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Changing Neurology Worldwide
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RARE CASES IN CLINICAL PRACTCE

Stroke and neurovascular disease

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Disclosure of conflict of interest

nothing to disclose

Learning objective

- To identify Clinical situations with **Bilateral infarct**
- To recognize Anatomical considerations that can lead to **Bilateral infarct**
- To identify Etiological factors that can lead to **Bilateral infarct**

Bilateral infarcts

In Acute phase of stroke ?

Bilateral infarcts

- Anatomical
  - Variants
  - Specificities
- Etiological
  - Embolism
  - Infectious
  - Vasculitis
  - Compressive
  - Vasospasm
  - Hemodynamic

Bilateral infarcts

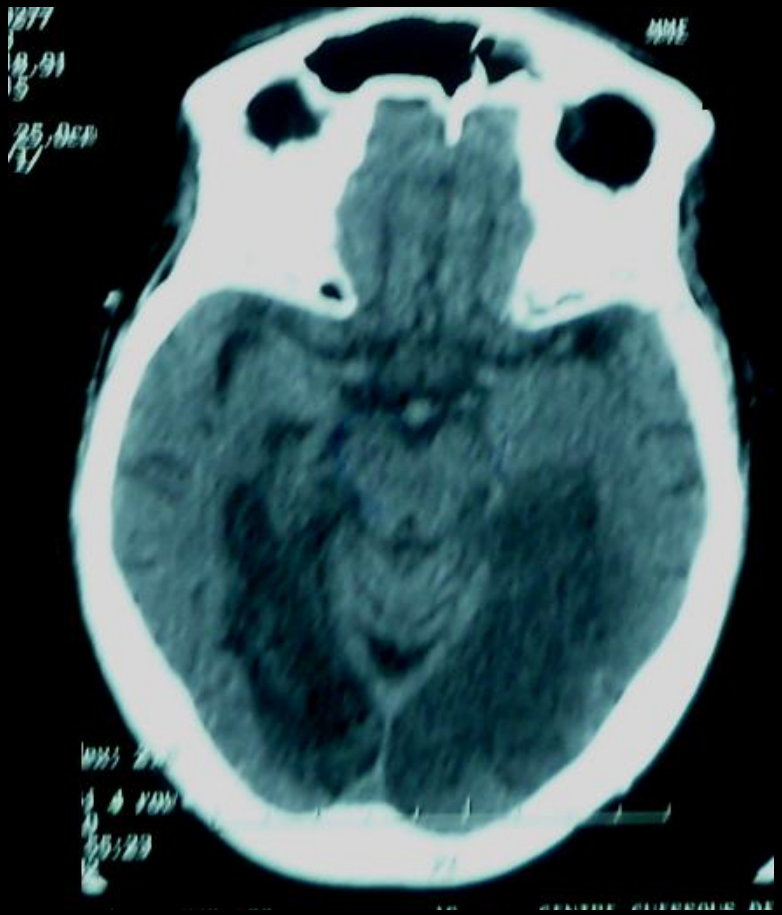
- bilateral MCA infarcts?
- bilateral PCA infarcts?
- bilateral ACA?
- Bithalamic?
- bilateral PICA infarct?
- ….

CASE N°1

52 years old men

Risk factors: Hypertension - Diabetes

Sudden bilateral blindness with vertigo.



Bilateral posterior cerebral artery infarcts

CASE N°2

76 years old women

Dizziness

Altered level of consciousness GCS: 9/15

Deviation of the head to the right

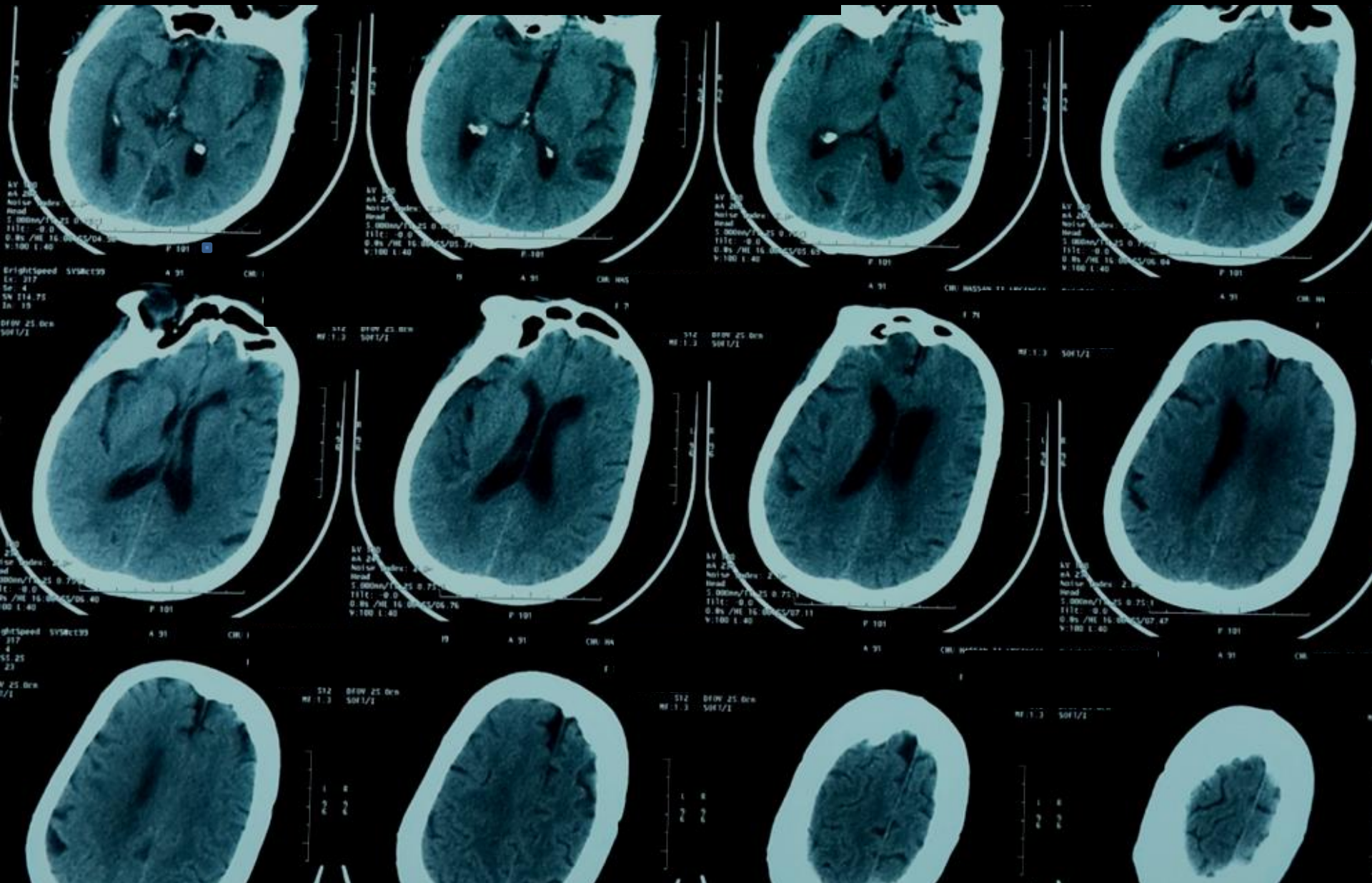
BP: 17/09

Absence of fever

Glycemia: 1,3 g/l

Irregular rhythm in cardiac auscultation

Cerebral CT scan
6 hours from onset



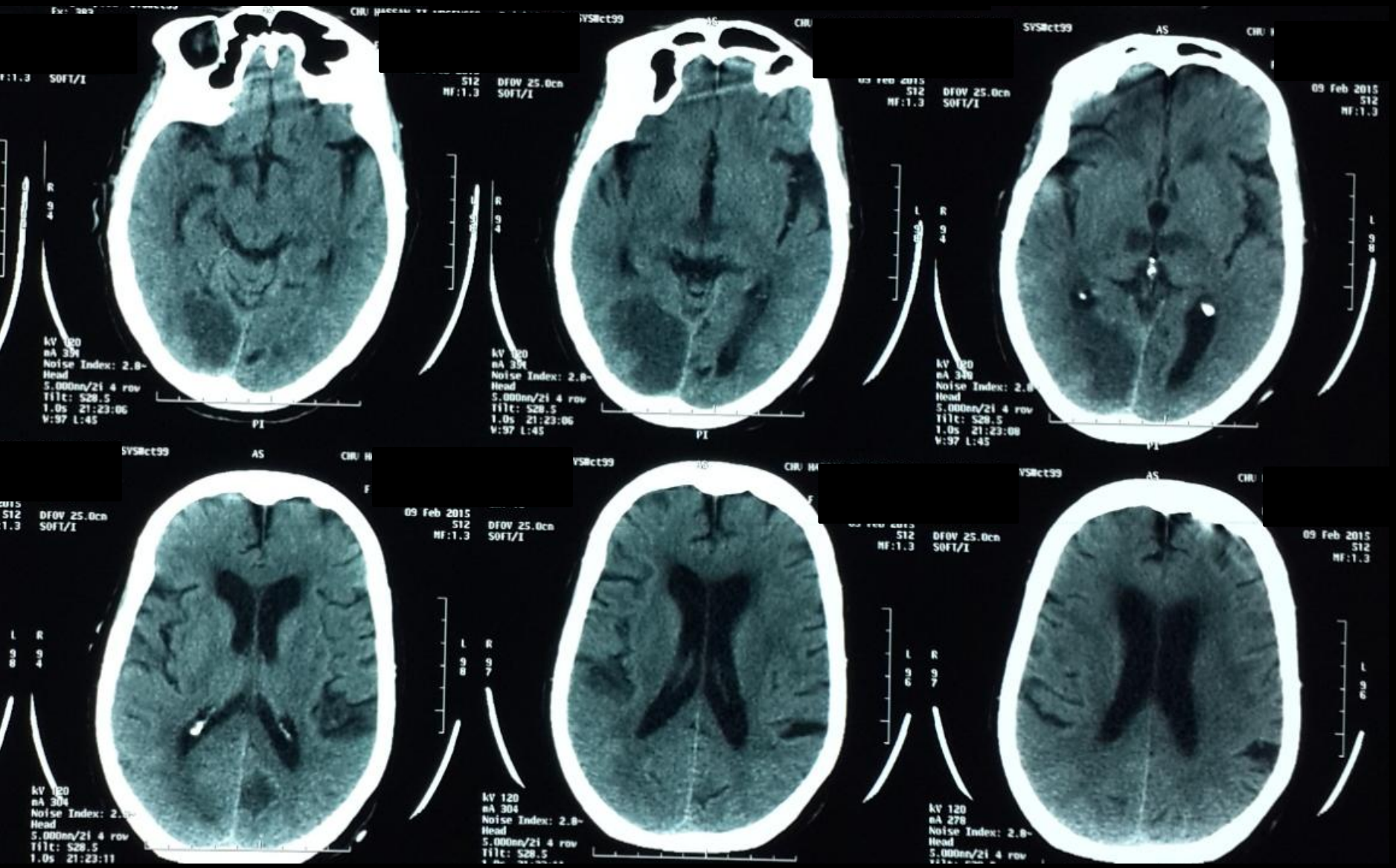
Treated as ***status epilepticus***

No improvement

EEG: not status epilepticus

Laboratory: normal

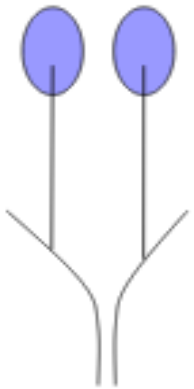
Cerebral CT scan
48H from onset



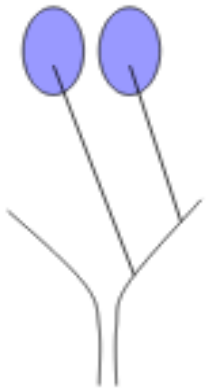
Bilateral paramedian thalamic infarcts
Right posterior cerebral artery infarct

Witch type of anatomical variants?
Where is the site of artery occlusion?

