

Comprehensive Neurosurgical Oncology Elective

1. Introduction:

Neurosurgical Oncology encompasses the care of patients with the diagnosis of malignant and benign tumors affecting the CNS, inclusive of brain, skull base, and spine. Optimal treatment of these patients arises from a multi-disciplinary approach that involves the surgeon, occasionally teams of surgeons, the medical neuro-oncologist, and the radiation neuro-oncologist. Various treatment options are now available for patients that may vary based upon the experience and expertise of the surgical and medical teams. An elective rotation in comprehensive neuro-oncology is needed to expose the trainee to this multi-disciplinary approach and formulate a standardized approach to patients with malignant and benign tumors of the CNS.

2. Goals

- To introduce the trainee to the Multi-Disciplinary Field of Neuro-Oncology and Skull Base Surgery
- To help the trainee develop a systematic approach to the evaluation of patients with cancer and neurological symptoms.
- To help the trainee develop a systematic approach to the patient with primary (benign and malignant) and metastatic spine tumors.
- To help the trainee develop a systematic approach to the patient with primary (benign and malignant) and metastatic brain tumors.
- To help the trainee develop a systematic approach to the patient with primary (benign and malignant) skull base tumors.
- To help the trainee develop an understanding of operative indications and surgical approaches to patients with brain, spine and skull base tumors.
- Prepare the trainee for neuro-oncology questions on the written American Board of Neurological Surgeons Exam

3. Tasks

- i. See and Evaluate patients in the CTSC Neuro-oncology clinic with Dr. Brenner.
 - Understand the current standard of care for chemotherapy for newly diagnosed primary, metastatic brain, spine and skull base tumors.
 - Become familiar with the available chemotherapy options for recurrent or progressive cancer.
 - Become familiar with available chemotherapy trials.
 - Become familiar with common side effects with the use of common chemotherapeutic agents.

- ii. See and evaluate patients at the CTRC Radiation Oncology Clinic with Dr. Crownover. Participate in the evaluation and administration of radiation therapy to patients with brain and spine tumors.
 - Understand the current standard of care for radiation therapy for newly diagnosed primary, metastatic, brain, spine, and skull base tumors.
 - Understand the current standard of care for radiation therapy for recurrent/progressive cancer.
 - Become familiar with the available radiation treatments available:
 - Stereotactic radiosurgery (SRS) including dosimetry
 - Intensity Modulated Radiation Therapy (IMRT)
 - Whole Brain Radiation (WBR)
 - Brachytherapy
 - Become familiar with common side effects with the use of the available radiation treatment options.
 - Learn how to place stereotactic head frame for SRS.
- iii. Attend the Monday Multi-Disciplinary Tumor Board Conferences
 - Trainees will be expected to present patients at the tumor board and interact in discussions.
 - The trainee will gain an understanding for medical and surgical decision making regarding patients with complex oncological diagnosis.
- iv. Fulfill the role of resident trainee during oncological surgical cases.
 - Understand the indications for surgery for newly diagnosed and recurrent primary and metastatic, brain, spine and skull base tumors.
 - Understand common surgical approaches for newly diagnosed and recurrent primary and metastatic, brain, spine and skull base tumors.
 - The trainee will be expected to provide postoperative care in cases where he/she was the resident, and report to the appropriate attending, and report to other services (e.g., medical oncology) where appropriate.
 - The trainee will be expected to participate in the follow-up care of those patients in the outpatient clinic setting.
- v. Evaluate new inpatient consultations with oncological diagnosis
 - When able, see new inpatient consultations
 - Evaluate and develop treatment plan taking into account stage, grade, age, performance scale other factors (and present to the attending of record).
- vi. Complete the required reading assignments during the rotation.
 - See Addendum I for reading assignment
 - Trainee will meet q2weeks to discuss and take test pertaining to the reading assignment. (I will compose and administer test with immediate review)
 - Other reading materials will be given to the trainee for review and study
- vii. Become familiar with online tools
 - E.g. <http://www.cancer.gov/cancertopics/pdq/cancerdatabase>

Addendum I : Required Reading

Required Reading: **Tumors of the Brain and Spine: Demonte F, Gilbert M, Mahajan A, McCutcheon IE. 2007 Springer Science.**

Week 1:

Chapter 1: Epidemiology of Brain tumors p1-22

Chapter 2: Neuropathology and Molecular Biology of Intracranial Tumors p23-26

Chapter 3: Radiology of Brain Tumors, Structure and Physiology p37-52

Week 2:

Chapter 4: Surgically Curable Brain Tumors of Adults (Meningiomas including skull base, schwannomas, etc) p 53-92

Test 1: Covering p1-92

Week 3:

Chapter 5: Low Grade Gliomas: Evidence Based Treatment Options p 93-120

Week 4:

Chapter 6: Surgical Strategies for High Grade Gliomas p 121-134

Test 2: Covering p93-134

Week 5:

Chapter 7: Radiation Oncology for Tumors of the Central Nervous System: Improving the Therapeutic Index. P 135-152

Week 6:

Chapter 8: Cytotoxic Chemotherapy for Diffuse Gliomas P 153-170

Chapter 9: Innovative Treatment Strategies for High Grade Gliomas p 171-190

Test 3: Covering p 135-190

Week 7

Chapter 10: Pituitary Tumors in Oncology p 191-224

Week 8

Chapter 11: Management of Lung Cancer, Breast Cancer, and Melanoma Metastatic to the Brain
p 225-245

Test 4: Covering p 191-224

Week 9

Chapter 12: Neoplastic Meningitis p 245-262

Week 10:

Chapter 13: Lymphoma Affecting the Central Nervous System p 263-273

Test 5: Covering p 245-272

Week 11

Chapter 14: Tumors of the Extradural Spine p 273-294

Chapter 15: Tumors of the Spinal Cord Intradural Space p 295-328

Week 12

Chapter 16: Symptom Management for Patients with Brain Tumors: Improving Quality of Life. P
329-352

Test 6: Covering p 273-352

Addendum II: Tentative Schedule

Monday	Tuesday	Wednesday	Thursday	Friday
<ul style="list-style-type: none"> • AM Rounds • Neuro-Oncology Tumor Board • Radiation Oncology Clinic with Dr. Crownover • Resident in Oncological Cases • Inpatient Consults 	<ul style="list-style-type: none"> • AM Rounds • Resident in Oncological Cases • Participate in administration of radiation treatments • Inpatient Consults 	<ul style="list-style-type: none"> • AM Rounds • Neuro-oncology Clinic with Dr. Brenner • Inpatient Consults 	<ul style="list-style-type: none"> • AM Round, Neuro-oncology clinic with Dr. Brenner and Drs. Floyd/Vecil, Resident in Oncological Cases, Inpatient Consults 	<ul style="list-style-type: none"> • AM rounds, Conferences, meet Dr. Floyd – discussion and q2week test with immediate feedback

Addendum III: Minimum Patient Logs

Trainee to keep patient logs

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| i. | 6 stereotactic head frame placements | (1 per 2 weeks avg) |
| ii. | 24 brain, spine, or skull base operative cases | (2 per 1 week avg) |
| iii. | 60 outpatient medical oncology patient evaluations | (5 per 1 week avg) |
| iv. | 60 outpatient radiation oncology patient evaluations | (5 per 1 week avg) |
| v. | 24 inpatient new patient consultations | (2 per 1 week avg) |