

The background of the slide is a photograph of the Golden Gate Bridge in San Francisco, taken at night. The bridge's towers and suspension cables are silhouetted against a dark blue, misty sky. The water below is also dark and reflects some of the bridge's lights.

# INTRACEREBRAL HAEMATOMAS

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EANS COURSE  
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# *INTRACEREBRAL HAEMATOMAS*

## ISCHEMIC STROKE

200/100.000/year

19% dead 1st month

50% independent 1 year

(Dennis M et al, *Stroke* 24:796-800, 1993)

## HAEMORRAGIC STROKE

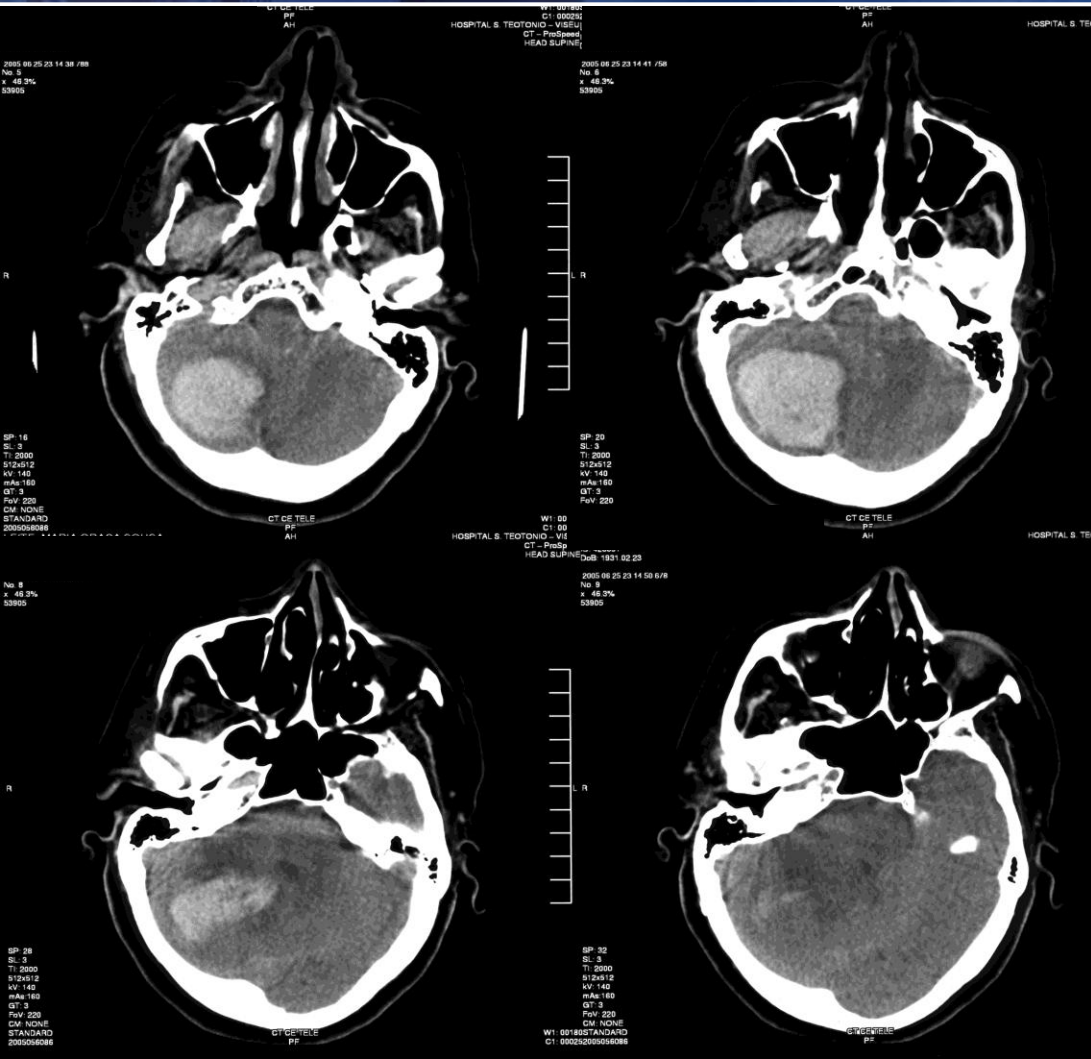
20/100.000/year

40% dead 1st month

20% independent 1 year

(Dennis M et al, *Cerebrovas Dis* 16:9-13, 2003)

# *INTRACEREBRAL HAEMATOMAS*



Female, 74 years old  
arterial hypertension  
sudden headache +  
dizziness  
other hospital - CT scan

12h later GCS=15,  
vomiting, mild disartria,  
nothing else.

# *INTRACEREBRAL HAEMATOMAS*

## □ INFRATENTORIAL

- 46% deterioration

- predictive factors :

  - arterial hypertension

  - miosis, ocular paralysis,

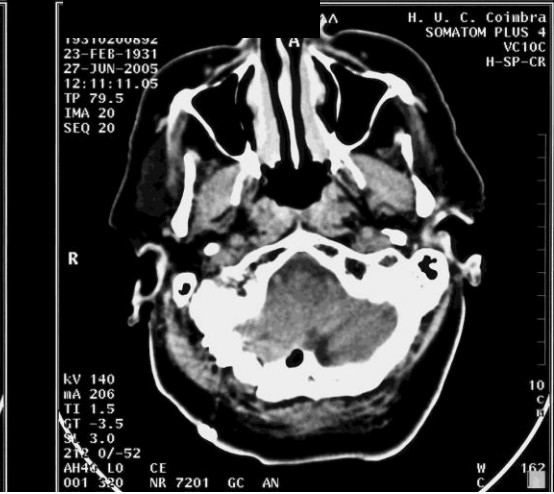
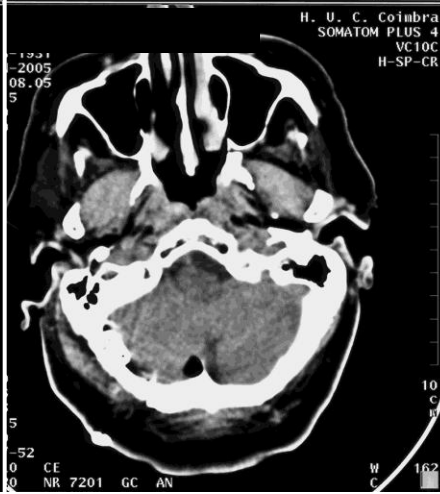
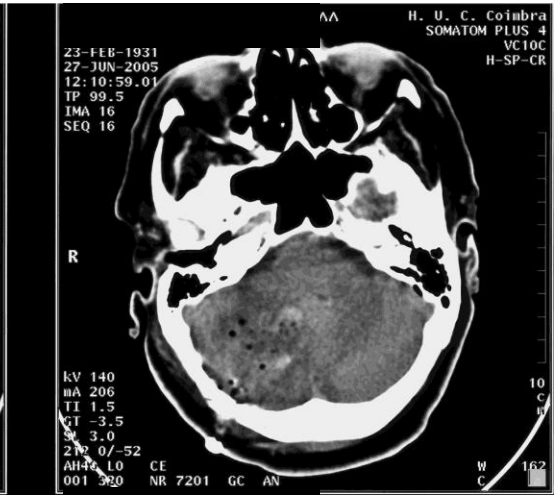
  - corneal and oculocephalic reflexes

