) RB gene mutation

D) P13k gene mutation

E) Ip and 19q codeletions

Ans: E

Q2: Regarding CNS tumors, which of the following is true?

ANSWER: Oligodendroglioma grade 3 is a better prognosis than astrocytoma grade 3

Q3: A 47-year-old gentleman has been experiencing headaches for the past 6 months. He had seizures twice. Brain MRI shows a solitary, circumscribed 3.5-cm mass in the right parietal centrum semiovale. The mass has small cysts, calcification and hemorrhage. Neurosurgery is performed, and the mass is removed. Microscopically, the mass consists of sheets of cells with round nuclei, finely granular chromatin & moderate amount of clear cytoplasm. The tumor cells show IDH-1 and GFAP expression. The patient receives adjuvant radiation and chemotherapy, and there is no recurrence. Which of the following molecular markers is most likely to be found in the cells of this mass?

A) BRAF mutation

B) Ip and 19q co-deletions

C) ATRX mutation

D) c-MYC amplification

E) Wnt activation

Ans: B

Q4: An 11-year-old girl has had increasing headaches upon awakening for the past month. On examination, papilledema is present bilaterally. An MRI of her brain reveals a 3-cm solid circumscribed mass within the fourth ventricle. There is third and lateral cerebral ventricular dilation. The mass is excised and microscopically shows perivascular pseudorosettes with round, regular tumor cells arranged around vessels. Which of the following neoplasms is she most likely to have?

A) Astrocytoma

B) Ependymoma

C) Glioblastoma

D) Medulloblastoma

E) Schwannoma

Ans: B

Q5: All of the following tumor locations are correct EXCEPT:

A) Myxopapillary ependymoma - Filum terminale

B) Medulloblastoma - Cerebellum

C) Dysembryoplastic neuroepithelial tumor - Superficial temporal lobe

D) Central Neurocytoma - Foramen of Monro

E) Ependymoma - Spinal cord in children

Ans: E

Q6: A 6-year-old boy suffered from ataxia and frequent falls. MRI scan showed a well circumscribed lesion in the cerebellum which was partly cystic. Histologic examination showed a tumor containing microcysts and Rosenthal fibers. what is your diagnosis؟ (مكرر)

A) Low grade oligodendroglioma

B) Cerebellar ependymoma

C) Glioblastoma

D) Pilocytic astrocytoma

E) Medulloblastoma

Ans: D

Q7: A long case but briefly: an 8-years old child / positive GFAP hair-like processes/ well circumscribed cystic tumor/ located in the cerebellum what is the most probable diagnosis?

A) pilocytic astrocytoma

B) oligodendroglioma

C) ependymoma

D) medulloblastoma

Ans: A

Q8: All of the following are features of pilocytic astrocytomas EXCEPT:

A) Relatively benign

B) Can affect the optic pathways and tracts

C) Is often associated with cyst formation

D) Occur in children and young adults

E) Most common location is the spinal cord.

Ans: E

Q9: Which one is False?

A) EGFR amplification: glioblastoma

B) Oligodendroglioma: ATRX positive, IDH mutant, 1p-19q co-deletion

C) Pilocytic Astrocytoma WHO grade malignant

D) None of the above

The question was which of the following is correct (The answer was A, but technically B is also correct since they retain ATRX expression — it will be positive.)

Ans: C

Lec 9: CNS Tumors pt.3

Q1: True about primary CNS lymphomas:

ANSWER: rarely spread outside CNS

Q2: 30 year-old lady presented with headache for the past 3 months. Physical examination is unremarkable. The representative gross appearance of the lesion seen on CT scan of the head is shown in the figure. The mass is surgically removed, and microscopic examination shows epithelioid cells with pale, oblong nuclei and pink cytoplasm with occasional psammoma bodies. Cytogenetic analysis shows 22q-. What is the most likely diagnosis?

A) Meningioma

B) Pilocytic astrocytoma

C) Ependymoma

D) Metastasis

E) lymphoma

Ans: A

Q3: A 20-year-old woman with learning difficulties had flank pain for 1 week. Physical examination showed right costovertebral angle tenderness. Patches of leathery-appearing (shagreen patches) and hypopigmented (ash-leaf patches) skin were scattered over her body. There was a subungual nodule on her right index finger. Abdominal CT scan showed bilateral renal cysts and tumor masses. MRI of the brain showed subependymal nodules and 1- to 4-cm cortical foci with loss of the gray-white distinction. CT scan of the chest showed a 3-cm mass involving the interventricular septum. Two years later, she now has sudden, severe headache. MRI now shows a nodule obstructing the cerebral aqueduct. Neurosurgery is performed, and a subependymal giant cell astrocytoma is removed. What is the most likely diagnosis?

A) Down syndrome

B) Krabbe disease

C) Neurofibromatosis type 1

D) Tuberous sclerosis

E) Von Hippel-Lindau disease

Ans: D

Q4: All of the following are true regarding grade II meningiomas EXCEPT:

A) Clear variant

B) Brain invasion

C) Choroid variant

D) Small cells, prominent nuclei, and necrosis

E) More than 19 mitotic figures/10 HPF.

Ans: E

Q5: Choose the INCORRECT combination:

A) Oligodendroglioma - Ip 19q codeletion

B) Pilocytic astrocytoma - cerebellar location

C) Ependymoma - pseudorosettes

D) Medulloblastoma - low cellularity

E) Glioblastoma - palisaded necrosis.

Ans: D

Q6: year-old gentleman has a single episode of grand mal seizure. physical examination is unremarkable except for 1.5-cm, darkly pigmented skin lesion on the chest. Brain MRI shows four solid, 1- to 3-cm lesions located at the graywhite junction in the right and left frontal, and temporal lobes. What is the most likely diagnosis?

A) Primary CNS lymphoma

B) Glioblastoma, IDH-wild type

C) Pilocytic astrocytoma

D) Meningioma

E) Metastatic melanoma

Ans: E

Q7：Correct match for Meningiomas:

A) 10 mitosis/10 HPF: grade 2

B) TERT promotor mutation: grade 1

C) well-defined dura-based masses: grade 3

D) None of the above

Ans: A

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