



Clinical Diagnosis:

- (i) Parkinsons Disease
- (ii) Progressive Supranuclear Palsy
- (iii) Multiple System Atrophy
- (iv) Related Movement Disorders

Protocol: Fresh Brain Dissection

General

1. Tissue should be removed and processed as quickly as possible after death, preferably within 24 hours.
2. Alternate hemispheres should be fixed in 10% buffered formal saline or frozen. One hemisphere is sliced fresh at 1cm intervals and each slice rapidly frozen by contact with a brass plate at -70°C.
3. The brainstem should be removed by a high horizontal cut through the midbrain at a level anterior to the third nerve. The entire length of the brainstem is carefully divided in the midline; one side is fixed and the other side rapidly frozen.
4. The cerebellar hemisphere of the freshly sliced half-brain is sliced through the dentate nucleus and parallel 0.5cm slices are made. These slices are frozen. The other cerebellar hemisphere is fixed whole.
5. Cerebrospinal fluid should be withdrawn from the ventricles, spun down to remove red blood cells, and frozen.

BrainNet Europe II

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www.brainnet-europe.org

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Protocol:

Dissection of formalin-fixed brain (10% buffered formal saline)

1. Weigh the whole half-brain.
2. Remove the cerebellum and brainstem from the cerebrum by a cut through the midbrain.
3. Weigh the brainstem and cerebellum.
4. Slice the whole hemisphere, brainstem and cerebellum, in 5mm slices.

Blocks Sites

- | Blocks | Sites |
|--------|--|
| 1. | Frontal lobe. Superior frontal gyrus at the level of the genu of the corpus callosum. |
| 2. | Temporal lobe. Superior gyrus at the level of the lateral geniculate nucleus. |
| 3. | Hippocampus at same level. |
| 4. | Occipital lobe including the calcarine fissure. |
| 5. | Thalamus at the level of the mammillary bodies to include the red nucleus. |
| 6. | Basal ganglia at the level of the anterior commissure to include the nucleus basalis of Meynert. |
| 7. | Spinal Cord: Cervical level. |
| 8. | Spinal Cord: Thoracic level |
| 9. | Spinal Cord: Lumbar level. |
| 10. | Medulla oblongata (at mid olive to include the XII nerve nucleus. |
| 11. | Midbrain at level of the third nerve to include the red nucleus. |
| 12. | Pons to include the locus coeruleus. |
| 13. | Cerebellum including dentate nucleus. |

Protocol: Histology and immunohistochemistry

Section thickness	Stain/Immunohistochemistry
7µm	Haematoxylin and eosin Immunohistochemistry
14µm	Luxol fast blue/Nissl (Klüver-Barrera) Modified Bielschowsky

Blocks	Sites	Stains
1.	Frontal lobe. Superior frontal gyrus at the level of the genu of the corpus callosum.	H & E, Modified Bielschowsky Ubiquitin
2.	Temporal lobe. Superior temporal gyrus at the level of the lateral geniculate nucleus.	“
3.	Hippocampus at the same level as 2	“
4.	Occipital lobe including the calcarine fissure.	“
5.	Thalamus at the level of the mammillary bodies to include the red nucleus.	“
6.	Basal ganglia at the level of the anterior commissure to include the nucleus basalis of Meynert.	“
7.	Midbrain at level of the third nerve to include the red nucleus.	“
8.	Pons to include the locus coeruleus.	“
9.	Medulla oblongata (at mid olive to include the XII nerve nucleus.	“
10.	Cerebellum including dentate nucleus.	“
When available,		
11.	Spinal Cord: Cervical level.	“
12.	Spinal Cord: Thoracic level	“
13.	Spinal Cord: Lumbar level.	H & E, LFB/N, Modified Bielschowsky



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