  - haematoma > 3 cm, extension to vermis,

  - brain stem distortion, herniation, IVH,

  - hydrocephalus

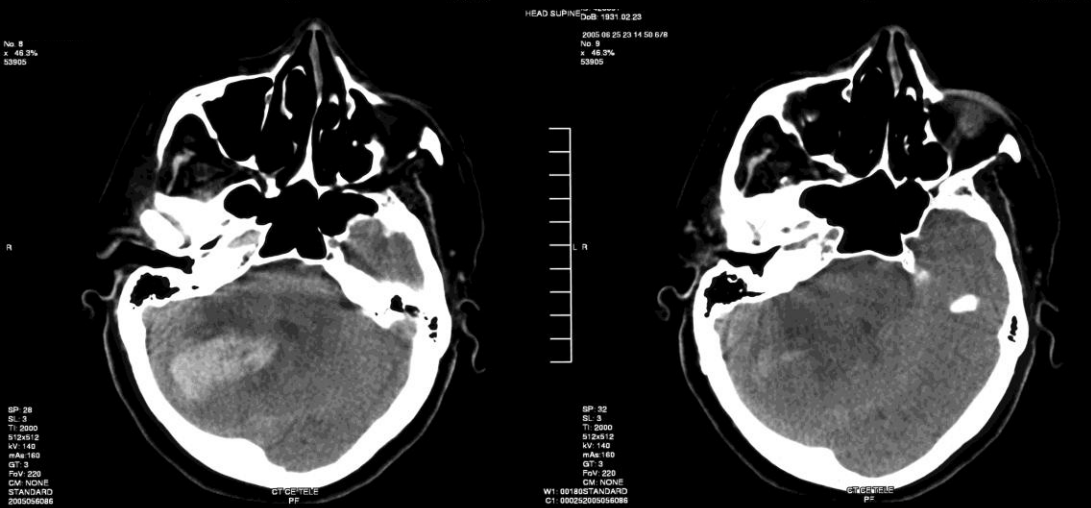
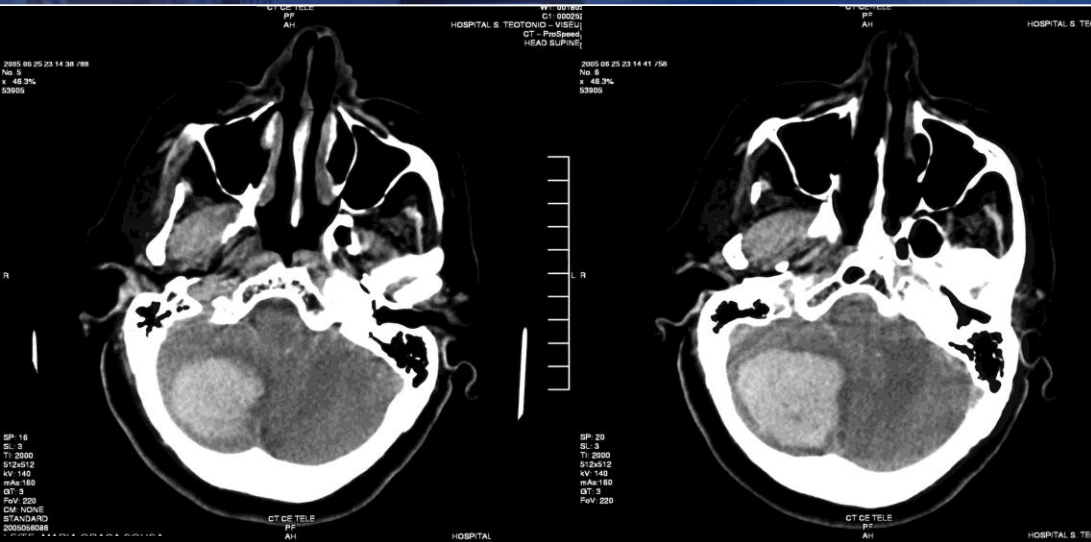
# INTRACEREBRAL HAEMATOMAS



# INTRACEREBRAL HAEMATOMAS

Female, 74 years old  
arterial hypertension  
sudden headache +  
dizziness  
GCS = 4

CT – ...



# INTRACEREBRAL HAEMATOMAS

**TABLE 5. Recommendations for Surgical Treatment of ICH American Heart Association – Stroke Council**

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## Nonsurgical candidates

1. Patients with small hemorrhages ( $<10 \text{ cm}^3$ ) or minimal neurological deficits (levels of evidence II through V, grade B recommendation).
2. Patients with a GCS score  $\leq 4$  (levels of evidence II through V, grade B recommendation). However, patients with a GCS score  $\leq 4$  who have a cerebellar hemorrhage with brain stem compression may still be candidates for lifesaving surgery in certain clinical situations.

## Surgical candidates

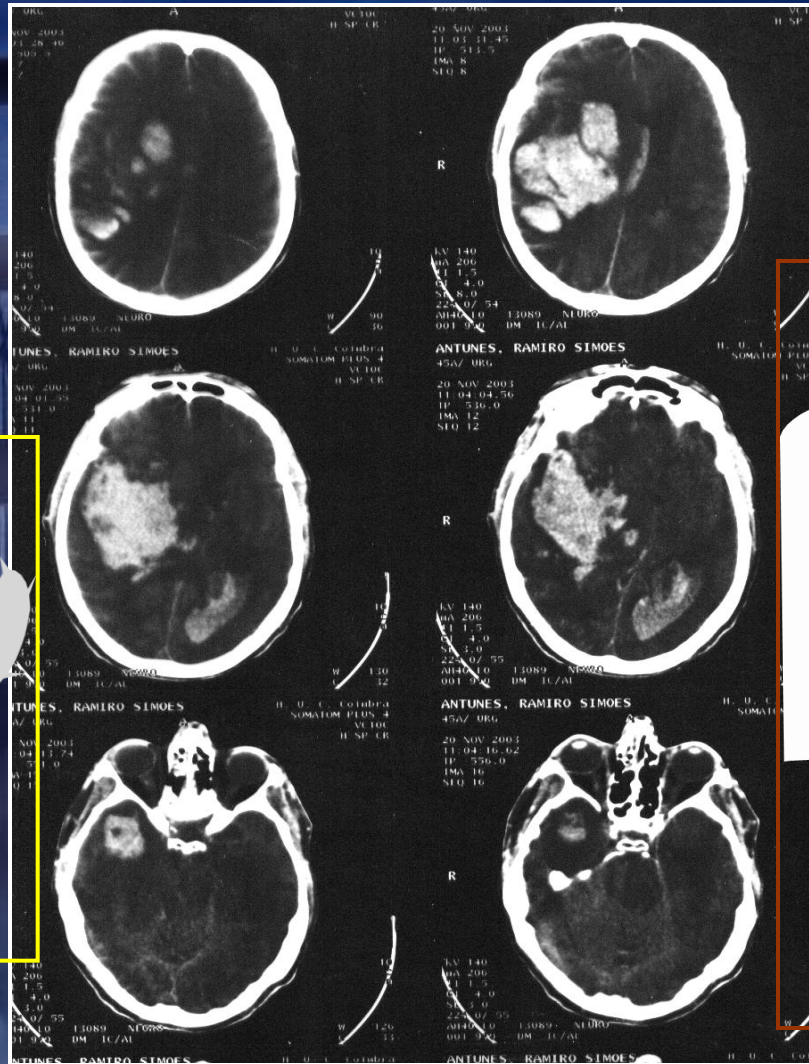
1. Patients with cerebellar hemorrhage  $>3 \text{ cm}$  who are neurologically deteriorating or who have brain stem compression and hydrocephalus from ventricular obstruction should have surgical removal of the hemorrhage as soon as possible (levels of evidence III through V, grade C recommendation).
2. ICH associated with a structural lesion such as an aneurysm, arteriovenous malformation, or cavernous angioma may be removed if the patient has a chance for a good outcome and the structural vascular lesion is surgically accessible (levels of evidence III through V, grade C recommendation).
3. Young patients with a moderate or large lobar hemorrhage who are clinically deteriorating (levels of evidence II through V, grade B recommendation).

## Best therapy unclear

All other patients.

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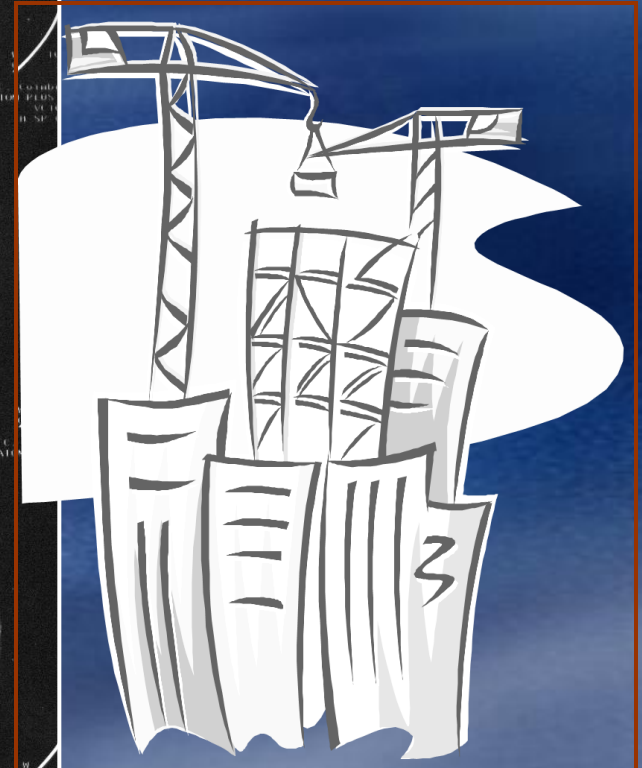
# INTRACEREBRAL HAEMATOMAS



surgery



medical treatment





# *INTRACEREBRAL HAEMATOMAS*

□ “Early surgery versus conservative treatment in patients with spontaneous supratentorial intracerebral haematomas in the International Surgical Trial in Intracerebral Haemorrhage (STICH): a randomized trial”

(Mendelow A et al, *Lancet* 365:387-97, 2005)

# *INTRACEREBRAL HAEMATOMAS*

## □ STICH

26% favourable outcome with surgery

24% favourable outcome with medical treatment

(OD 0.89 [95% CI 0.66-1.19]  $p=0.414$ )

