Case report

A 82-year-old man was suffered from sudden onset spasm of extremities then he fell down to the ground with loss of consciousness. He recovered his consciousness 7-8 mins later but his conscious became lethargy. GCS:E3M6V5. Left side extremities mild weakness was showed at that time.

PE finding:

- Left side extremities mild weakness
- No traumatic wound
- No bloody otorrhea, nor rhinorrhea

Lab. data

CBC/DC : WBC :12.73

RBC : 3.83

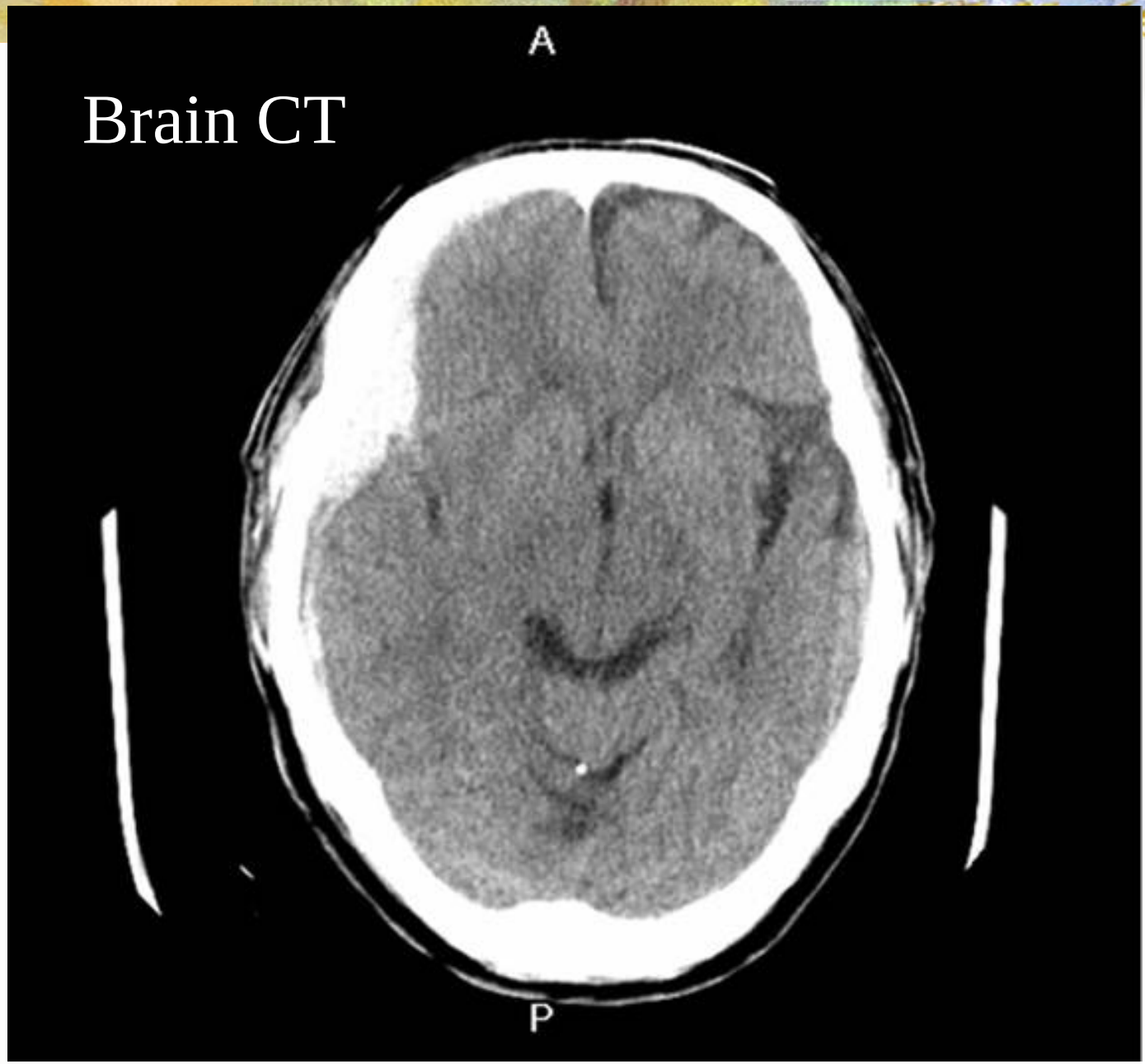
Hb : 10.9

生化 : non-specific finding

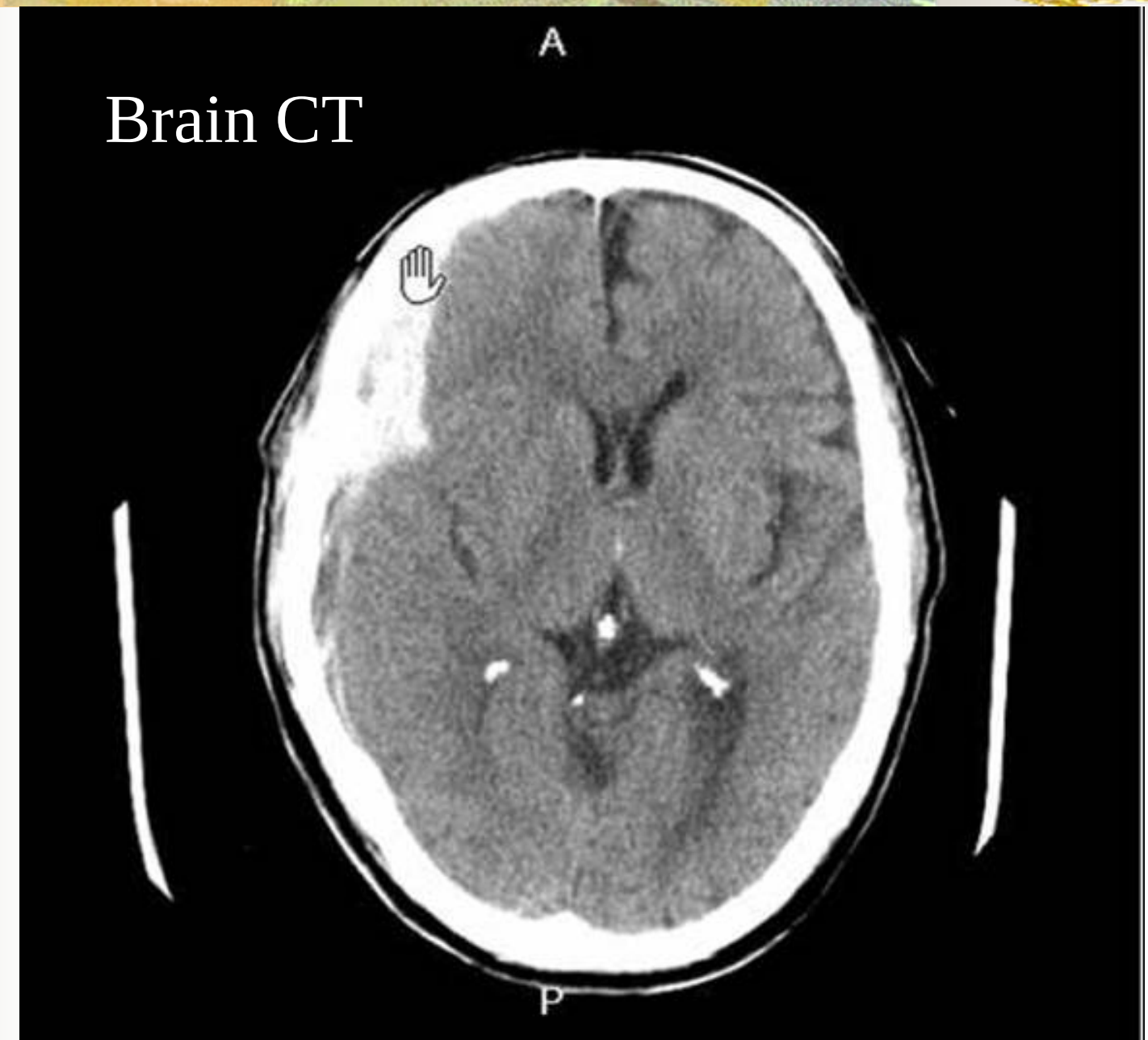
Image finding

- Brain CT : large acute subdural hematoma is located at entire right vault, compresses the underlying right cerebral parenchyma, result in midline shift and subfalcine herniation.