TYPE I



TYPE IIa



TYPE IIb

CASE N°3

- 28 years old men
- Medical history: 0
- Admitted to emergency: **sudden consciousness disorders**
- GCS: 12/15
- No fever, no meningeal syndrome
- Asymetrical **paraplegia** (more marked in the left)

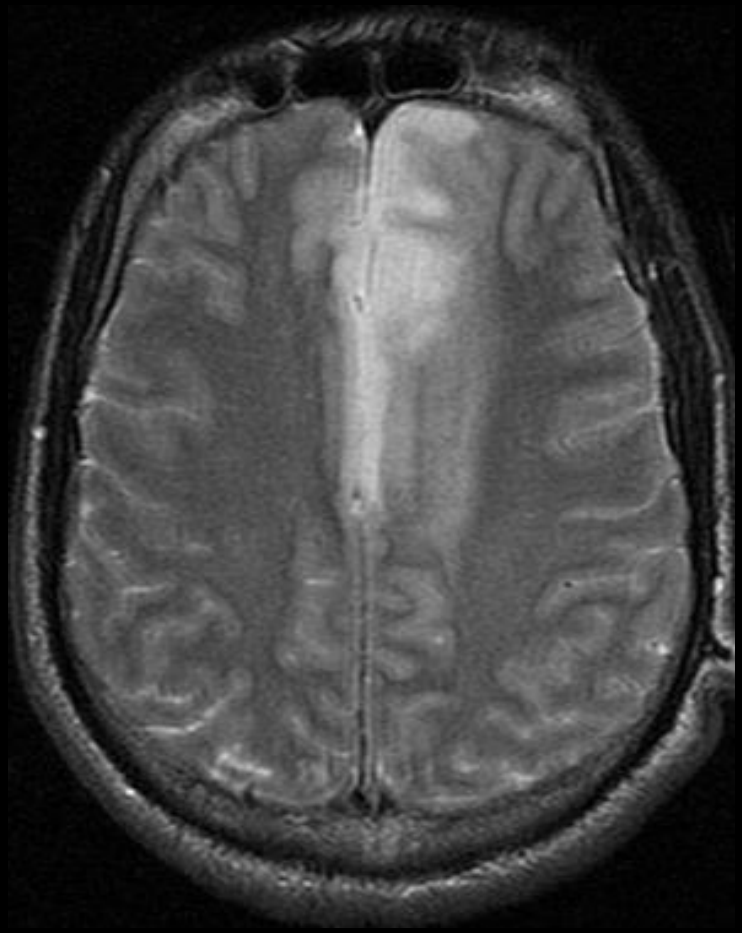
WHERE ARE POSSIBLE LESIONS?
WHAT ARE POSSIBLE DIAGNOSES?

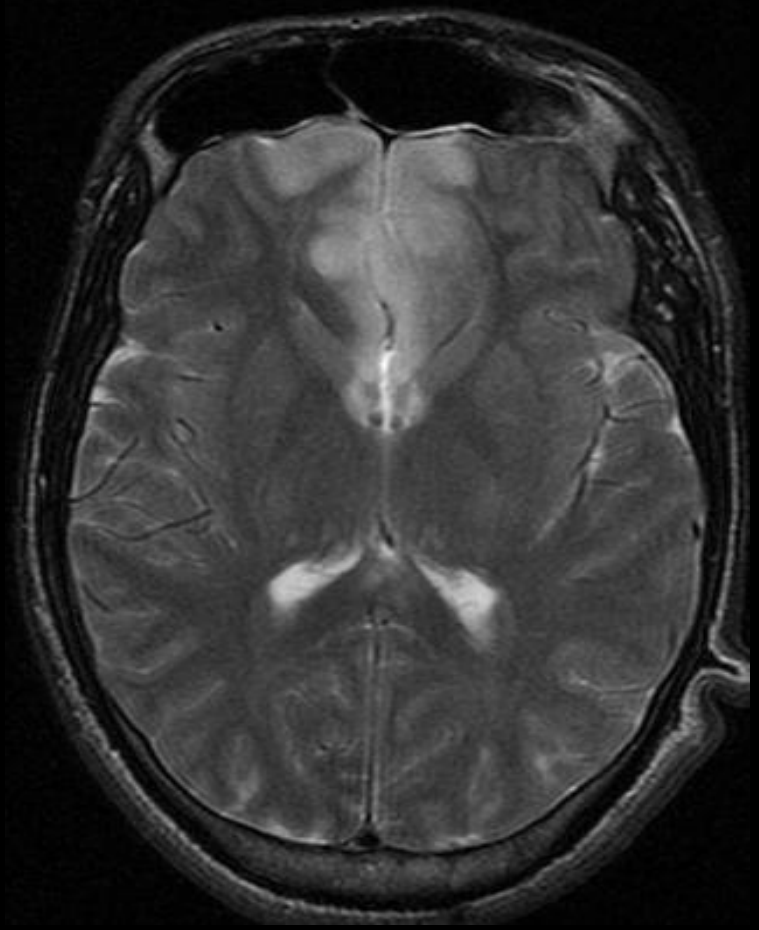
- Vascular:
  - ischemic stroke
    - bilateral infarct in brainstem
    - bilateral infarct (carotid territories)
    - Bilateral infarct after vasospam (subarachnoid hemorrhage)
  - bilateral hemorragic stroke
  - bilateral venous infarct

- Others:
  - Encephalitis
  - Cerebral Metastasis
  - Toxic
  - Metabolic

WHAT TO DO?