36% mortality with surgery

37% mortality with medical treatment

(OD 0.95 [95% CI 0.73-0.1.19]  $p=0.707$ )

# *INTRACEREBRAL HAEMATOMAS*

## DIAGNOSIS

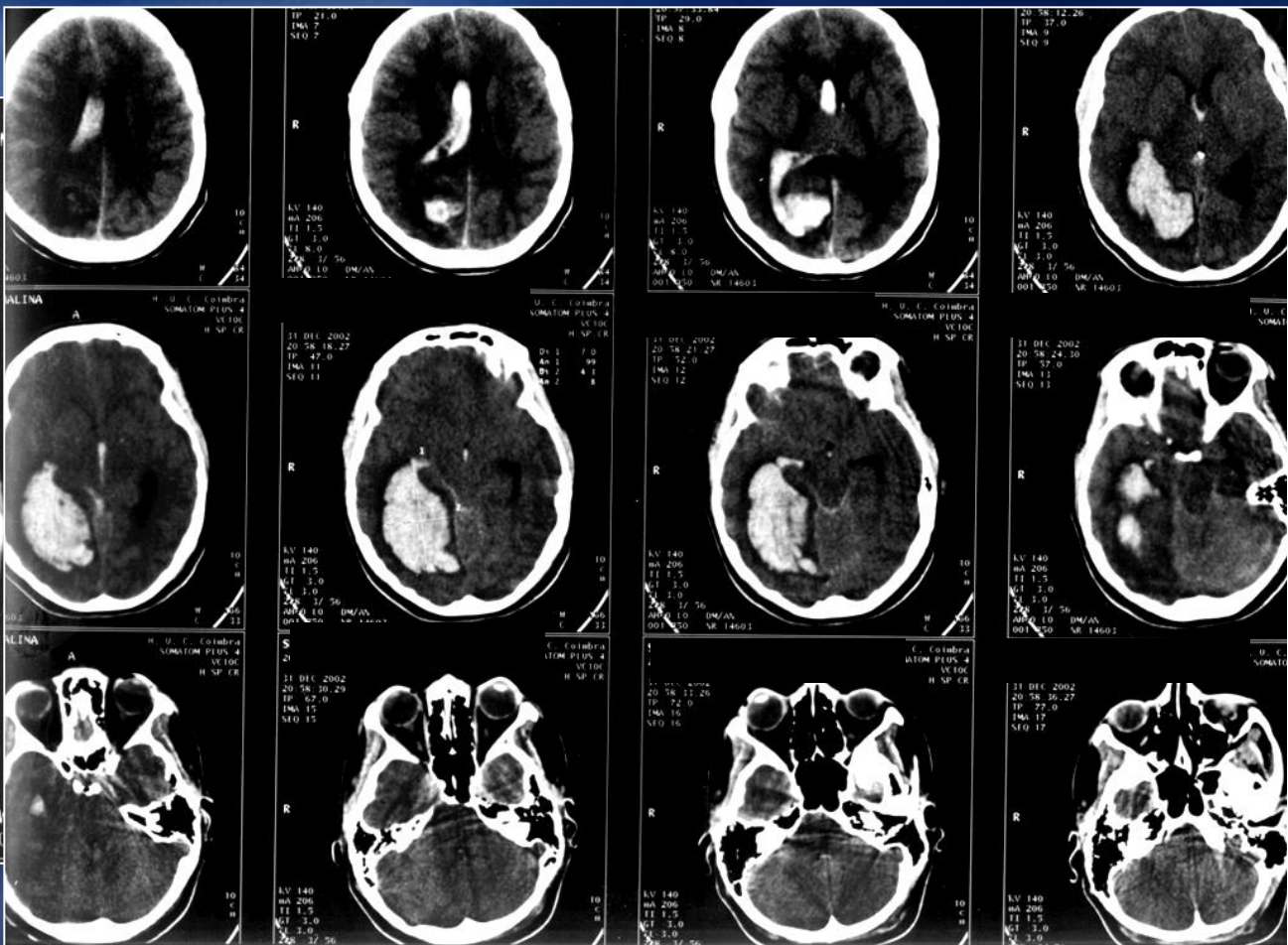
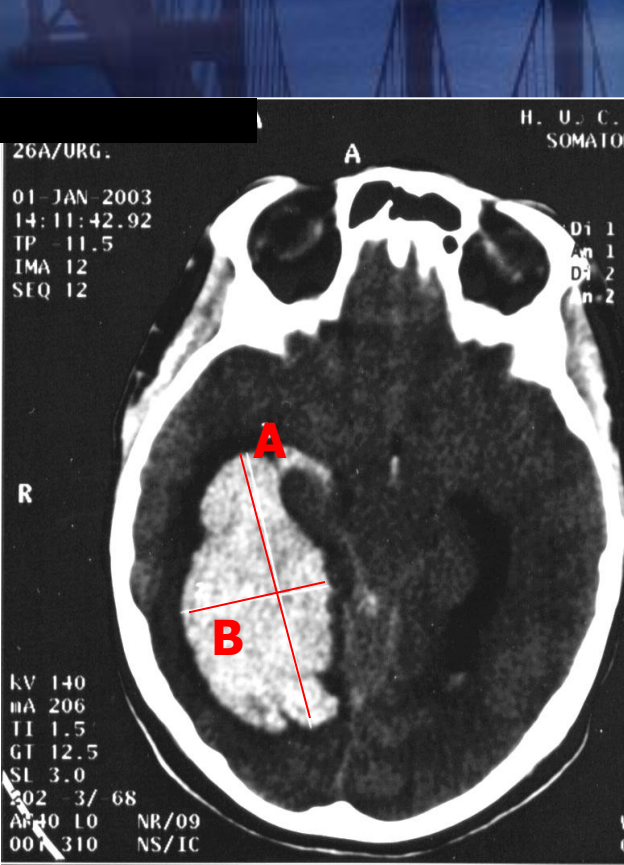
- ◆ CT scan
- ◆ MR scan
- ◆ Angiography

# *INTRACEREBRAL HAEMATOMAS*

## DIAGNOSIS

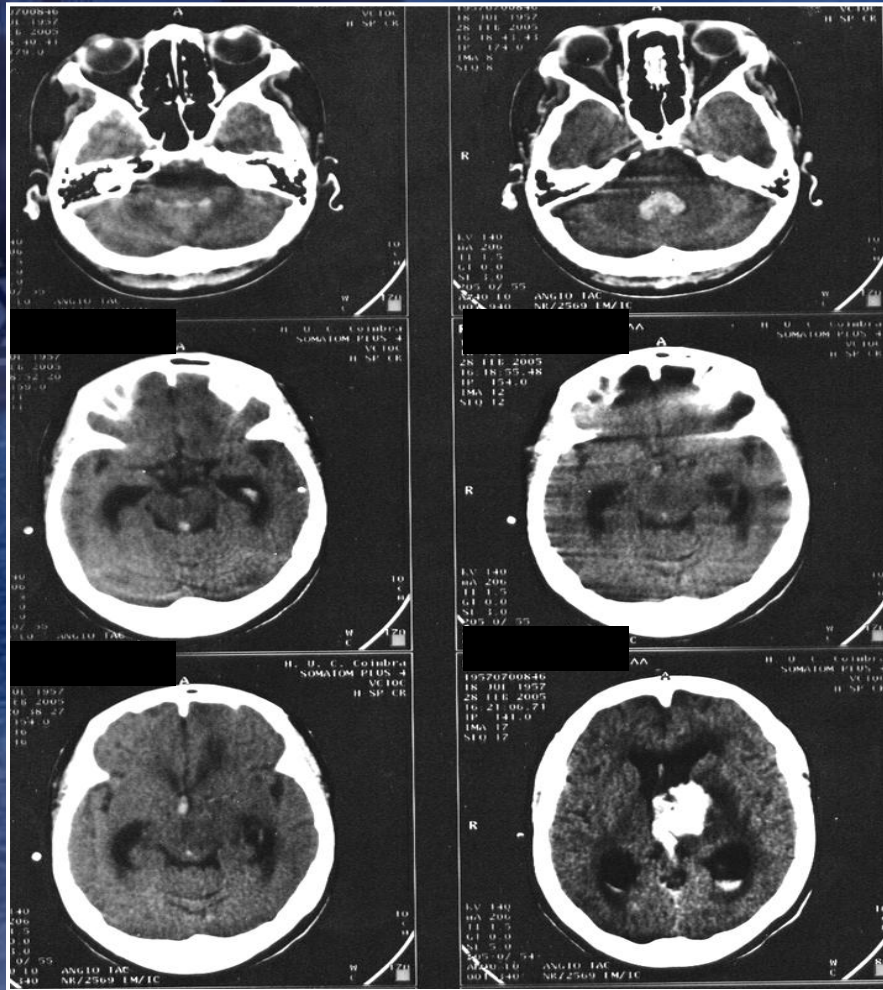
- ◆ CT scan – sensibility, localization, volume, IVH, ventricular dilatation, oedema, mass effect, middle line shift
- ◆ MR – small and previous haemorrhages
- ◆ Angio – selected cases