Brain CT



Brain CT



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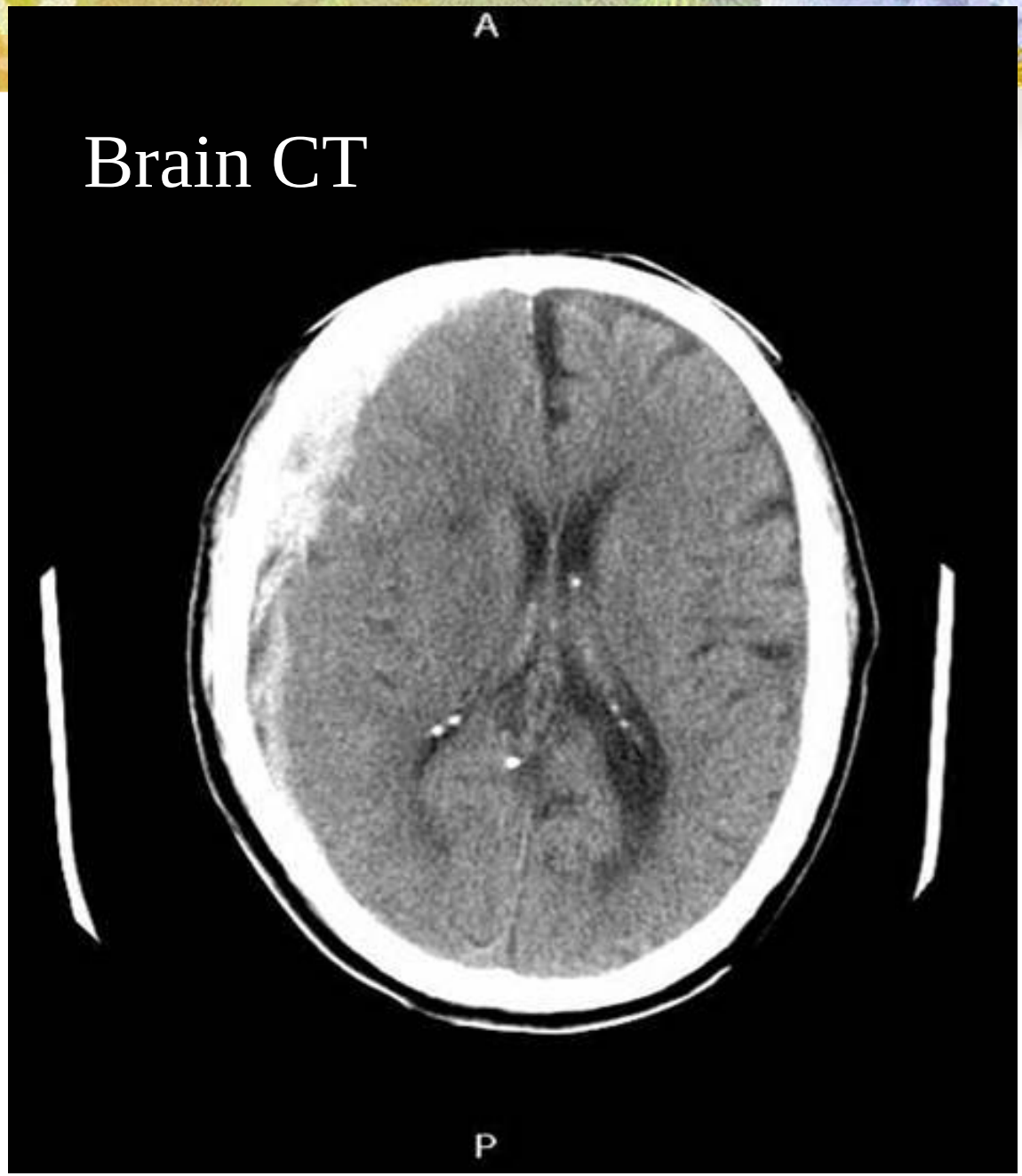

