# Working Diagnosis and Investigation Plan

## Positive Findings and Pathophysiology

### 1. Coma (GCS = 8/15)

Cause: Disruption of the reticular activating system (RAS) or diffuse hemispheric dysfunction  
Pathophysiology: A large hemorrhage increases intracranial pressure (ICP) → decreases cerebral perfusion → compresses RAS → loss of consciousness

### 2. Fixed and Dilated Left Pupil

Cause: Uncal herniation  
Pathophysiology: Hemorrhage → brain tissue shifts (herniates) → compresses left oculomotor nerve (CN III) → pupil dilates and becomes non-reactive due to loss of parasympathetic fibers

### 3. Right Facial Deviation

Cause: Left facial muscle weakness  
Pathophysiology: Right cortical or internal capsule lesion affects corticobulbar tract → weakness of contralateral (left) lower face → unopposed muscles on right pull face → deviation to right

### 4. Hypertonia in Left Upper & Lower Limbs

Cause: Upper motor neuron lesion (UMN)  
Pathophysiology: Damage to motor tracts (corticospinal) in right hemisphere → loss of inhibition to spinal motor neurons → increased muscle tone (spasticity) on left

### 5. 3+ Reflexes and Positive Babinski (on Left)

Cause: Pyramidal tract dysfunction  
Pathophysiology: UMN damage → exaggerated reflexes and Babinski reflex (toes fan upward) due to loss of inhibitory control from cortex

### 6. BP = 190/110 mmHg

Cause: Chronic hypertension and/or Cushing reflex (ICP compensation)  
Pathophysiology: Chronic high BP causes small vessel rupture → intracerebral hemorrhage OR Increased ICP → sympathetic activation → systemic vasoconstriction → hypertension

### 7. Irregular, Deep Respirations

Cause: Central neurogenic breathing (e.g., Cheyne-Stokes or agonal)  
Pathophysiology: Raised ICP or brainstem dysfunction → disrupts respiratory centers in medulla/pons → abnormal breathing patterns

## ✅ Interpretation of Investigations

### 🔹 1. CBC

|  |  |  |
| --- | --- | --- |
| Test | Result | Interpretation |
| WBC | 11,000 | Normal – no infection |
| HCT | 36% | Low-normal – possible mild hemodilution |
| PLT | 212,000 | Normal – no thrombocytopenia |

### 🔹 2. Lipid Profile

|  |  |  |
| --- | --- | --- |
| Test | Result | Interpretation |
| Cholesterol | 180 mg/dL | Normal |
| HDL | 89 mg/dL | High – protective effect |
| LDL | 45 mg/dL | Low – could be genetic or due to malnutrition |

### 🔹 3. Renal Function Test (RFT)

|  |  |  |
| --- | --- | --- |
| Test | Result | Interpretation |
| Creatinine | 1.2 mg/dL | High-normal |
| BUN | 20 mg/dL | High-normal |

### 🔹 4. Liver Function Test (LFT)

|  |  |  |
| --- | --- | --- |
| Test | Result | Interpretation |
| SGOT | 30 U/L | Normal |
| SGPT | 29 U/L | Normal |
| ALP | 170 U/L | Elevated – may suggest bone turnover, age-related, or subclinical cholestasis (not acute issue here) |

### 🔹 5. RBS

105 mg/dL → Normal

### 🔹 6. CT Brain (Non-Contrast)

• Hyperdense area in putamen & thalamus (3 x 5 cm)  
→ Classic for hypertensive intracerebral hemorrhage (ICH)  
→ Putamen is the most common site  
→ Mass effect likely causing herniation signs (fixed pupil)

### 🔹 7. ECG & ECHO

• ECG: Normal  
• Echo: Left Ventricular Hypertrophy (LVH)  
→ Sign of chronic hypertension  
→ EF 60% = Normal systolic function

### 🔹 8. Coagulation Panel

• PT, PTT, INR: Normal → Coagulopathy unlikely

### 🔹 9. Serum Electrolytes & CXR

• Both normal → No metabolic or respiratory cause