# INTRACEREBRAL HAEMATOMAS



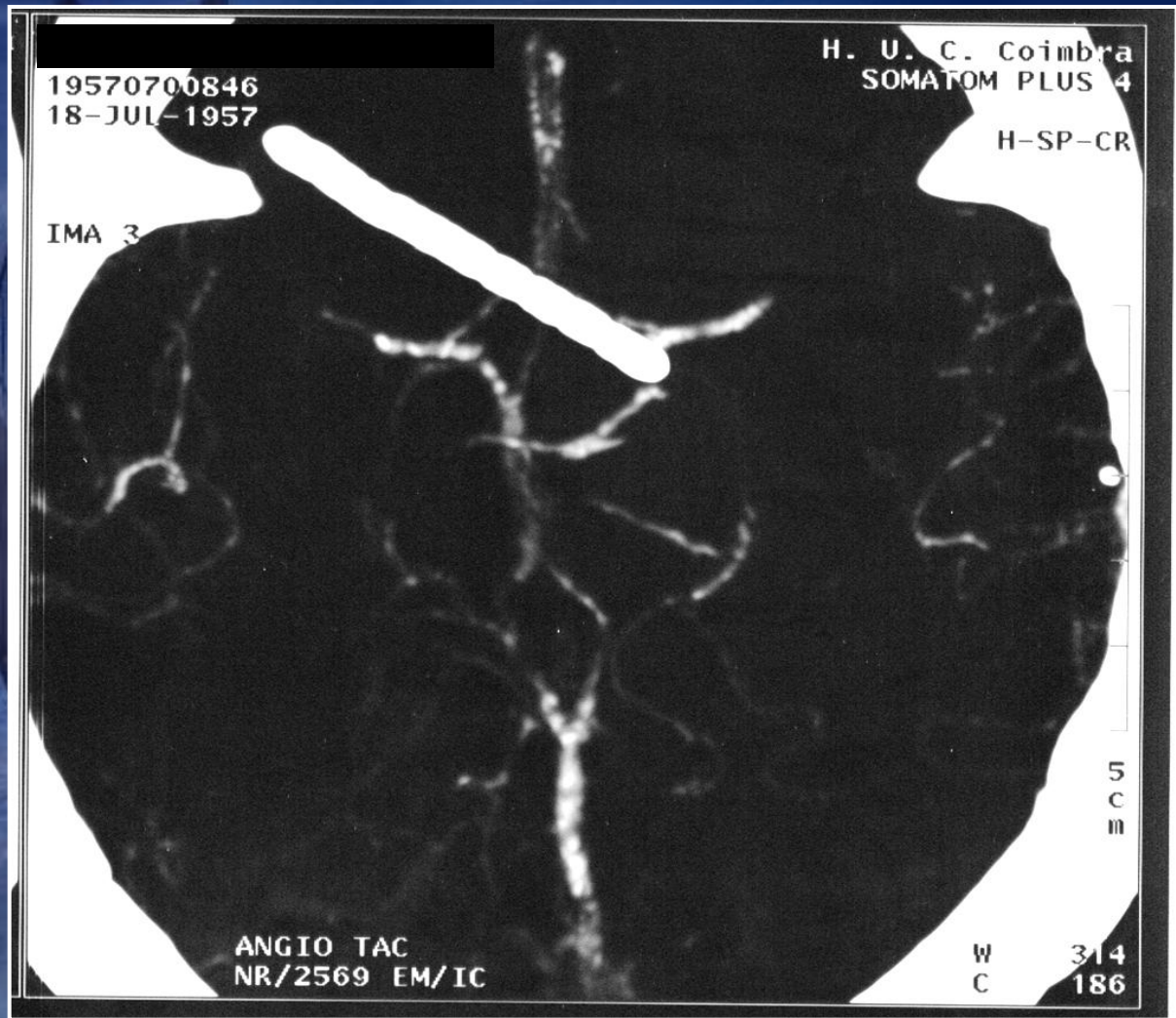
AxBxC/2

# *INTRACEREBRAL HAEMATOMAS*

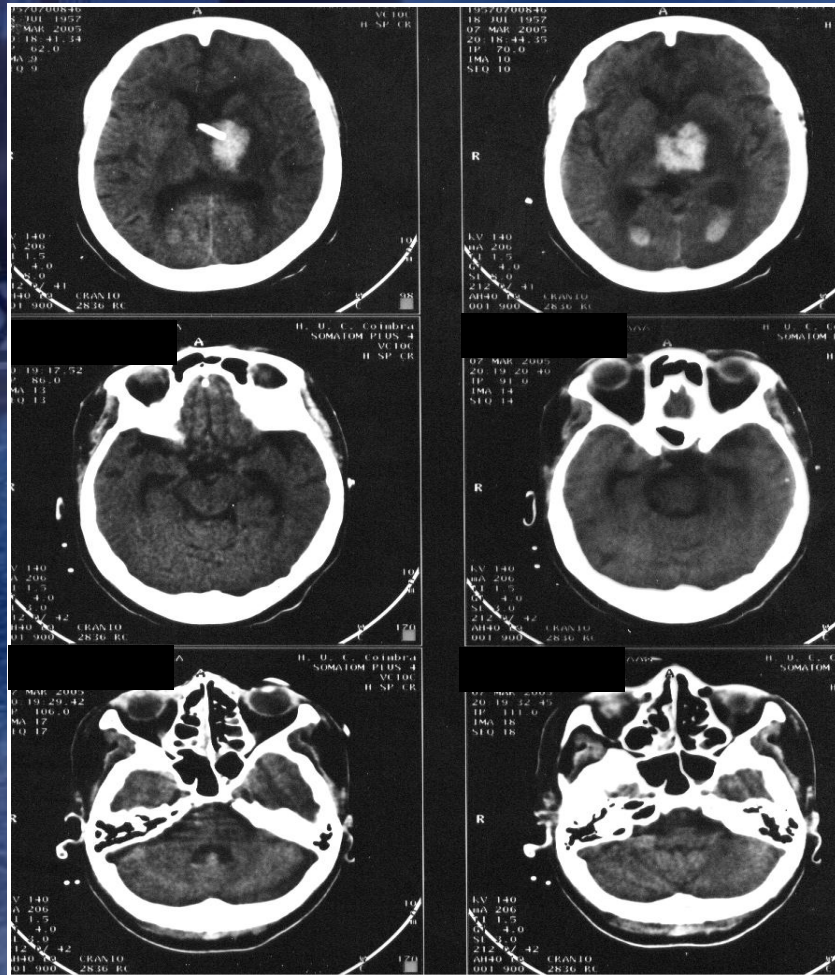


Female, 37 y  
arterial hypertension  
E1M5V1 = 7  
miotic pupils  
right hemiplegia  
CTscan day 0

# *INTRACEREBRAL HAEMATOMAS*



# *INTRACEREBRAL HAEMATOMAS*



EVD  
GCS = 14  
right hemiparesis 3  
EVD out 2 weeks  
Neurology  
3 months GCS = 15  
hemiparesis 4