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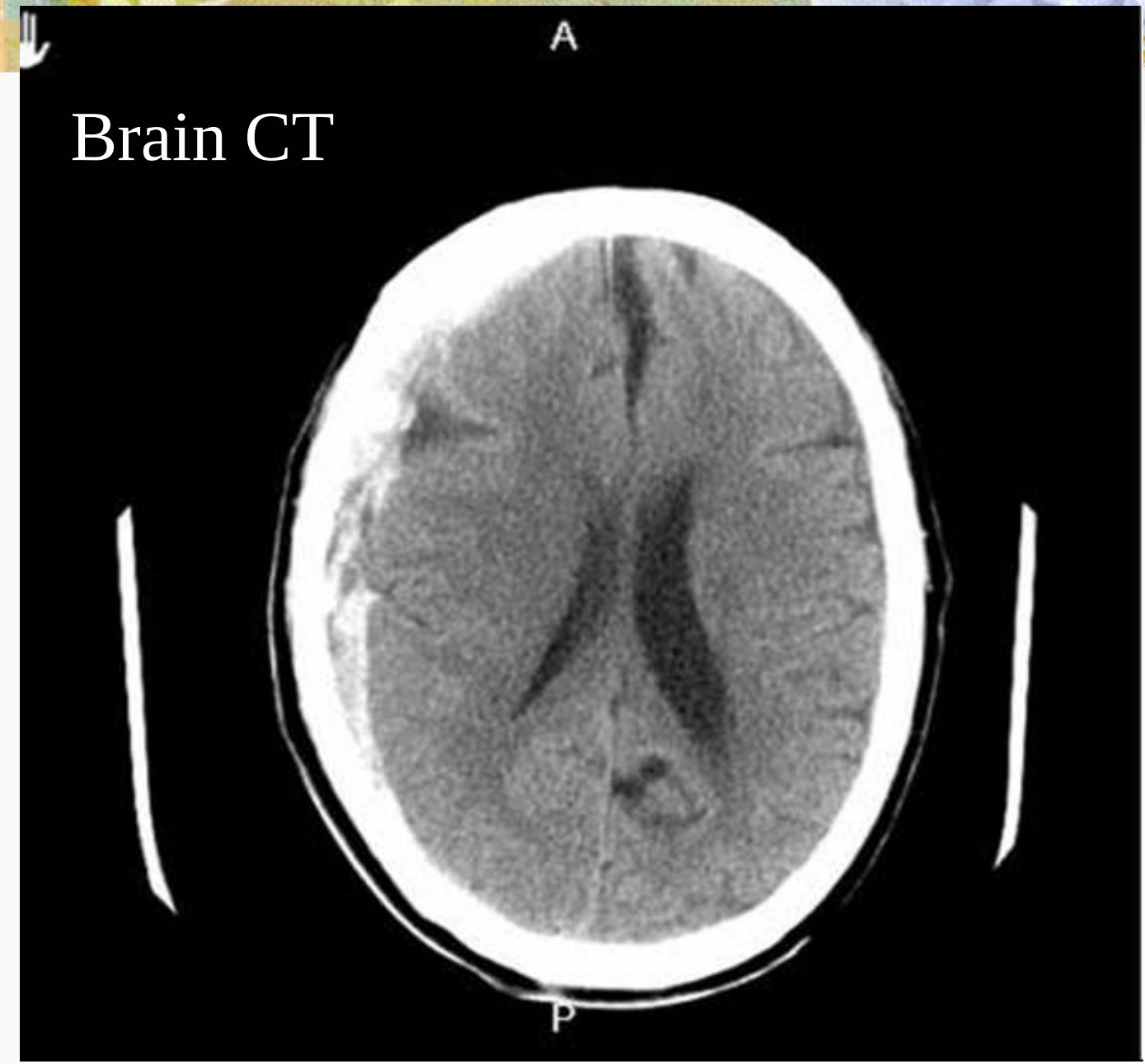
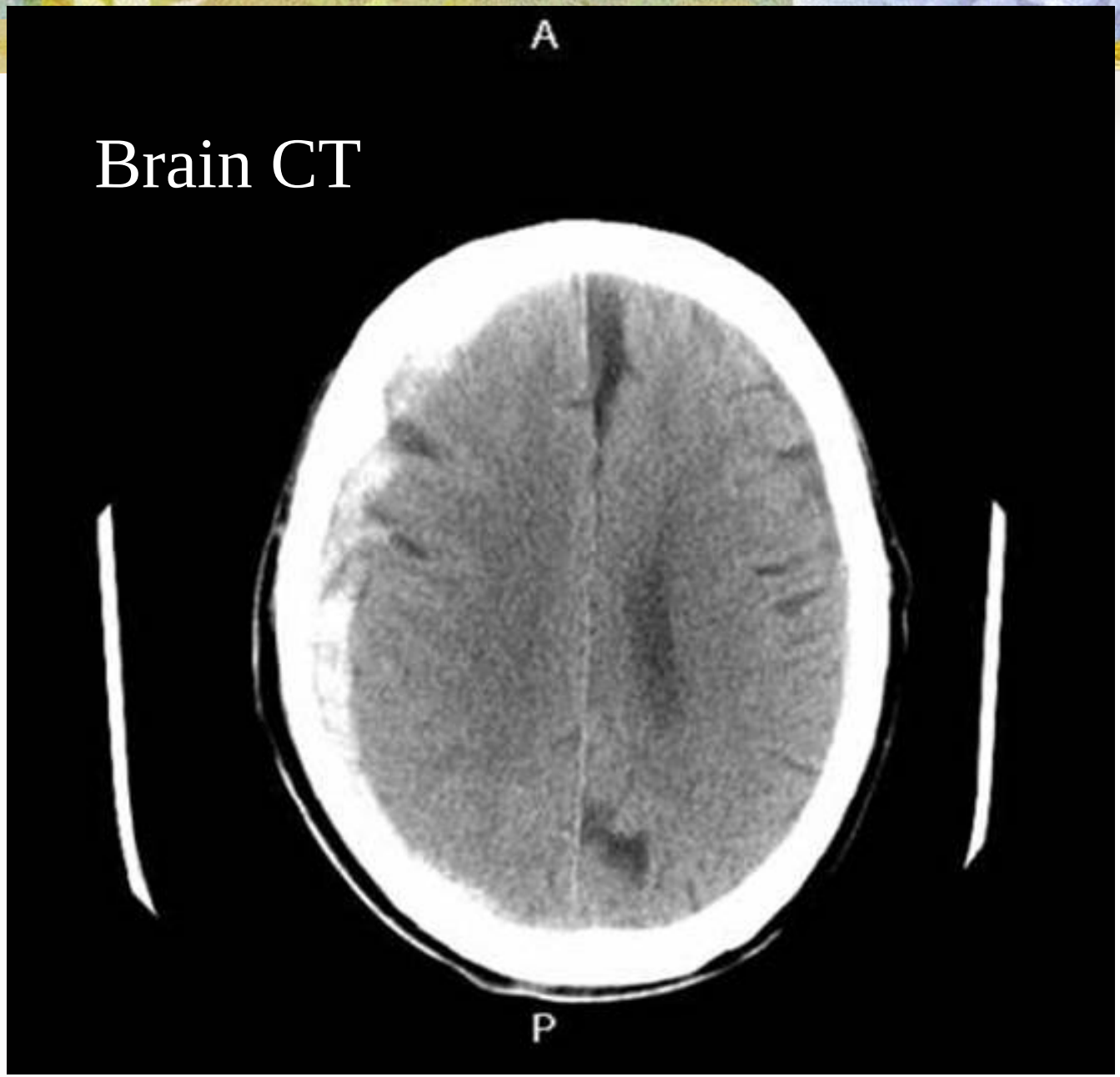