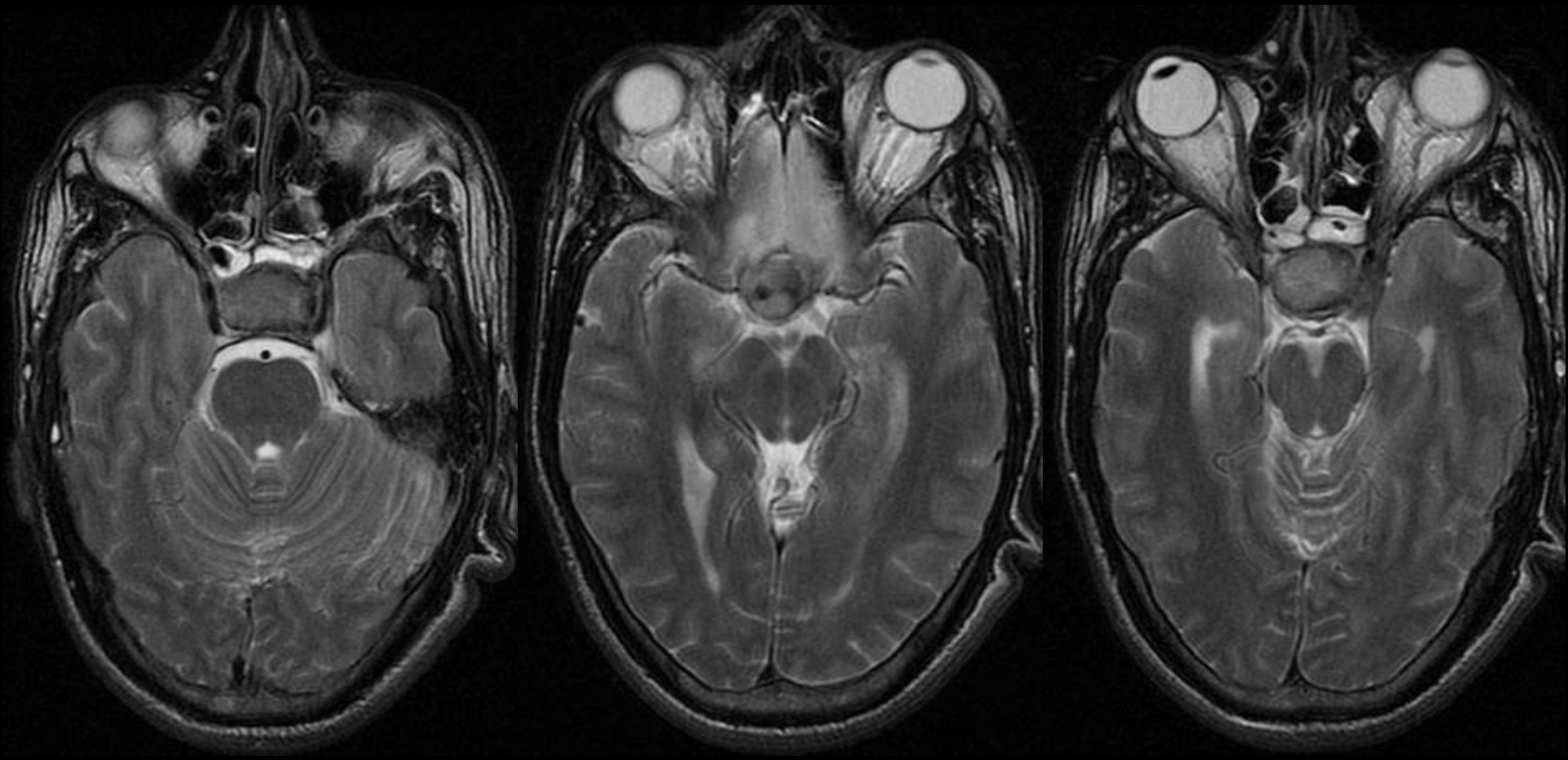
Axial Cerebral MRI T2 sequences

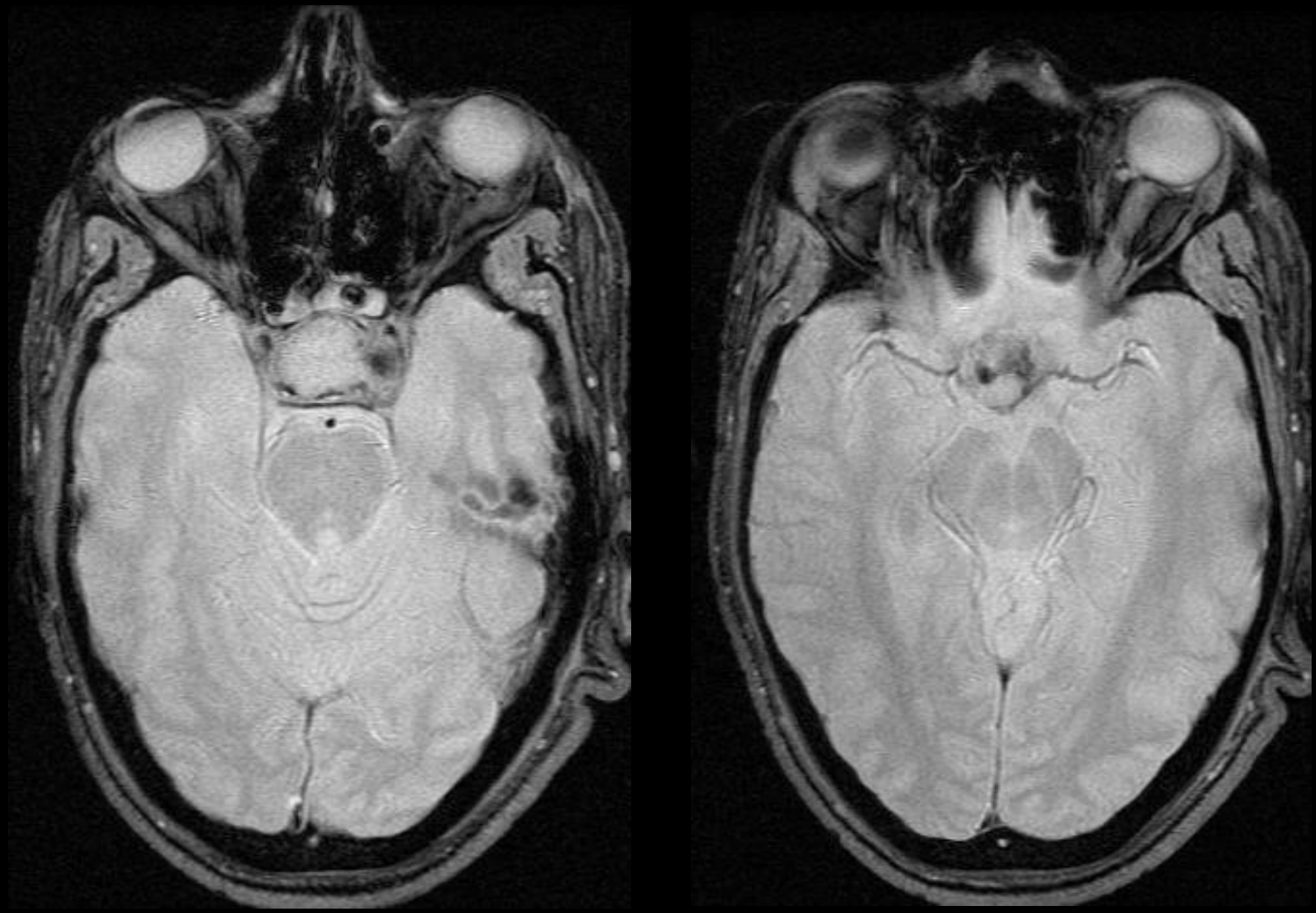


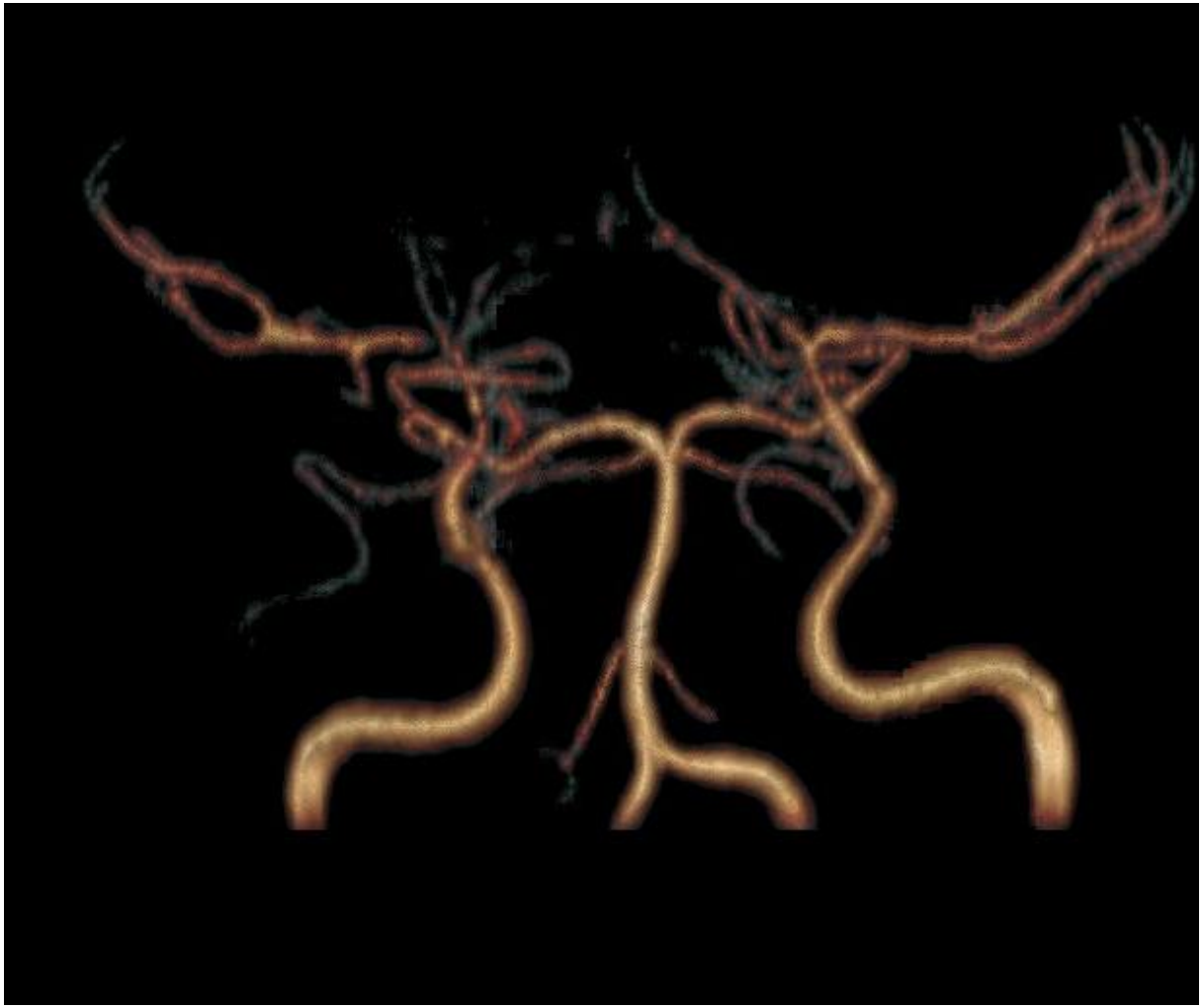


Bilateral infarct in anterior cerebral arteries territories

WHAT MAY BE THE CAUSES OF THIS BILATERAL INFARCTION?







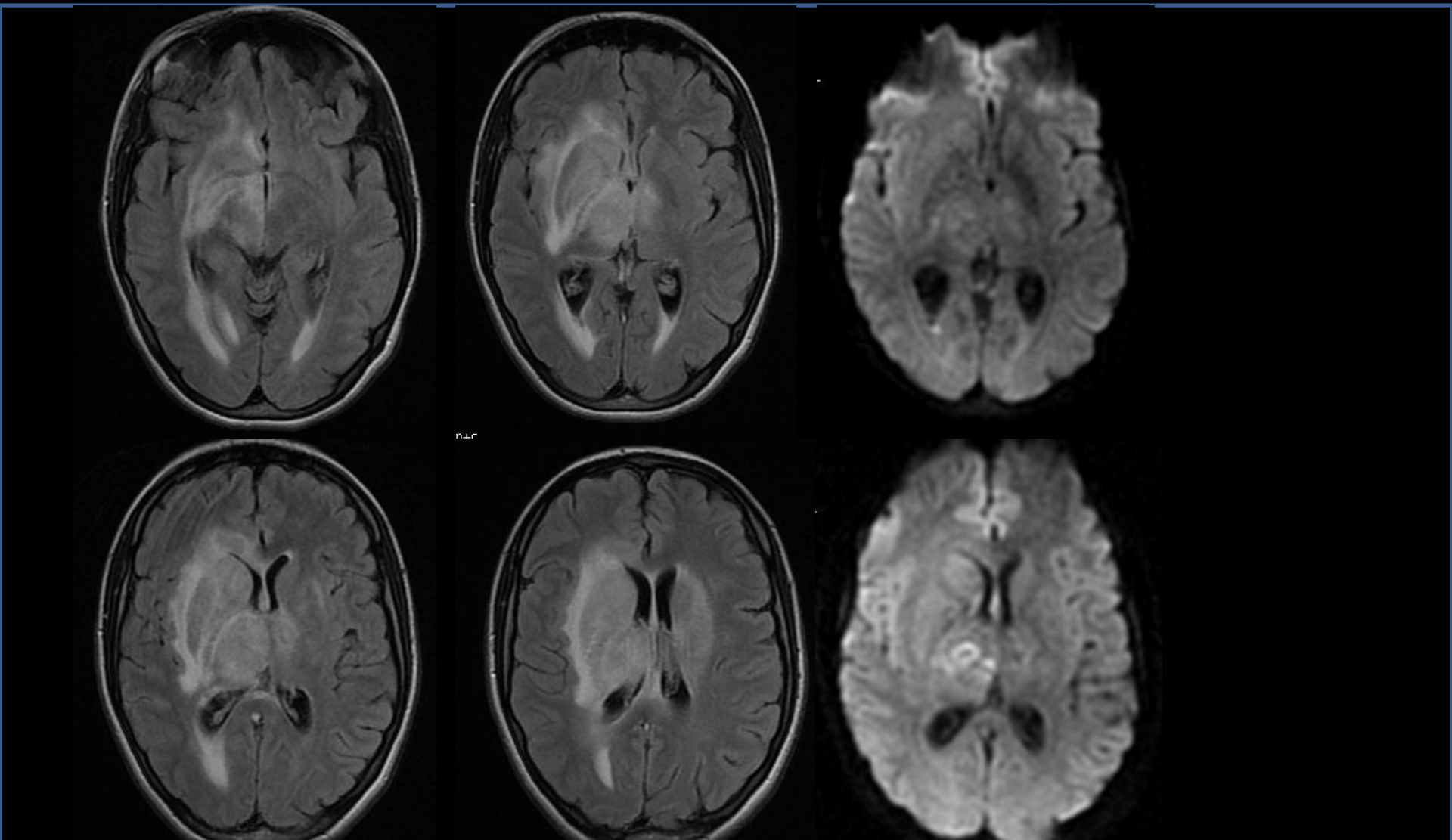
What is the diagnosis?