# *INTRACEREBRAL HAEMATOMAS*

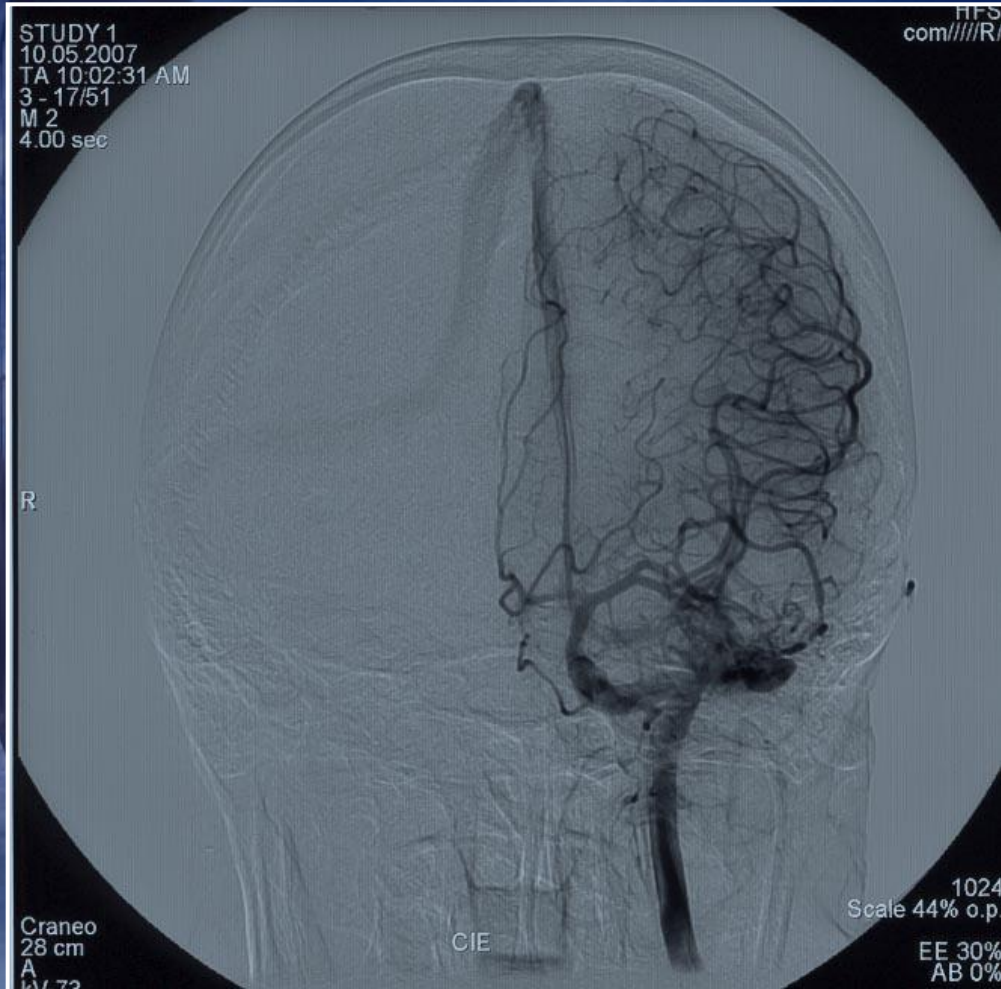


Male, 25Y  
Headaches 3 days  
Neurological  
examination Ø

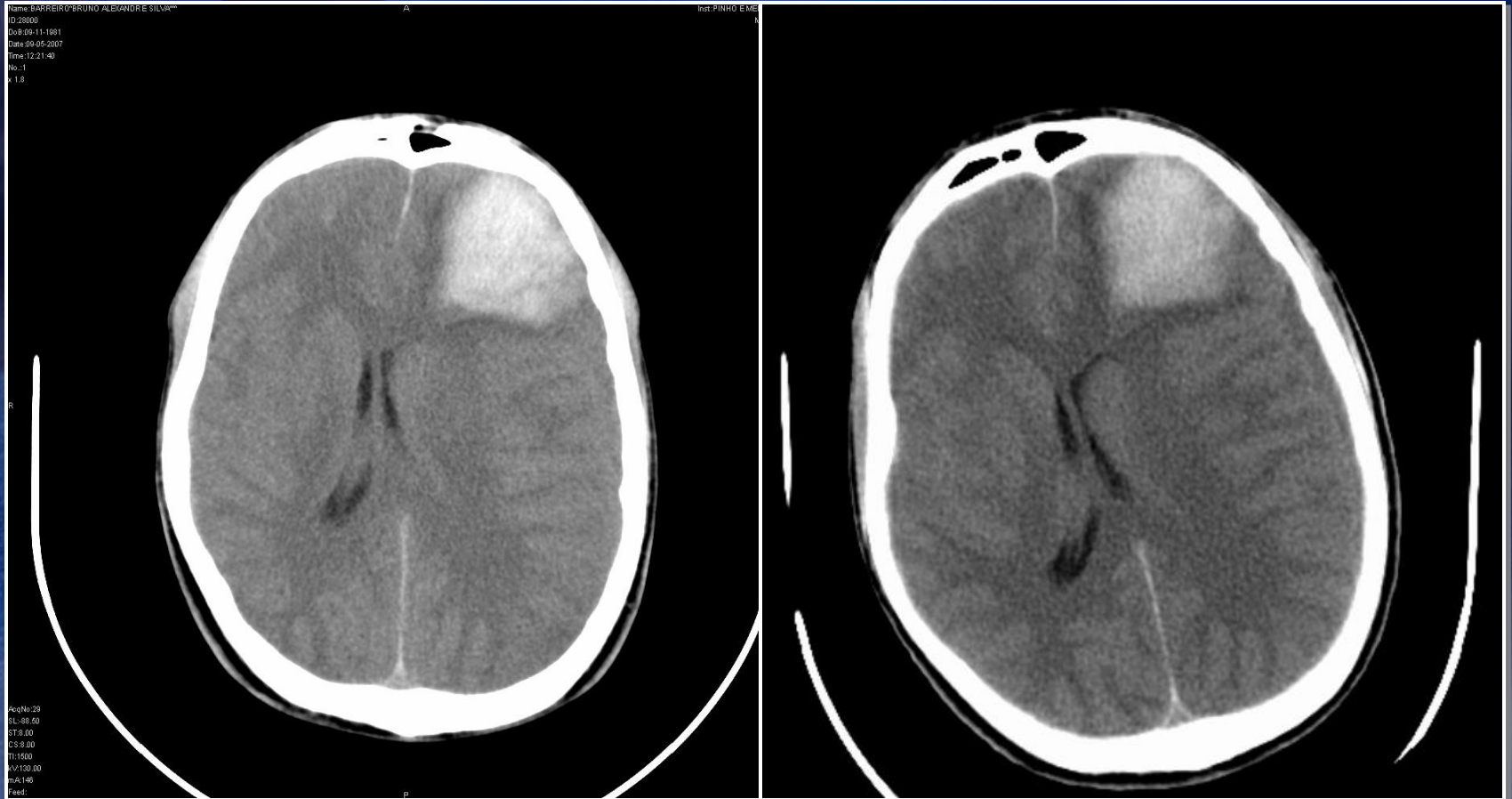
# *INTRACEREBRAL HAEMATOMAS*



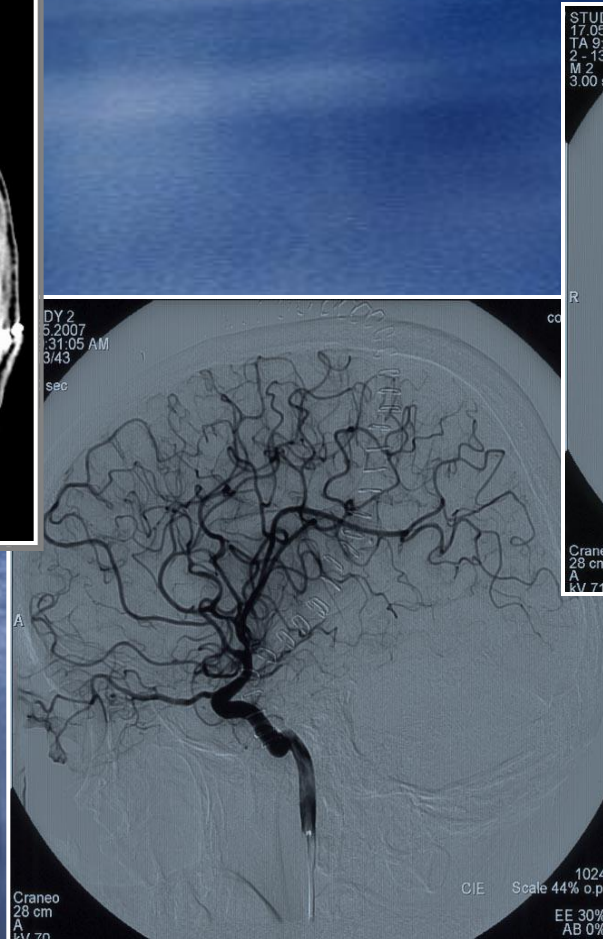
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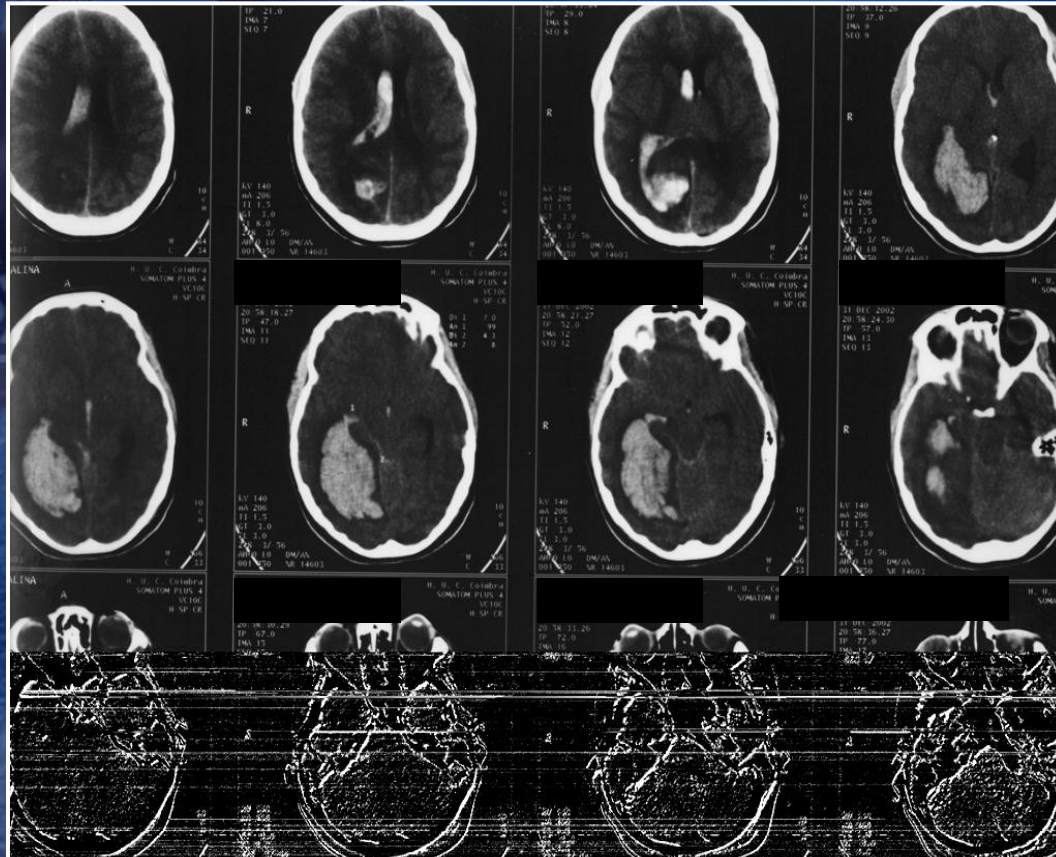
# *INTRACEREBRAL HAEMATOMAS*