Brain CT



Non-enhanced brain CT scan

1. Large high-density crescent- shaped, acute subdural hematoma is located at entire right hemisphere, result in midline shift and subfalcine herniation.
2. Sub-arachniod hemorrhage fill the right sylvian fissure and along the inter-hemispheric fissure.

Pathology

Right subdural meninges : craniotomy

- Grossly : blood clots
- Microscopy : blood clots

Diagnosis Basis

- Large high-density crescent- shaped is located at entire right hemisphere, result in midline shift and subfalcine herniation.

=> acute subdural hematoma

Surgery and Autopsy

- Craniotomy with removal of SDH

- After surgery : his conscious recovered , but disorientation in time and placed his four limbs are good, no more seizure.

Differential diagnosis

- Acute subdural hematoma may be confused with acute epidural hematoma when the volume of the hematoma is large;

however, the transition of the anterior and posterior margin of an acute subdural hematoma is smooth when compared with an epidural hematoma; no enhancement of the dura is seen in the inner margin of the hematoma by administration of contrast medium.

Acute Subdural Hematoma

- SDH locates in the interhemispheric fissure

  extravasations of blood between the dural and arachnoidal membranes; acute and chronic forms occur; chronic hematomas may become encapsulated by neomembranes.

Acute SDH

- In the severe *acute* form, both blood and cerebrospinal fluid enter the space as a result of laceration of the brain and a tear in the arachnoid, adding subdural compression to the direct injury to the brain.

