

**Brain Death Determination Workshop**  
**Apnea Test, Case C**  
**Resident Handout**

**HPI:**

Mr. RS is a 68 year-old man with severe aortic stenosis, CAD c/b STEMI s/p PCI x 1 (2019), COPD, and a history of tobacco use has been admitted to the CVC-ICU for the last five days after undergoing a surgical aortic valve replacement with a bioprosthetic.

On ICU day 2, he has an acute onset of aphasia and right hemiplegia. Stroke code is called. Non-contrast HCT reveals early ischemic changes in the L MCA distribution. CTA head/neck reveals tandem ICA and proximal M1 occlusions. Initial NIHSS score is 28. He is brought to the angio suite and undergoes successful thrombectomies with TICI 2c recanalization. You talk with the family, and based on his age, discuss the risks/benefits of DHC. The family opts to defer neurosurgical intervention.

On ICU day 3, interval imaging shows evolution of his infarct along with progressive midline shift. His left pupil has become fixed and unreactive. By day 4, his pupils are bilaterally fixed and dilated. His corneal, cough, and gag reflexes are now absent. The first clinical examination is performed and is compatible with a diagnosis of brain death. You now proceed with apnea testing.

**Medical History:**

CAD c/b STEMI s/p PCI x 1 (2019)  
 COPD  
 20 pack-year history of tobacco use

**Surgical History:**

PCI as above

**Current Medications:**

Albuterol/ipratropium nebs q4h  
 Aspirin 81mg daily  
 Atorvastatin 40mg qhs  
 Famotidine 20mg bid  
 Norepinephrine gtt @ 0.02mcg/kg/min

**Allergies:**

NKDA

**Physical Exam:**

**Vitals:** BP 114/68 (MAP 83), HR 80, RR 14, SpO2 99%, T 37.4C

**General:** Intubated man.

**HEENT:** Normocephalic. Anicteric sclerae. Orotracheal intubation.

**CV:** RRR. Normal S1, S2. No r/m/g. No adventitious lung sounds. No paradoxical chest movements. Breathing at the set ventilator rate.

**Abd:** Soft, NT/ND.

**Neurologic Exam:**

**MSE:** Not on sedation. No response to verbal or noxious stimuli. Does not blink to threat.

**CN:** Eyes closed. No roving eye movements. Pupils 5mm, non-reactive bilaterally. Corneal reflex absent bilaterally. Oculocephalic reflex absent bilaterally. Cough and gag reflexes absent bilaterally.

**Motor/Sensory:** No motor response to noxious stimuli in the upper extremities. Triple flexion response to noxious stimulus in the right leg; absent in the left.

**Labs:**

WBC 10.8, Hb 10.9, Plt 126  
 Na 145, K 3.9, Cl 104, HCO3 25, BUN 20, Cr 1.01, gluc 146  
 ABG 7.31/49/125/0.8