# *INTRACEREBRAL HAEMATOMAS*

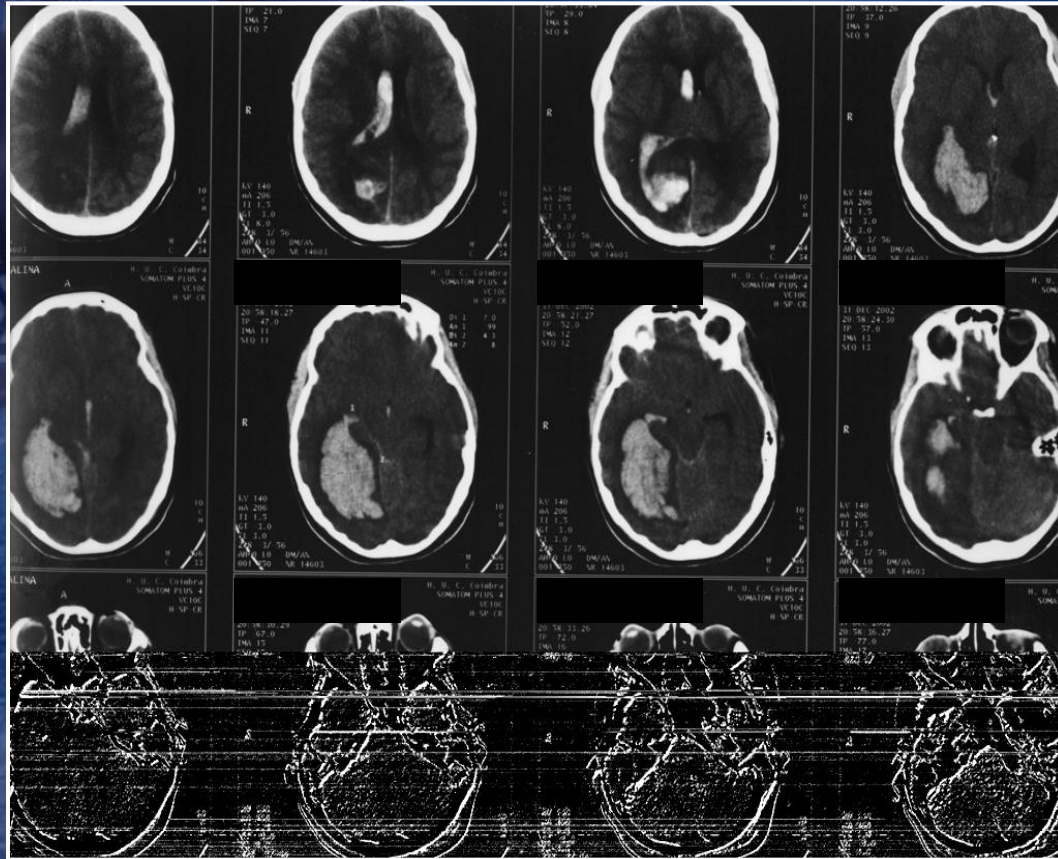


# *INTRACEREBRAL HAEMATOMAS*



Female, 26y  
30 week pregnancy  
GCS = 5  
right dilated pupil  
extension left  
bilateral Babinsky  
mannitol  
corticoids