Chronic SDH

- In the chronic form, only blood effuses into the subdural space as a result of rupture of the bridging veins, usually due to closed head injury. The effusion is a gradual process resulting, weeks after the injury, in headache and progressive focal signs that reflect the location of the mass.

SDH risks include

- Head injury
- Very young or very old age
- Anticoagulant medication (blood thinners)
- Chronic alcohol use

SDH

- most frequently the result of a head injury.
- They can occur spontaneously in the elderly, but this is less common.
- A CT scan or MRI scan will be done to evaluate for the presence of a subdural hematoma
- with strong mass effect, uncal/transtentorial herniation and subfalcial herniation:

Signs and symptoms

- The evaluation should include a complete neurologic exam.
- Signs of weakness, numbness, inabilty to speak, slurred speech, or abnormal level of consciousness will prompt the physicial to order a brain imaging study.

Traumatic SDH

- Traumatic subdural hematomas are among the most lethal of all head injuries
- 15% of all head traumas
- Traumatic acute subdural hematomas carry the highest risk to the patient, with a mortality rate of greater than 50% in most studies

Complications

- Temporary of permanent weakness, numbness, difficulty speaking
- Seizures
- Brain herniation
- Persistent symptoms such as memory loss, dizziness, headache, anxiety, and difficulty concentrating