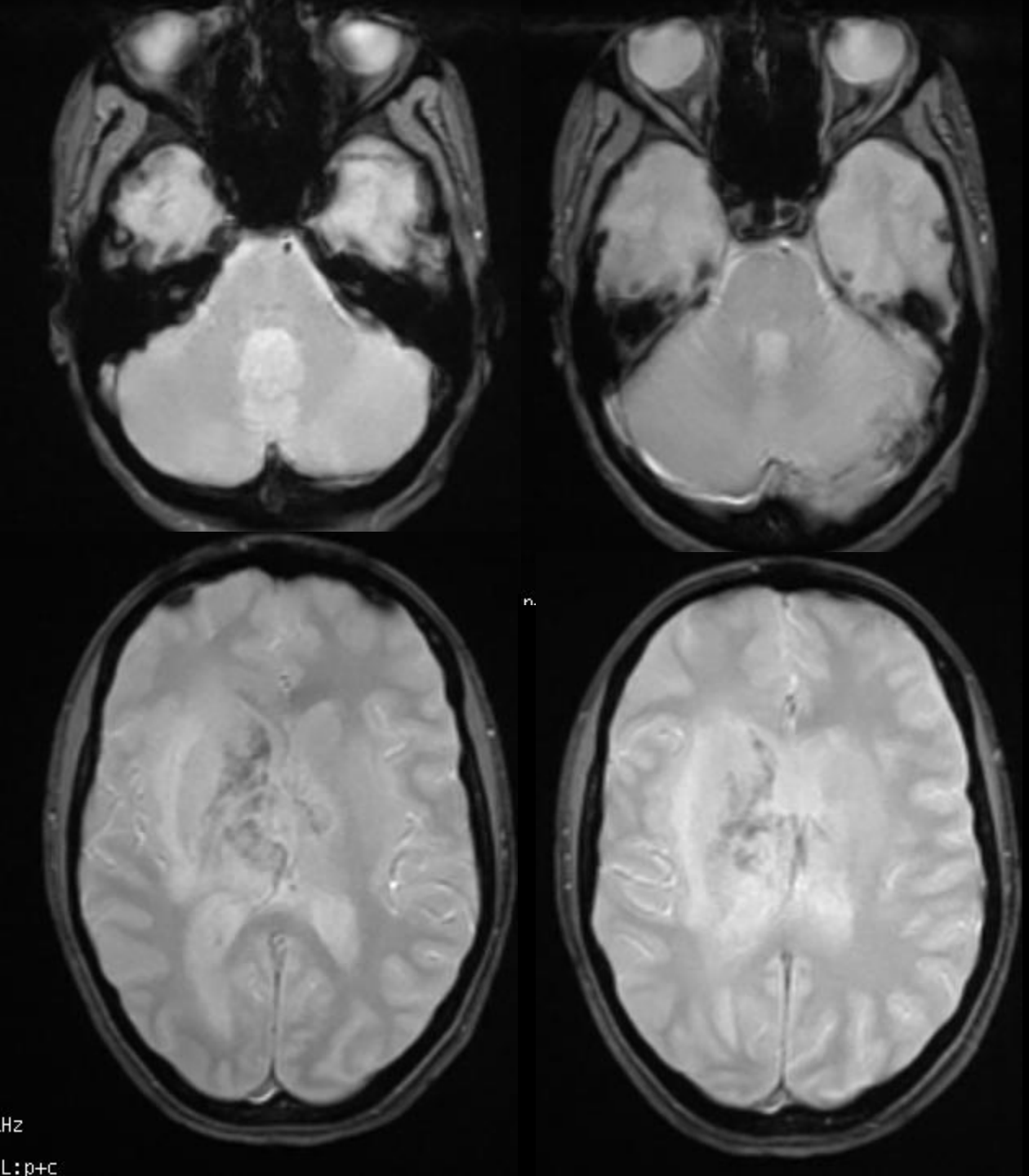
CASE N°4

- 23 years old women
- hedeaches and left hemiplegia

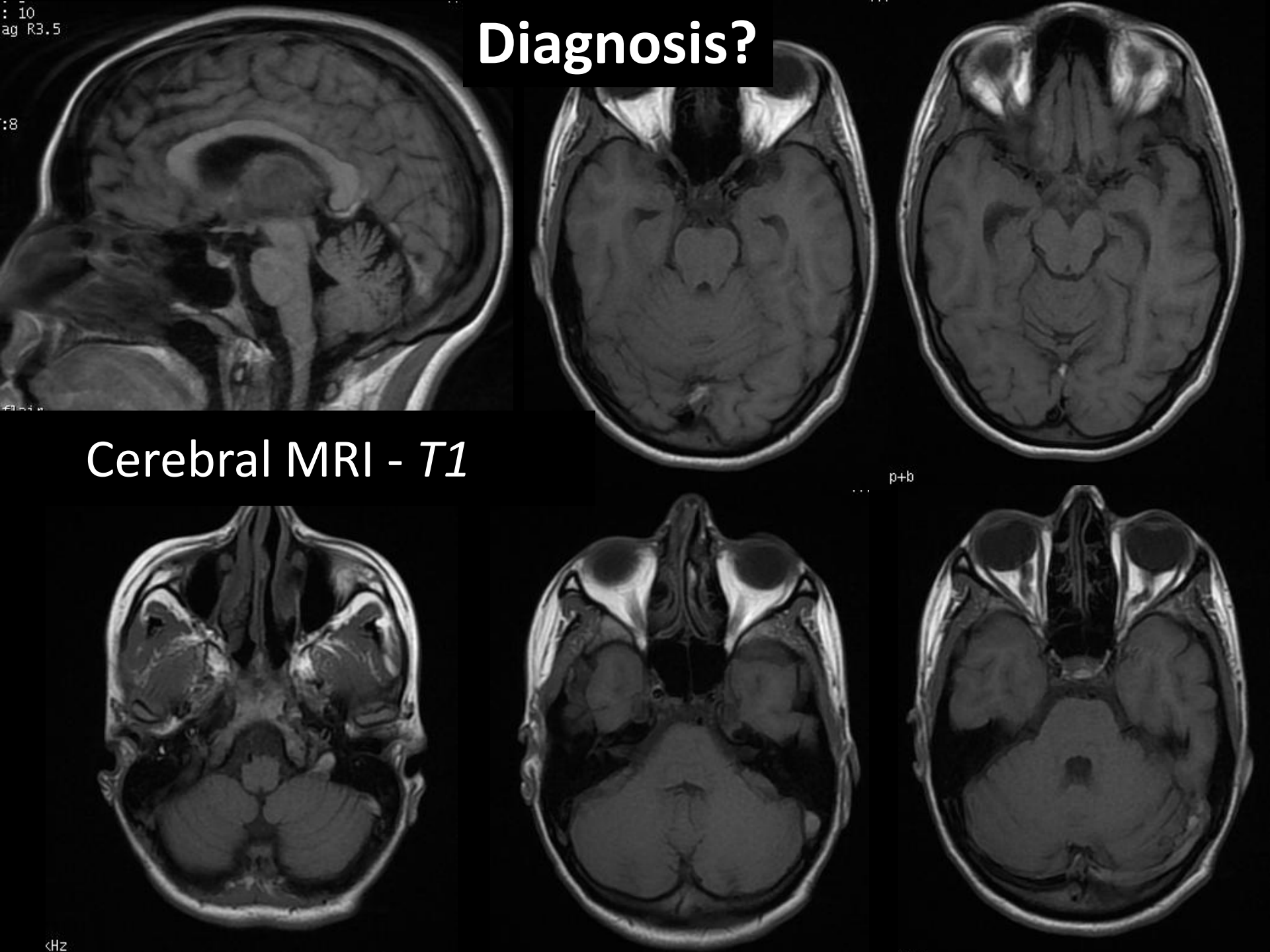
Cerebral MRI

FLAIR - Diffusion



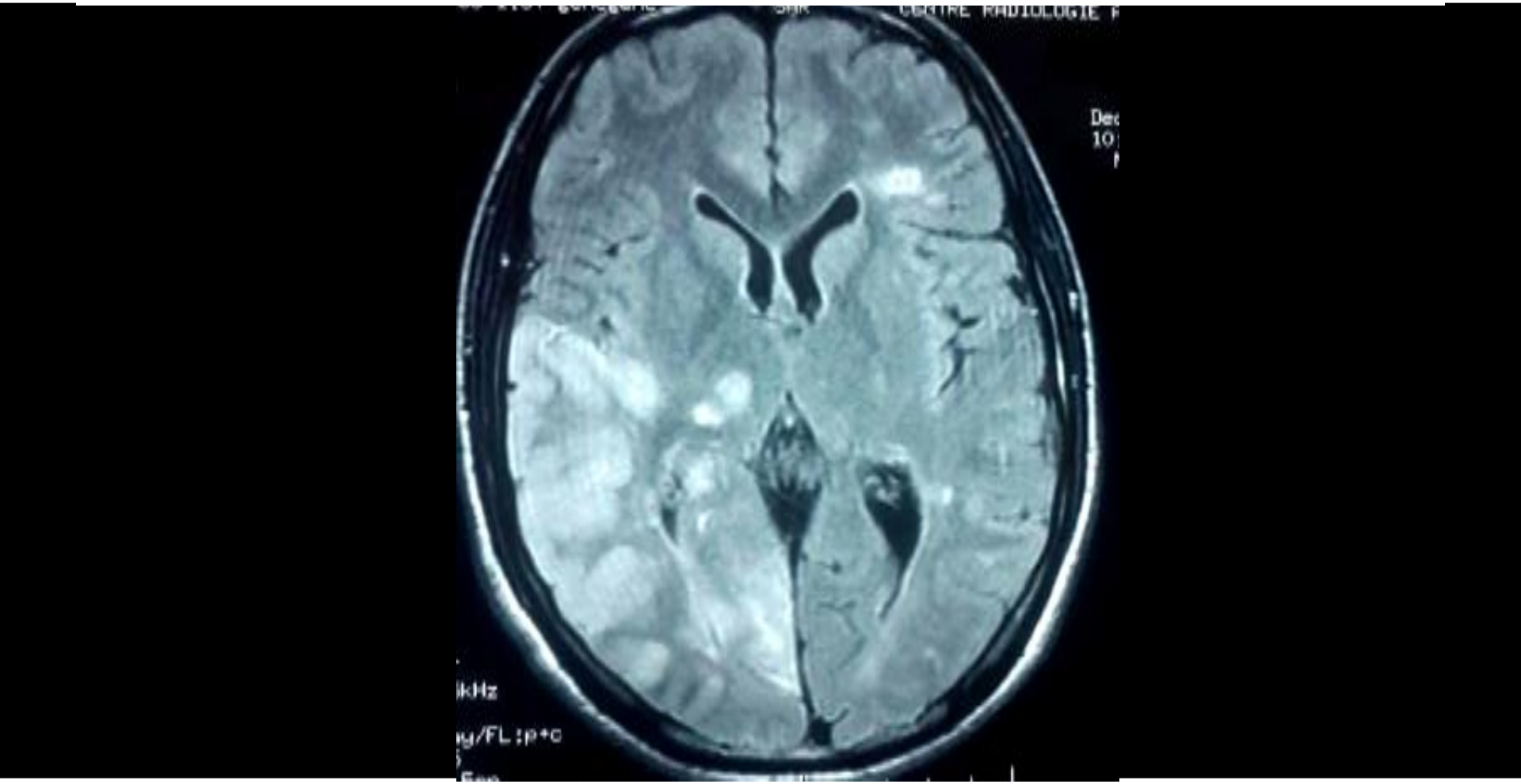


Cerebral MRI
*T2**


Diagnosis?
Cerebral MRI - *T1*

CASE N°5

- 31 years old man
- Sudden left hemiplegia with facial palsy and left homonymus hemianopia