# *INTRACEREBRAL HAEMATOMAS*



Neurology

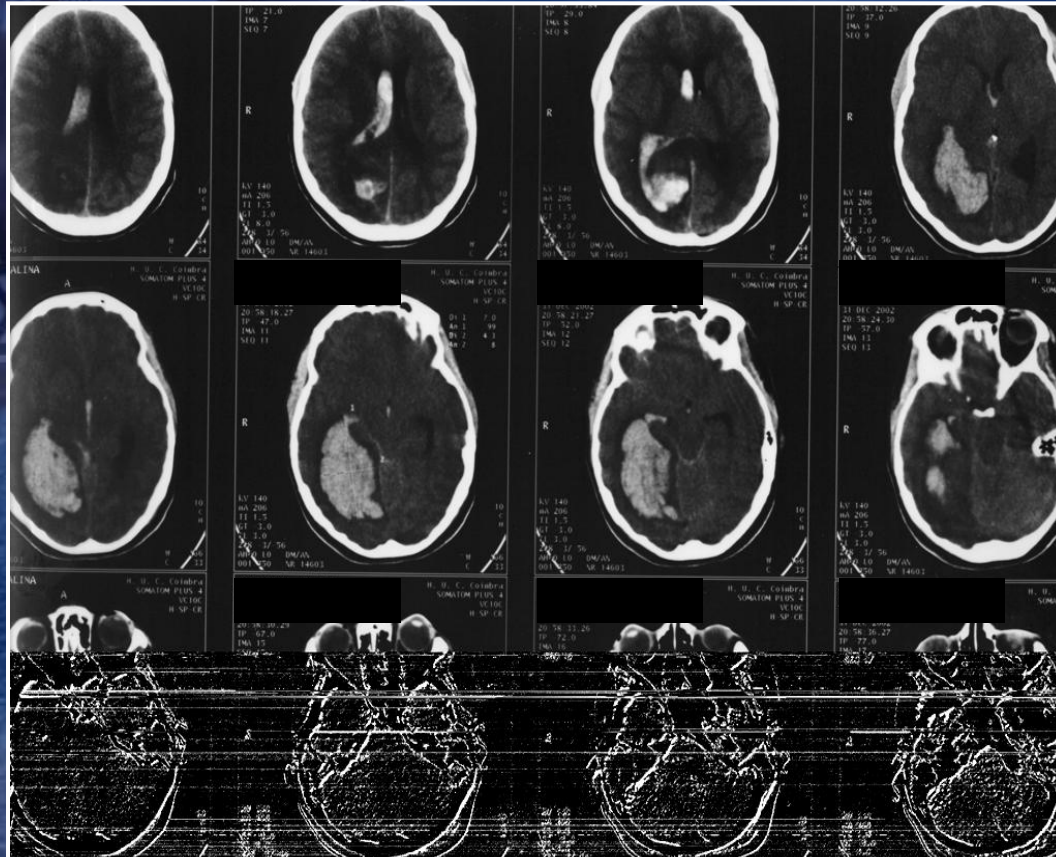
GCS = 7

right dilated pupil

bilateral withdrawal

Babinsky on the left

# *INTRACEREBRAL HAEMATOMAS*



Neurosurgery

GCS = 10

symmetrical pupils

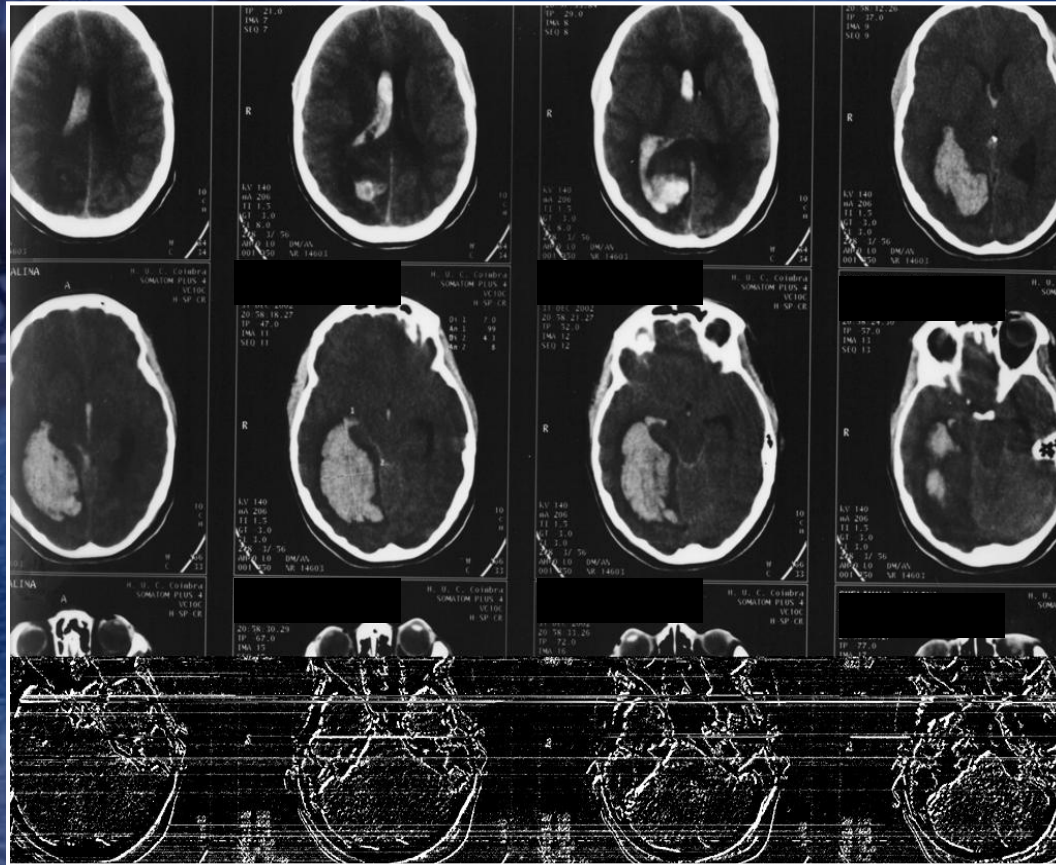
left hemiparesis 2

Babinsky on the left

baby ok



# *INTRACEREBRAL HAEMATOMAS*



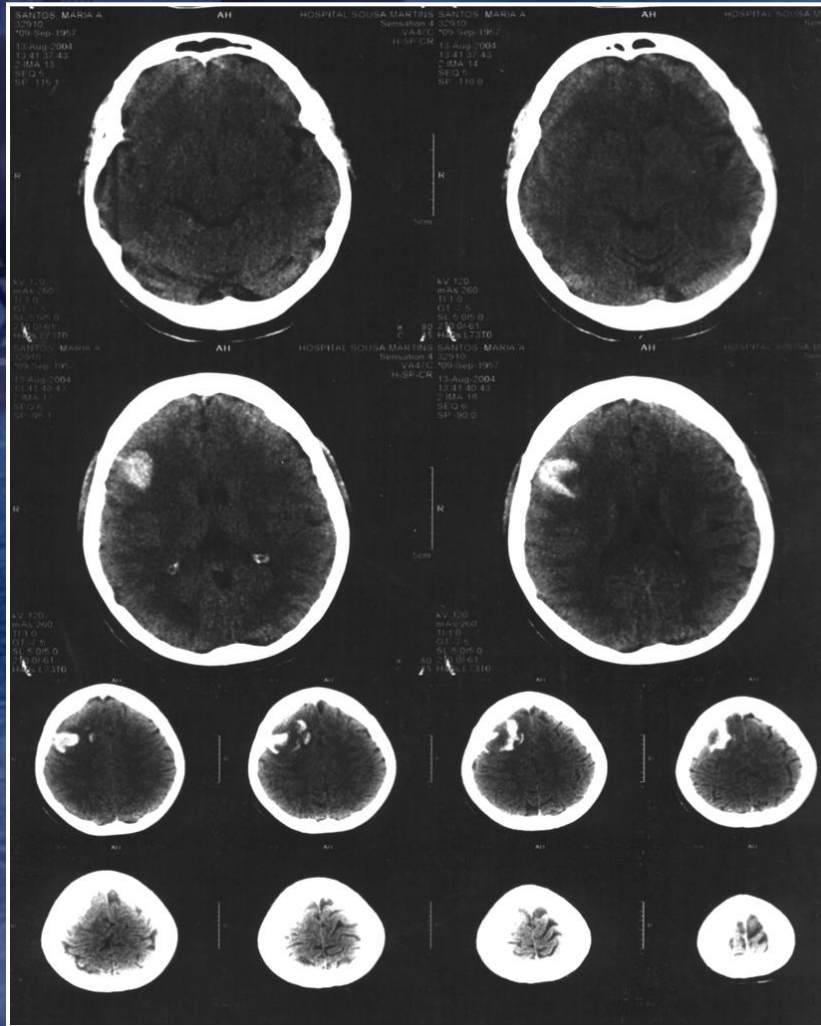
14h - GCS = 5

surgery

GCS = 3

surgical delivery

# *INTRACEREBRAL HAEMATOMAS*

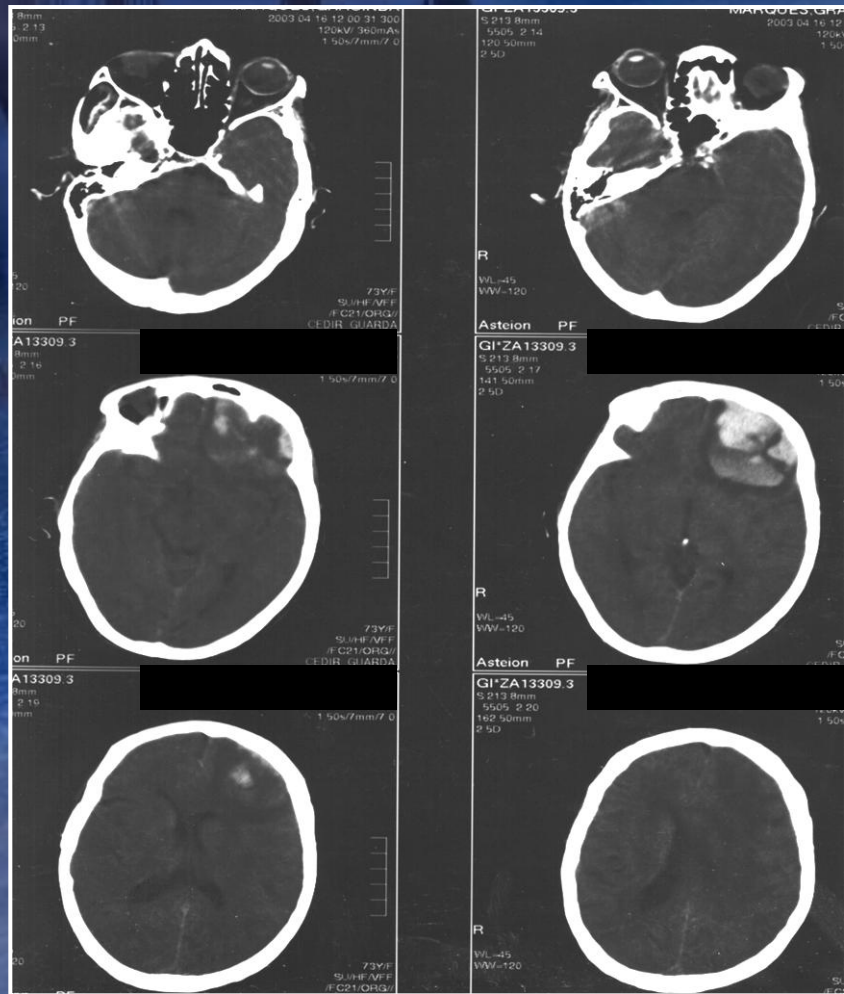


Female 47 y  
epilepsy (first episode)  
GCS = 15  
left hemiparesis  
left VI and VII  
left plantar extension

