

## NEUROPATHOLOGY GROSSING GUIDELINES

**IF YOU HAVE ANY QUESTIONS ABOUT WHAT TO DO WITH A GIVEN SPECIMEN OR SUSPECT THAT IT NEEDS TO BE PROCESSED IN NEUROPATHOLOGY, CONTACT ONE OF THE FOLLOWING:**

- BEFORE 3 PM, CALL THE NP LABORATORY AT CHS18-144 (310-825-5792)
- NEUROPATHOLOGY FELLOW (310-825-0544 OR 310-825-1368)
- NEUROPATHOLOGIST ON CALL ON QGENDA (ONE OF THE FOLLOWING):

Shino Magaki, MD p28204, 310-794-40568  
Negar Khanlou, MD p24673, 310-794-5560  
Fausto Rodriguez, MD p38133, 310-206-4111  
Harry V. Vinters, MD p09799, 310-825-6191

### **A. OVERVIEW AND GENERAL TIPS**

Brain (including pituitary gland) or spinal cord, together with their overlying meninges, will in general undergo a neurosurgical procedure for one of several reasons, as follows:

1. To establish the presence and etiology of and/or resect a **space-occupying lesion**, most commonly a **primary or secondary neoplasm, vascular malformation, abscess, empyema, hematoma (blood clot), etc.** The surgical procedure in this case will be either (a) a stereotactic/CT/MRI-guided biopsy through a burr hole, (b) an open biopsy, or (c) a larger resection, including 'lobectomy', multilobar resection or even hemispherectomy, each of the three procedures yielding progressively larger fragments of material. In describing the specimen, pay particular attention to grossly visible departures from normal brain appearance, relationship of the lesion to normal anatomic landmarks (e.g. cranial nerve in the case of a suspected nerve sheath tumor, dura or brain in the case of a suspected meningioma, dura in the case of suspected pituitary adenoma, etc). Gliomas appear gelatinous in contrast to normal gray and white matter. Presence of necrosis is suggestive of high grade gliomas.
2. To establish the specific cause of an **inflammatory/infectious disease, vasculitis, or dementing disease** (including CJD, sarcoidosis, demyelinating diseases, etc). Handling of brain, eye or pituitary tissue from patients with suspected or confirmed CJD is done exclusively in the Neuropathology lab. Prions remain potentially transmissible even after the tissue is formalin fixed and paraffin embedded. The Neuropath lab has special protocols in place for effective inactivation of prions and decontamination of all material that has been in contact with potential CJD tissue. Biopsies from patients with suspected CJD cases are done very rarely and the OR has a special protocol to handle them, but if you encounter such a specimen, please communicate immediately with the neuropathology attending on call and neuropathology fellow. HIV-infected brain tissue is rendered non-infectious by routine formalin fixation, and handled similarly to tissues from other body parts.
3. As the definitive treatment for **epilepsy** – usually a temporal lobectomy or other cortical resection in adults, or an even more radical resection, possibly including hemispherectomy, in children and infants.

### **B. SPECIMEN HANDLING**

#### **1. Small brain biopsies**

- Small brain biopsies are **RUSH**
- Use "Brain biopsy" protocol on Beaker (1 H&E and 10 USI)
- Use biopsy wrap paper **NOT** mesh bags to avoid crosshatching artifact on the tissue
- Split specimens larger than 0.5 cm into 2 cassettes to save tissue for molecular studies (10 USI only needed on 1 block)

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### **2. Tumor resections**

- Margins are not relevant in gliomas and do not need to be inked
- Submit according to the guidelines on number of cassettes in section C below

### **3. Hematomas**

- Look carefully for brain fragments or any other tissues other than blood (may contain etiology of hemorrhage i.e. 'occult' vascular malformation, unsuspected primary or secondary neoplasm, vasculitis, microangiopathy or other vasculopathy, etc.)
- Submit according to the guidelines on number of cassettes in section C below

### **4. Epilepsy resections (grossed by NP)**

- These are usually picked up by BTTR
- Add formalin after BTTR has triaged for research:
  - If before 3 pm, send to NP LABORATORY
  - If after 3 pm, send to NP LABORATORY the following business day

### **5. Medical muscle and nerve biopsies with clinical diagnosis of neuromuscular disease (i.e. myopathy, neuropathy, NOT for tumors) (grossed by NP)**

#### **- KEEP FRESH (DO NOT ADD FORMALIN)**

- If before 3 pm, send to NP LABORATORY
- If after 3 pm a weeknight, store the specimen in fridge (4°C) in surgical pathology gross lab or outreach gross lab, notify the neuropathology attending on call and neuropathology fellow, and send to NP LABORATORY the following day
- If after 3 pm before the weekend/holiday, notify clinician/surgeon that the quality of tissue may be compromised as the specimen cannot be processed until the next business day, store the specimen in fridge (4°C) in surgical pathology gross lab or outreach gross lab, notify the neuropathology attending on call and neuropathology fellow, and send to NP LABORATORY the following business day

## **C. NEUROPATHOLOGY GROSSING TEMPLATES**

**Specimen Type:** BRAIN BIOPSY

**Gross Template:**

**MModal Command:** "INSERT BRAIN BIOPSY"

It consists of multiple [*tan-pink, soft/calcified/friable/degenerated\*\*\**] portions of tissue ranging from [*smallest to largest\*\*\**] cm in greatest dimension and measuring [*measure in three dimensions\*\*\**] cm in aggregate. The specimen is wrapped in filter paper and entirely submitted in [*describe cassette submission-do not submit in mesh bags\*\*\**].

\*\*\*Do not submit tissue in mesh bags as it leaves artifact. Only submit brain tissue in filter paper\*\*\*

[Biopsy	Submit all. If larger than 0.5cm, split into 2 cassettes
Any glioma	Submit all. Upper limit: 15 cassettes per specimen part
Metastases	All if up to 3 cm. If greater than 3 cm, submit 1 cassette per cm
Meningiomas	All if up to 3 cm. If greater than 3 cm, submit 1 cassette per cm
Any other tumors	All if up to 3 cm. If greater than 3 cm, submit 1 cassette per cm
Hematoma – Intraparenchymal	Submit all
Hematoma – Subdural / epidural	1 cassette. If concern for malignancy, submit 1 cassette per cm
***]	

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### **C. NUMBER OF CASSETTES**

Biopsy	Submit all. If specimen is larger than 0.5cm, split into 2 cassettes
Any glioma	Submit all. Upper limit of 15 cassettes per specimen part
Metastases	All up to 3 cm. If > 3 cm, submit 1 cassette per cm
Meningiomas	All up to 3 cm. If > 3 cm, submit 1 cassette per cm
Any other tumors	All up to 3 cm. If > 3 cm, submit 1 cassette per cm
Hematoma, Intraparenchymal	Submit all
Hematoma, Subdural or Epidural	1 cassette. If any concern for malignancy, submit 1 cassette per cm