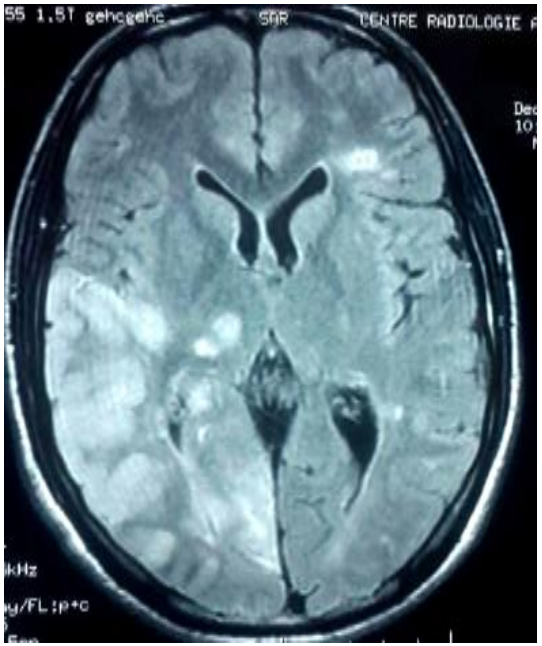


- EKG, Ultrasound of the supra-aortic trunk were normal.

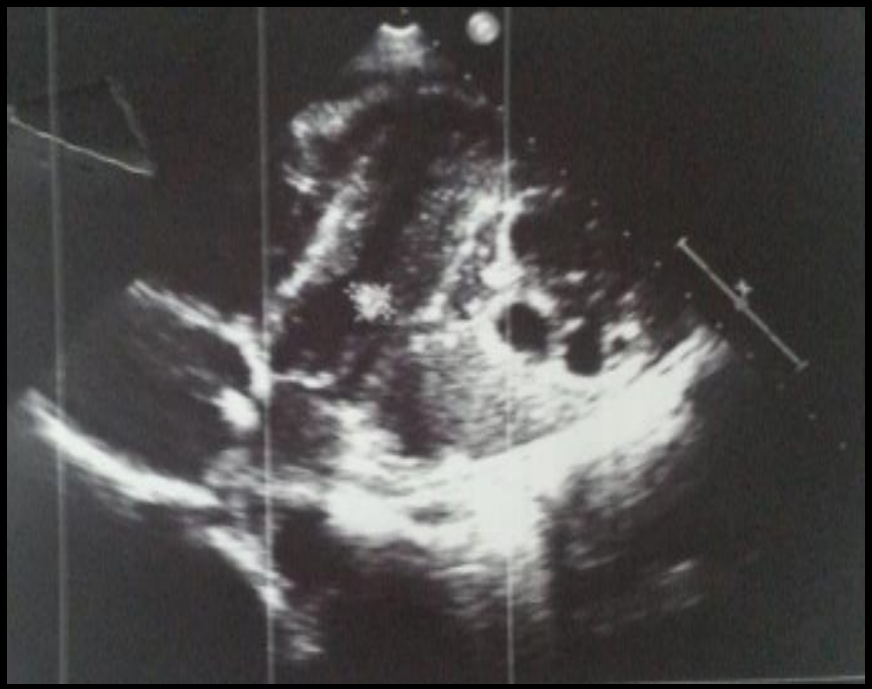
Right MCA infarct
Right posterior cerebral artery infarct

Ischemic stroke in young Men

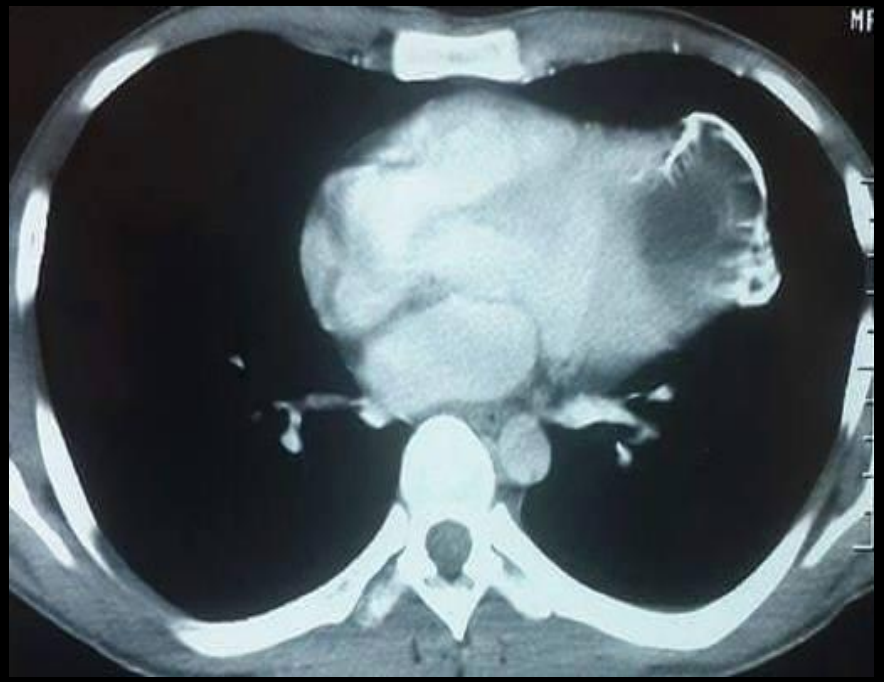
What's possible causes?