# *INTRACEREBRAL HAEMATOMAS*



# *INTRACEREBRAL HAEMATOMAS*



Female, 73 y

24h evolution

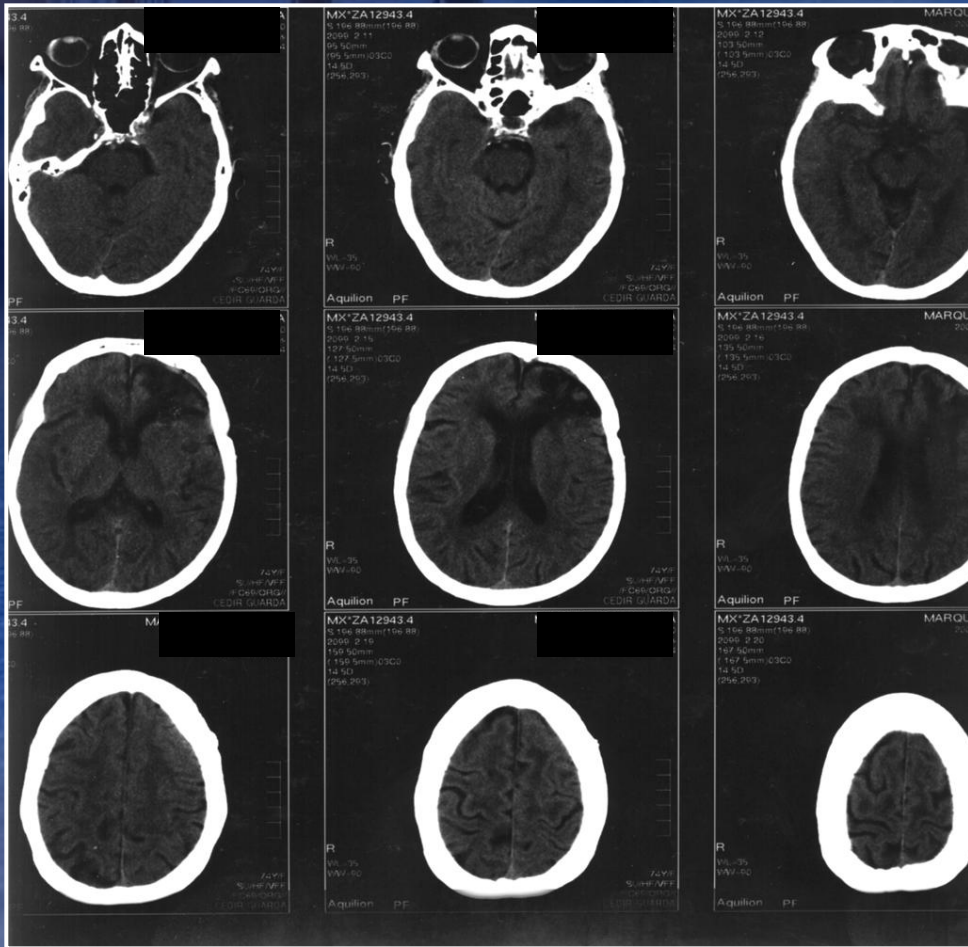
GCS = 12

aphasia

right hemiparesis 4

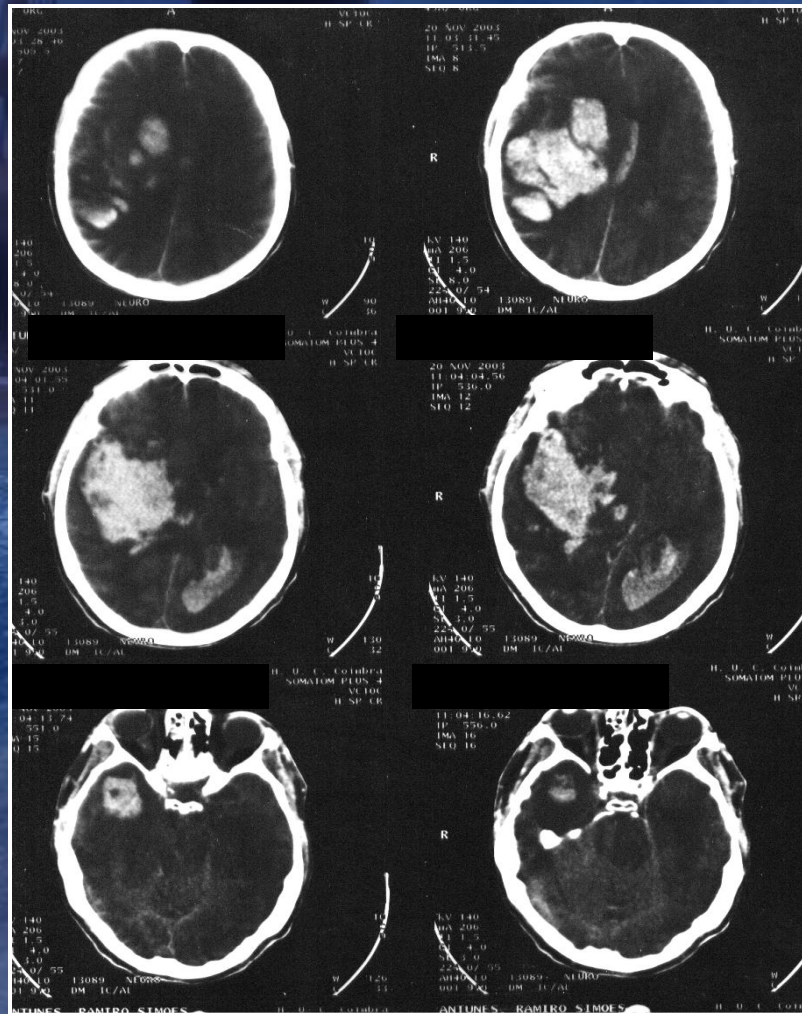
bilateral plantar extension

# *INTRACEREBRAL HAEMATOMAS*



GCS = 15  
recovered from aphasia  
and hemiparesis

# INTRACEREBRAL HAEMATOMAS



Male, 45 y  
alcoholic

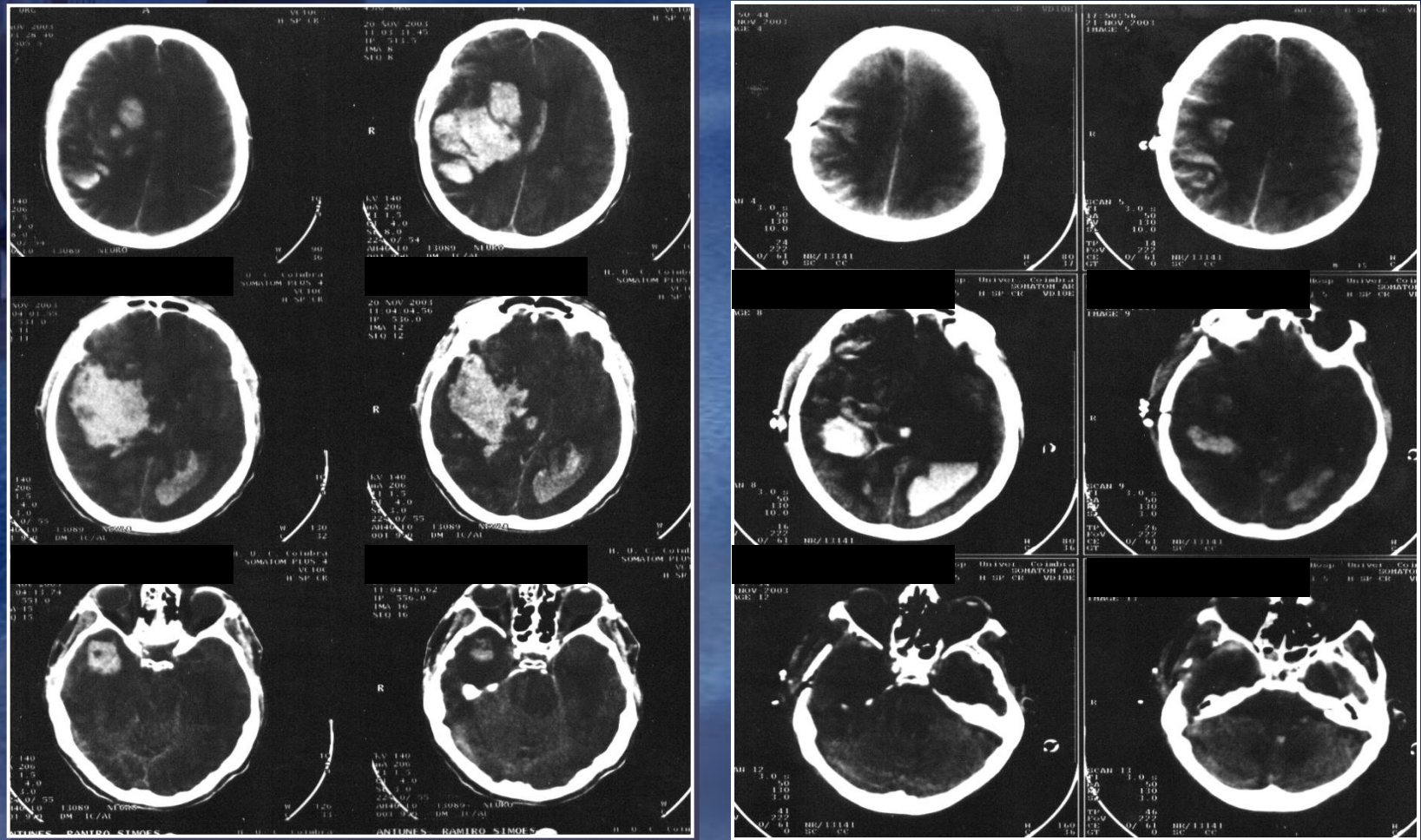
E1M4V1= 6 (13)

bilateral dilated pupils

corneal +

left hemiparesis

# *INTRACEREBRAL HAEMATOMAS*



# INTRACEREBRAL HAEMATOMAS