Echocardiography

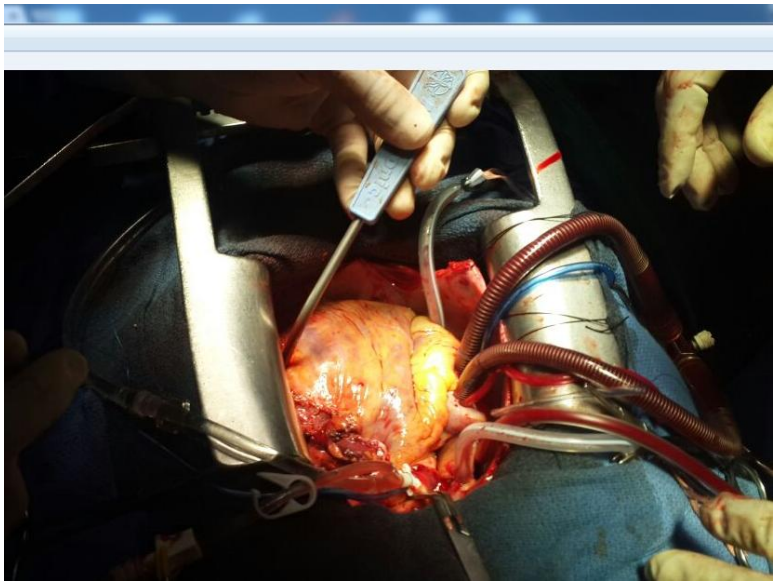


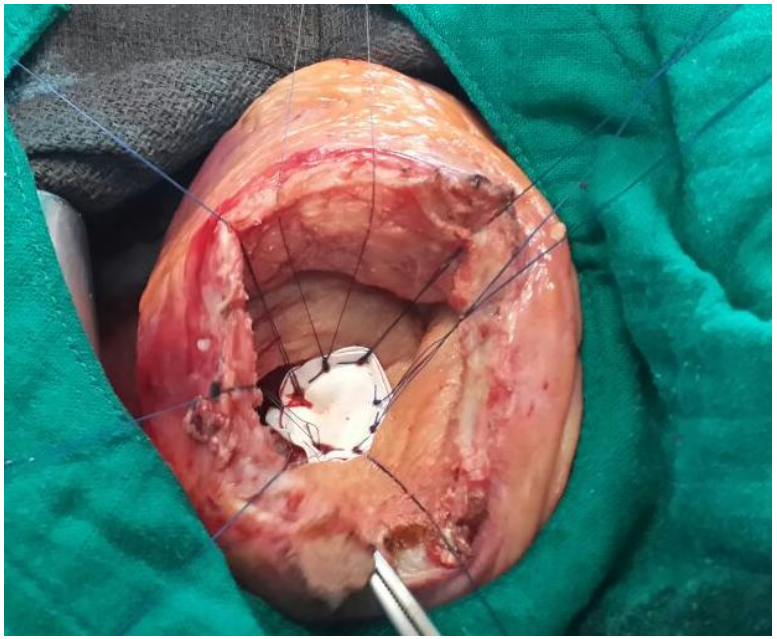
Chest CT scan



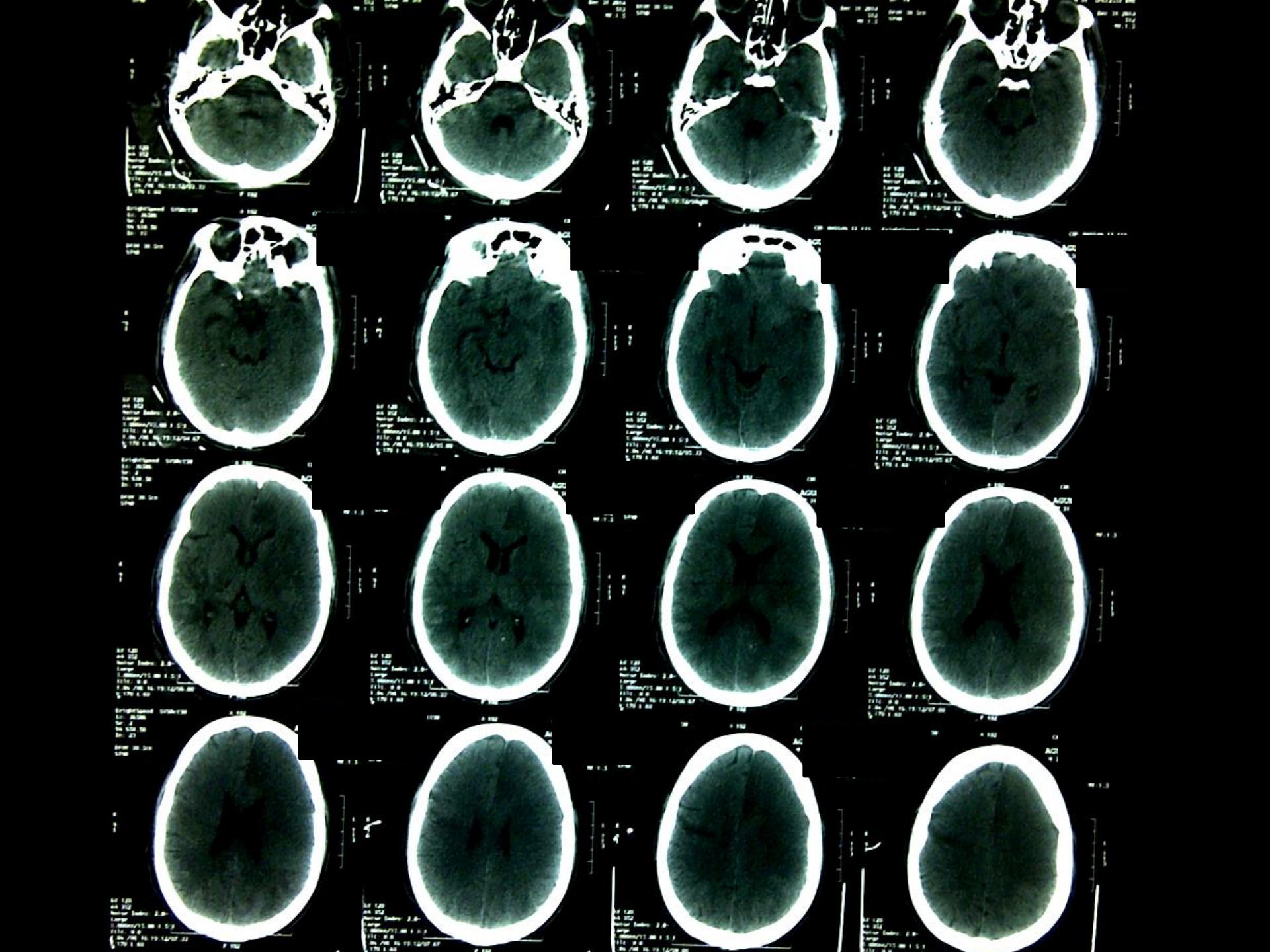
Cardioembolic stroke due to myocardial and intraventricular hydatid cyst

- Albendazole
- Cardiac surgery





- 5 days after surgery:
  - Right hemiplegia



Bilateral Cardioembolic stroke due to myocardial and intraventricular hydatid cyst

How can we explain this new massive ischemic stroke?

CASE N°6

- 75 years old women

- Admitted at the cardiology department for dyspnea

- Femoral fracture 3 weeks before admission

(intramedullary nail fixation)

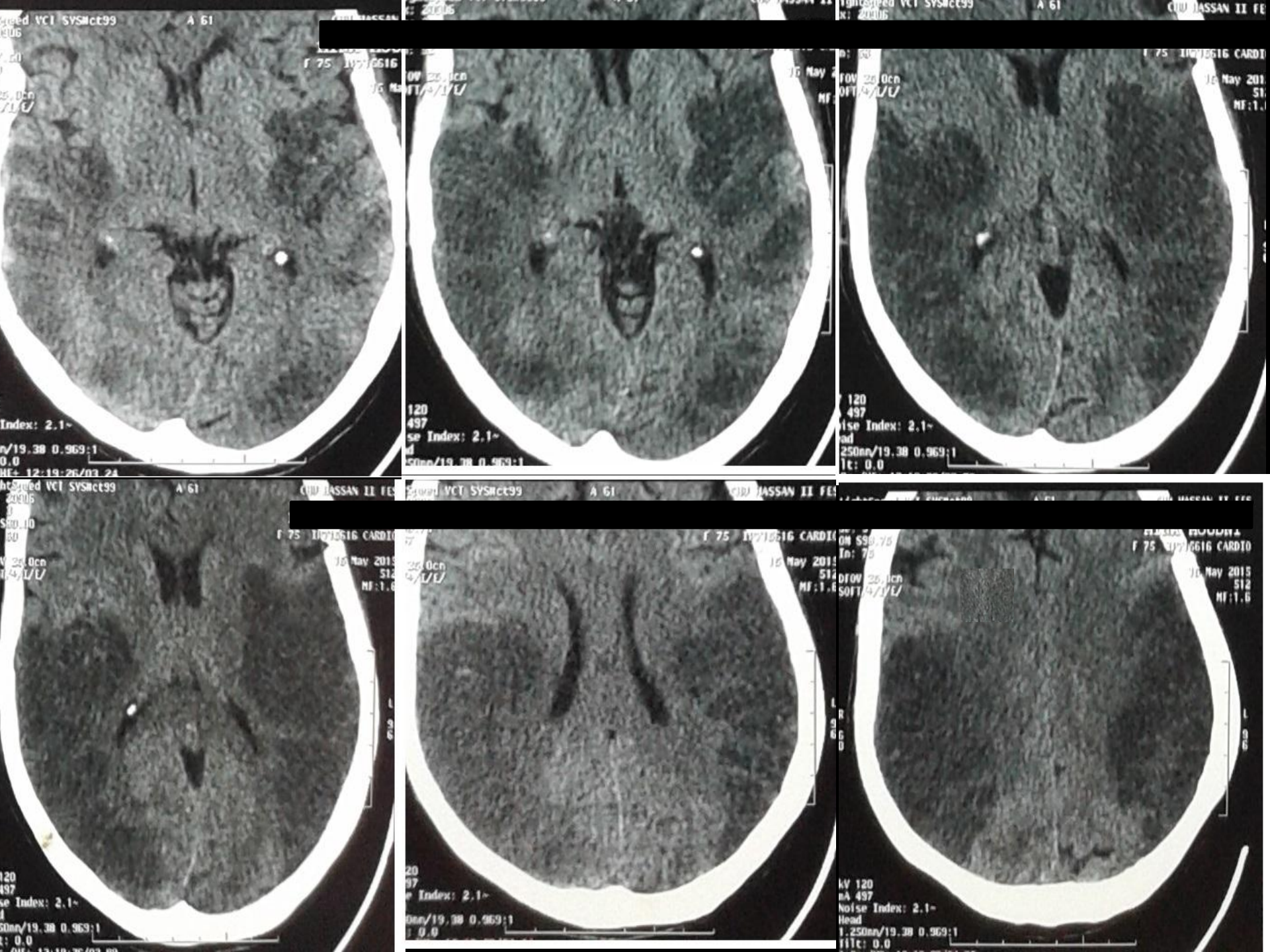
- Respiratory rate: 28/ min

-Pulse: 85/ min

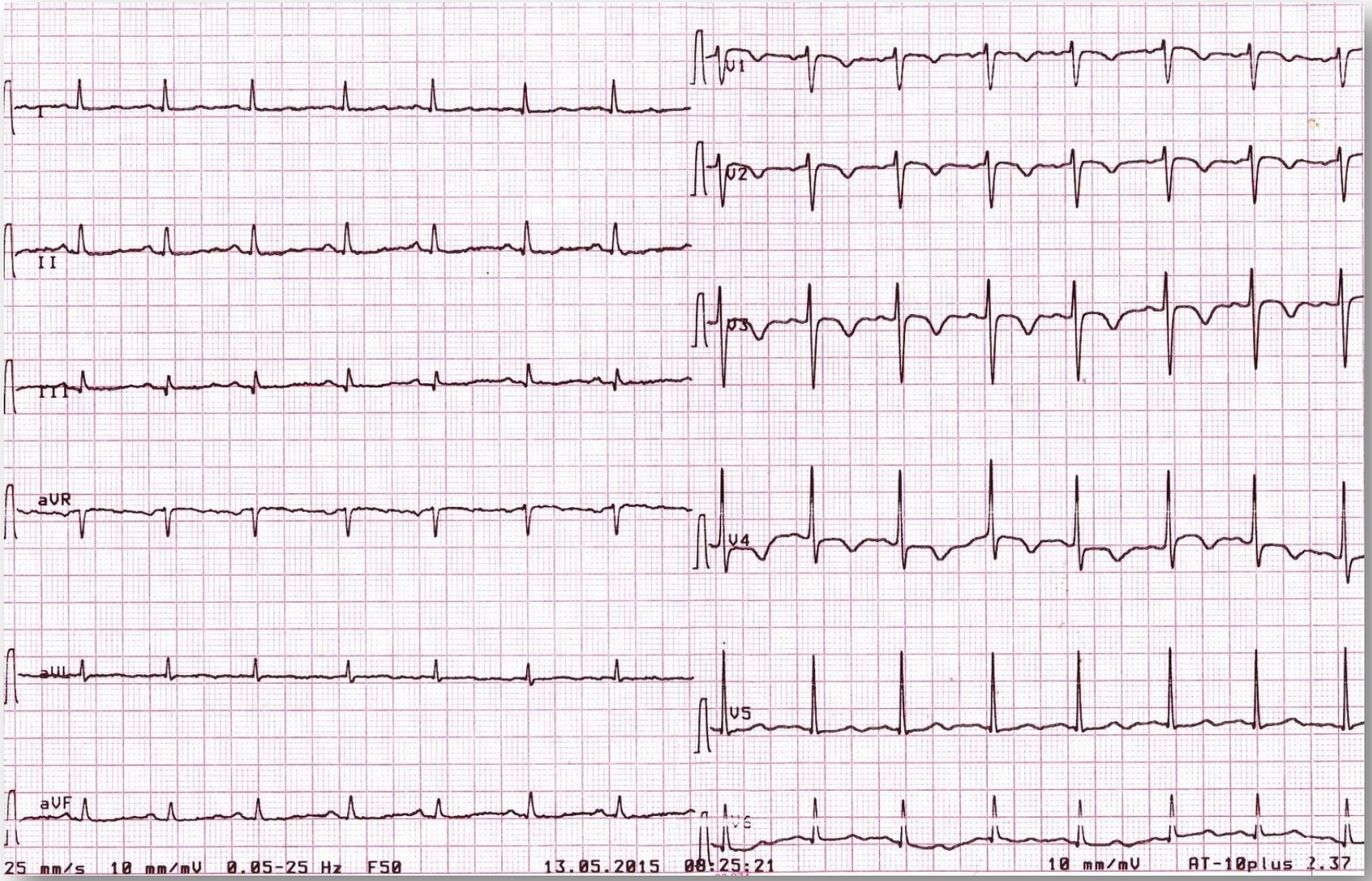
-BP: 100/70 mmHg

24 hours after admission:

- Hemodynamic instability: inotropic support.
- Intubation and mechanical ventilation
- GCS 06/15 (M4, V1, Y1)
- Flaccid quadriplegia with right facial palsy
- Pain and edema of right leg



EKG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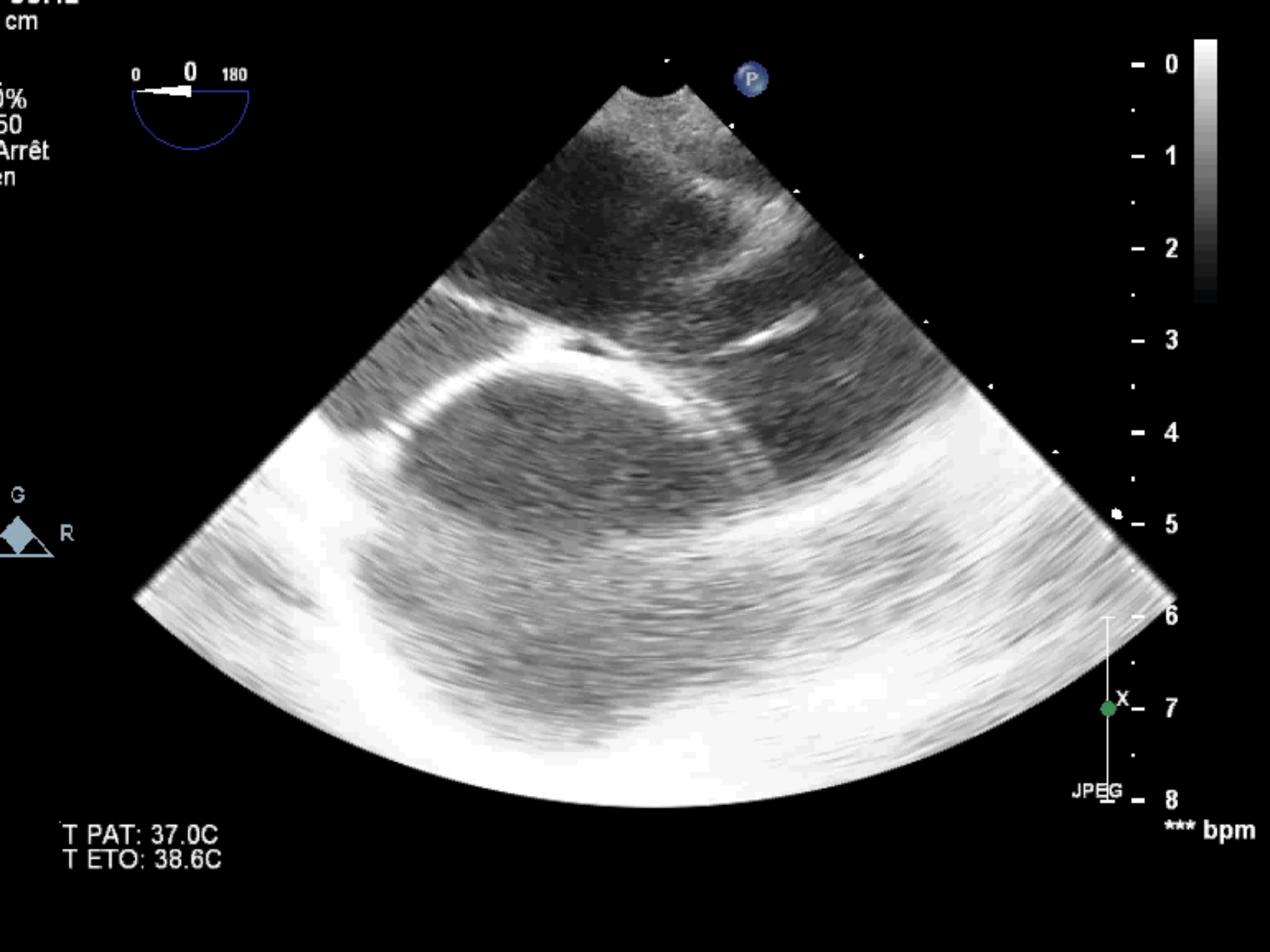
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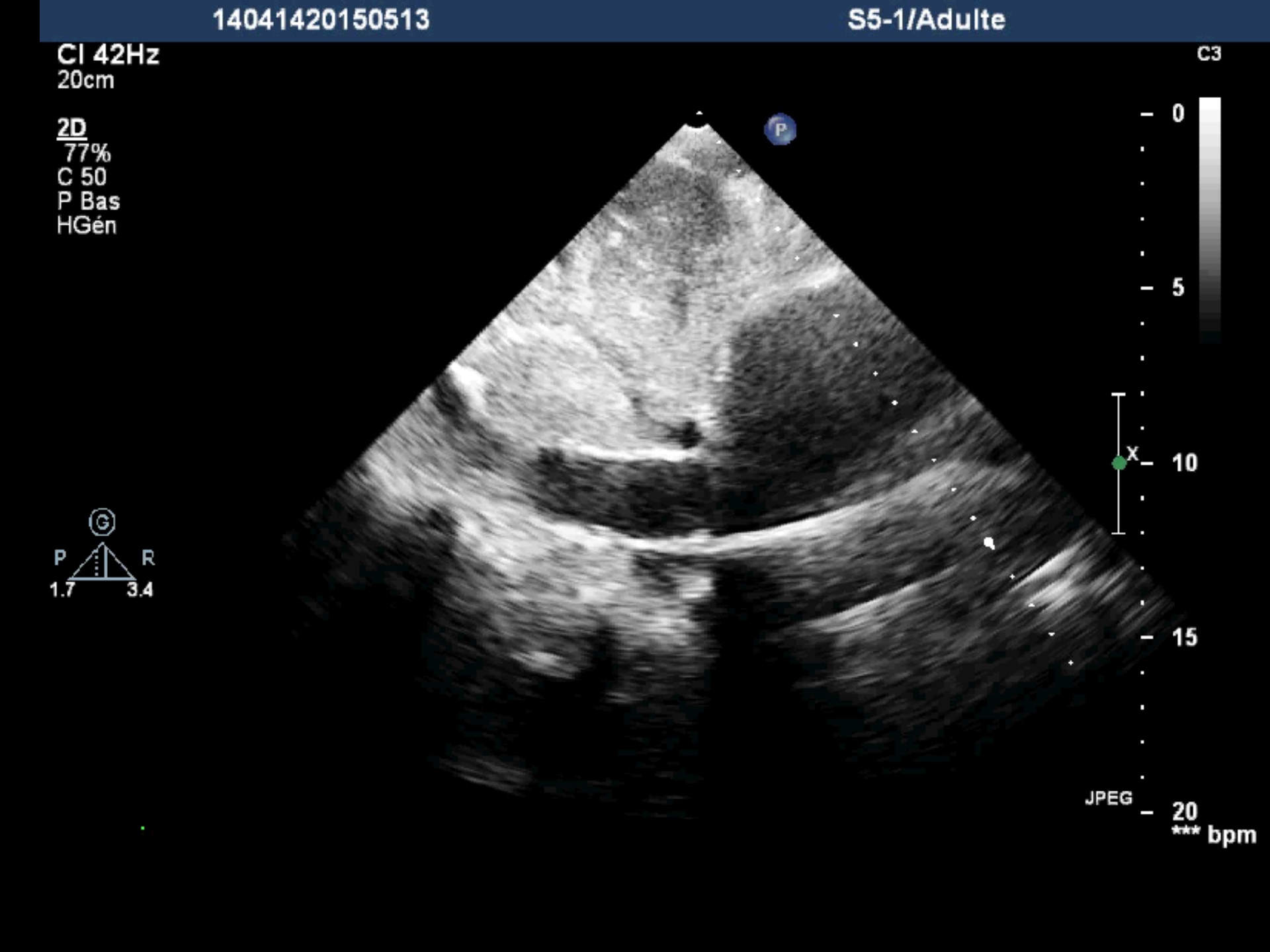
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CT angiography:

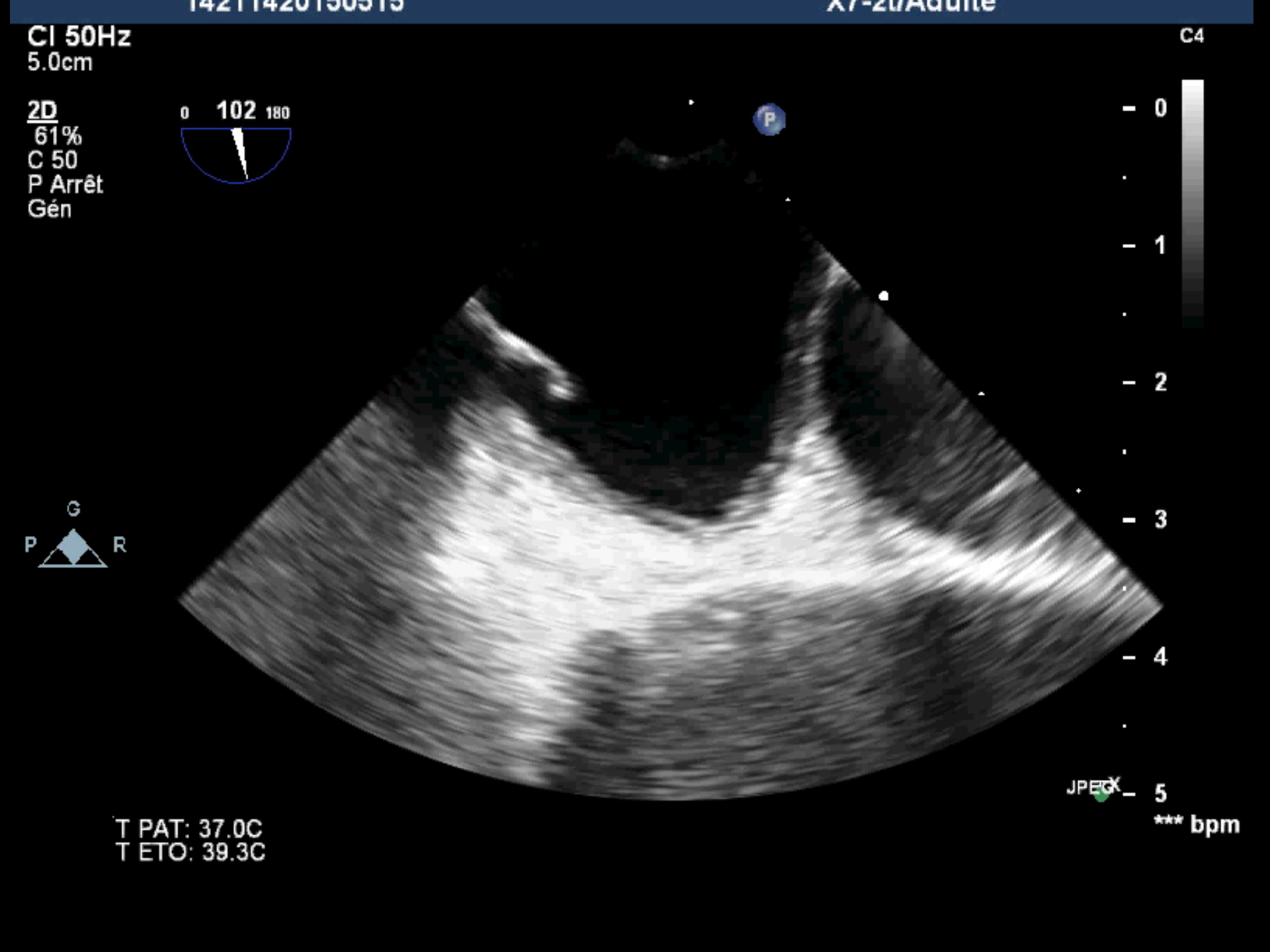
Massive bilateral pulmonary embolism

Outcome:

Five days after admission: fatal cardiac arrest.

Bilateral ischemic stroke complication of pulmonary embolism

How can we explain these bilateral stroke?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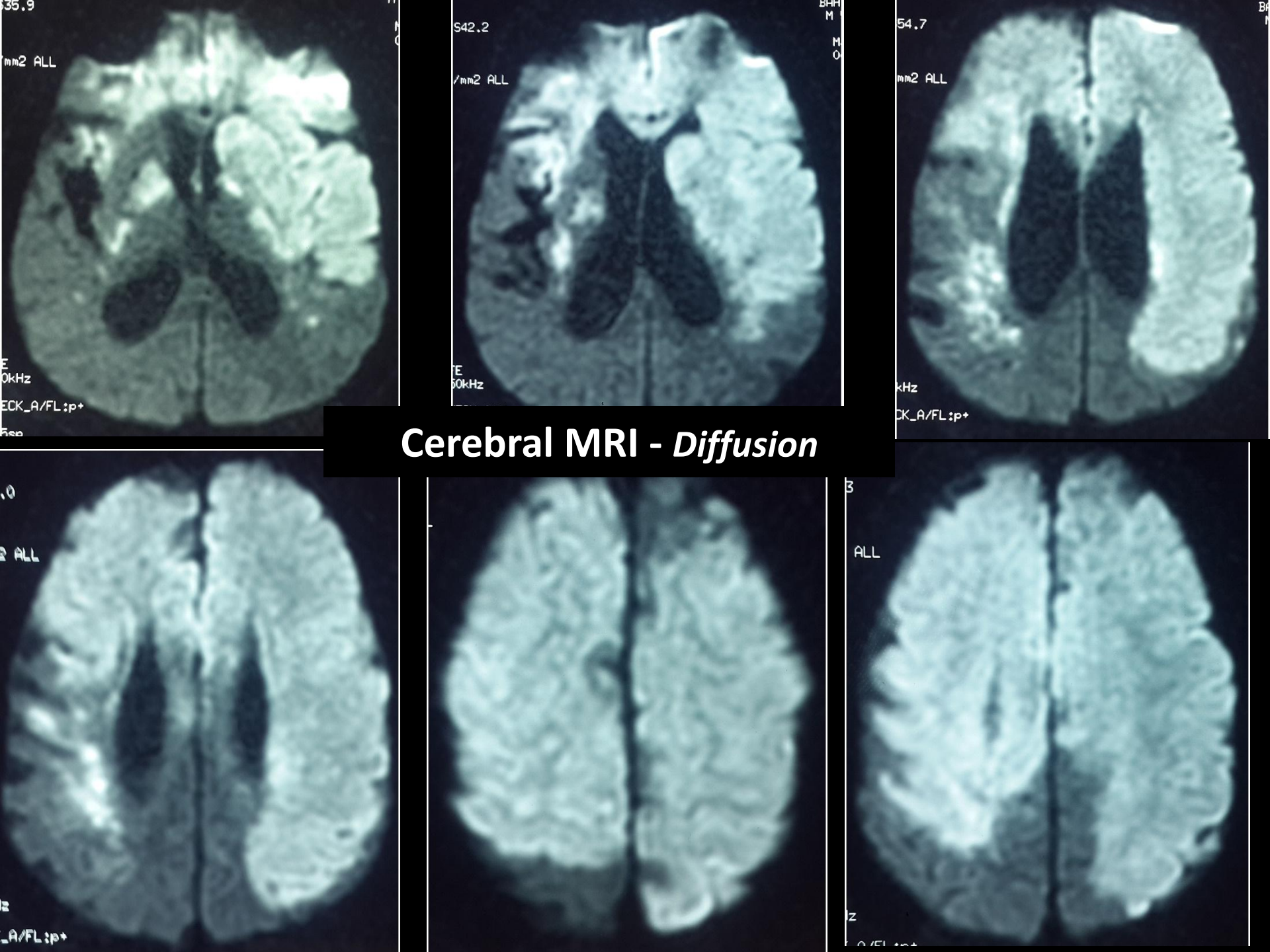
*** bpm
T PAT: 37.0C
T ETO: 39.3C

CASE N°7

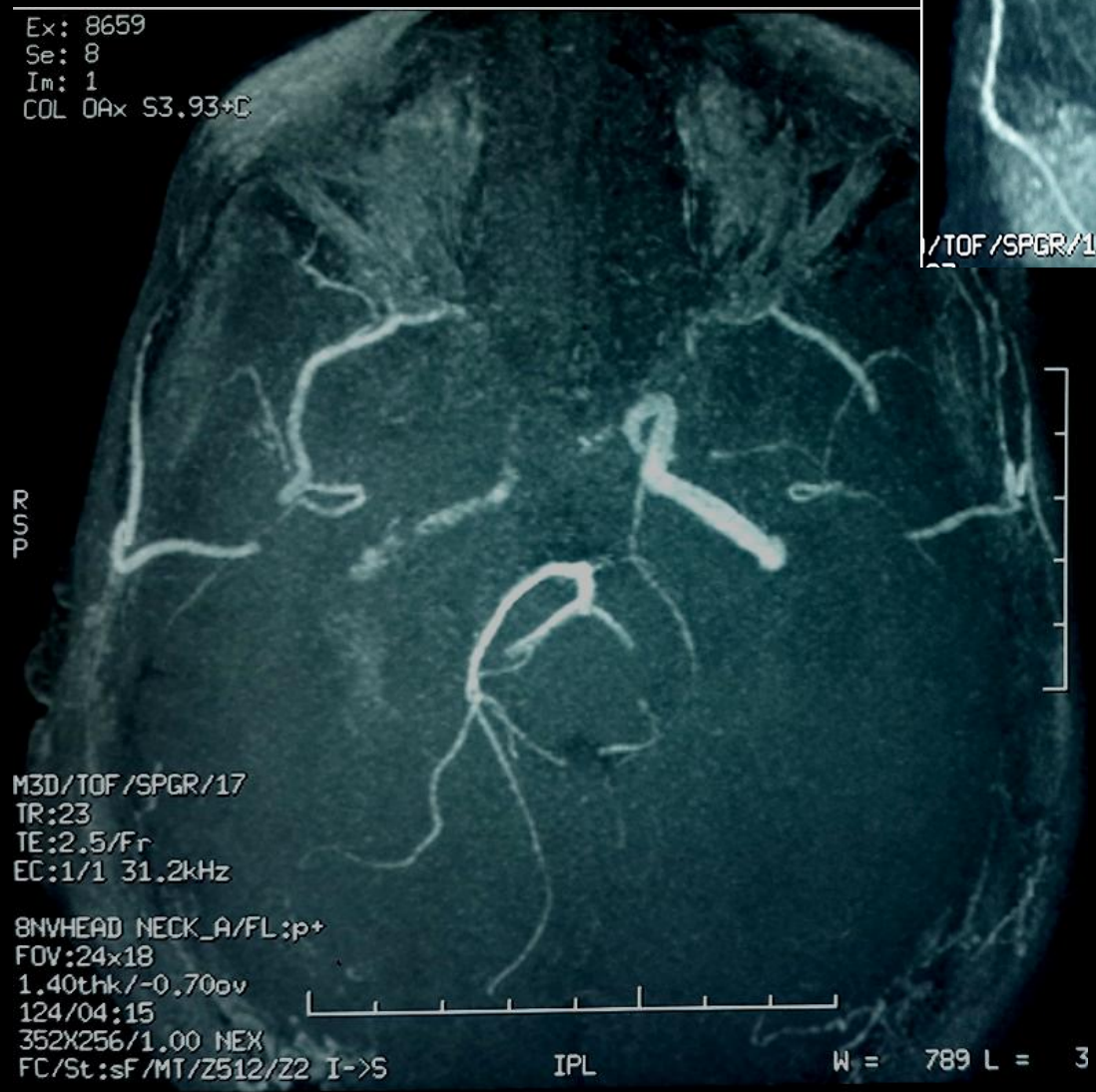
- A 53 years old man
- History: 0
- Admitted for generalized status epilepticus during 16 hours
- No fever context

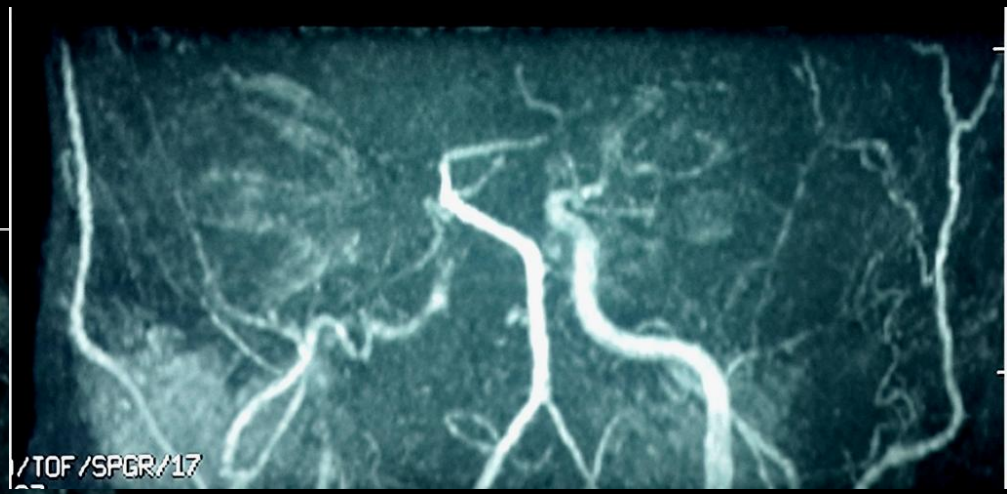
Neurological Exam

- GCS: 9/15 (M5, V2, Y2).
- tetraplegia
- Tonic deviation of the head and eyes to the left.


Cerebral MRI - *Diffusion*

Cerebral MRA





Laboratory

- Serology for syphilis:
  - Venereal Disease Research Laboratory (**VDRL**),
  - Treponema pallidum hemagglutination test (**TPHA**) were **strongly positive**
- **VDRL** and **TPHA** for **CSF** were also **positive**.
- The CSF:
  - WBC: **20 cells**/µL
  - 80% were lymphocytes with red blood cells 2 cells/µL
  - Protein level was 900mg/L

Bilateral ischemic stroke with neurosyphilis

How can we explain these bilateral ischemic stroke?

Key message

BILATERAL INFARCTS:

- **Anatomical**
  - **Variants (A1 hypoplasia, Percheron artery)**
  - **Specificities (Vertebrobasilar, venous sinus)**
- **Etiological**
  - **Embolism (cardiac, paradoxical)**
  - **Infectious (myocardial hydatid cyst,…)**
  - **Vasculitis (syphilis,…)**
  - **Hemodynamic**
  - **Compressive (pituitary apoplexia…)**
  - **Vasospasm (SAH)**

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THANK YOU FOR YOUR ATTENTION