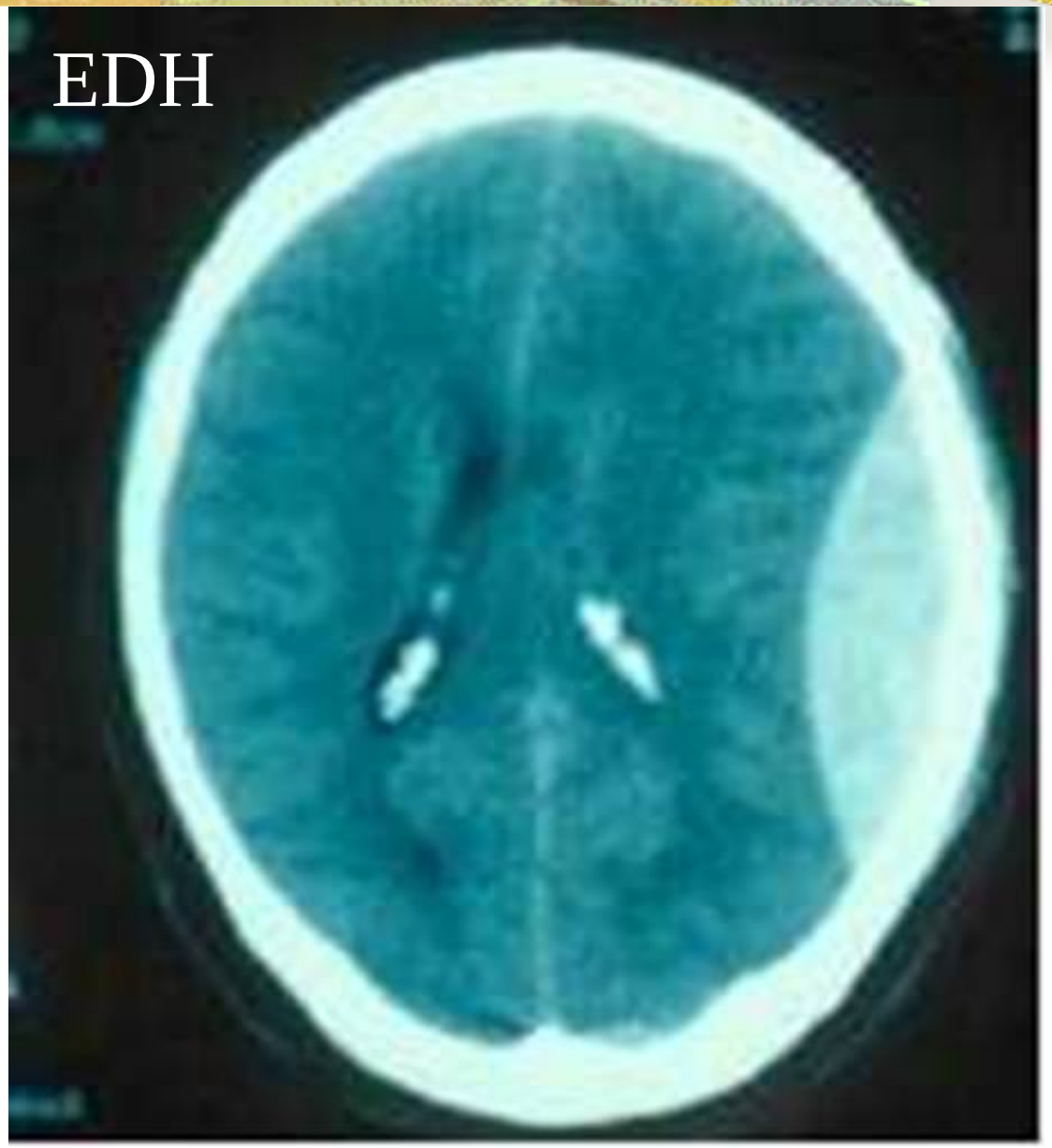
Discussion

Trauma of the head :

1. Acute epidural hematoma
2. Acute subdural haematoma
3. Sub-arachnoid hemorrhage
4. Intra-cerebral hemorrhage
5. brain contusion

Epidural haematoma

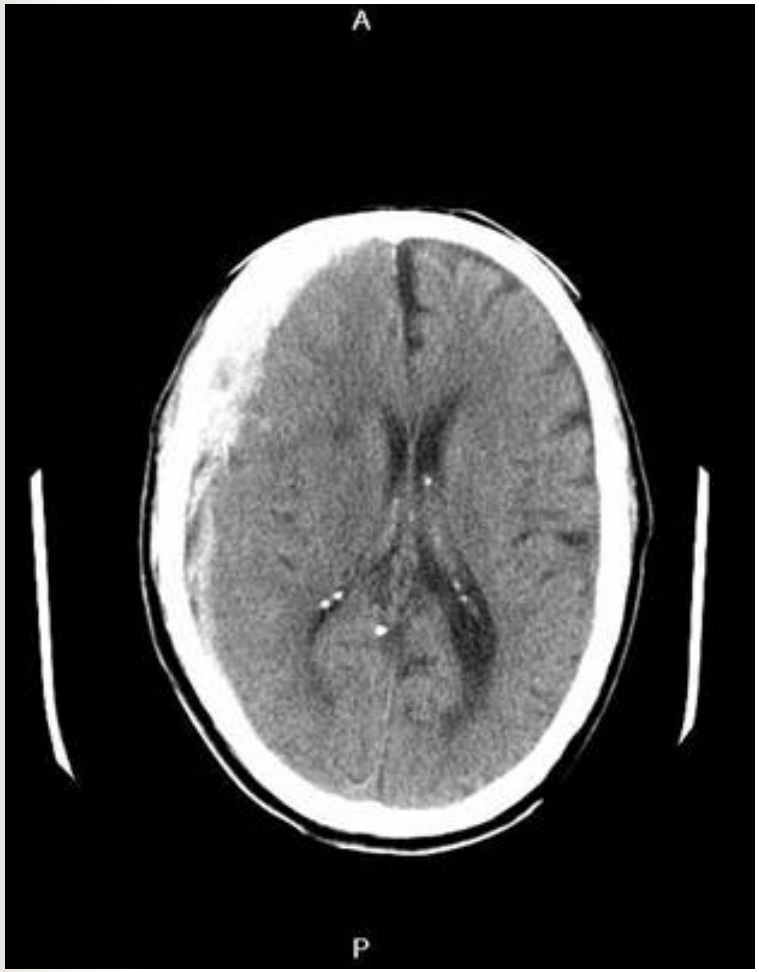
- A collection of blood that lies outside of the dura mater (between the dura mater and the skull)
- Biconvex high-density


EDH

Subdural haematoma

1. A collection of blood under the dura mater adjacent to the brain
2. Acute SDH is a surgical emergency

- Acute stage: high density
- 2-4weeks: iso-dense (with the brain tissue)
- 3-4weeks later: lower density
- Mix-density: may be a flesh bleeding into a chronic lesion



SDH

Subarachnoid hemorrhage

- A acute condition involving sudden hemorrhage into the space between the arachnoid membrane and the pia mater

Intracerebral hemorrhage

- From small arterioles within the brain
- The frontal and temporal lobes are classic sites
- High density

1. Traumatic ICH
2. Spontaneous ICH

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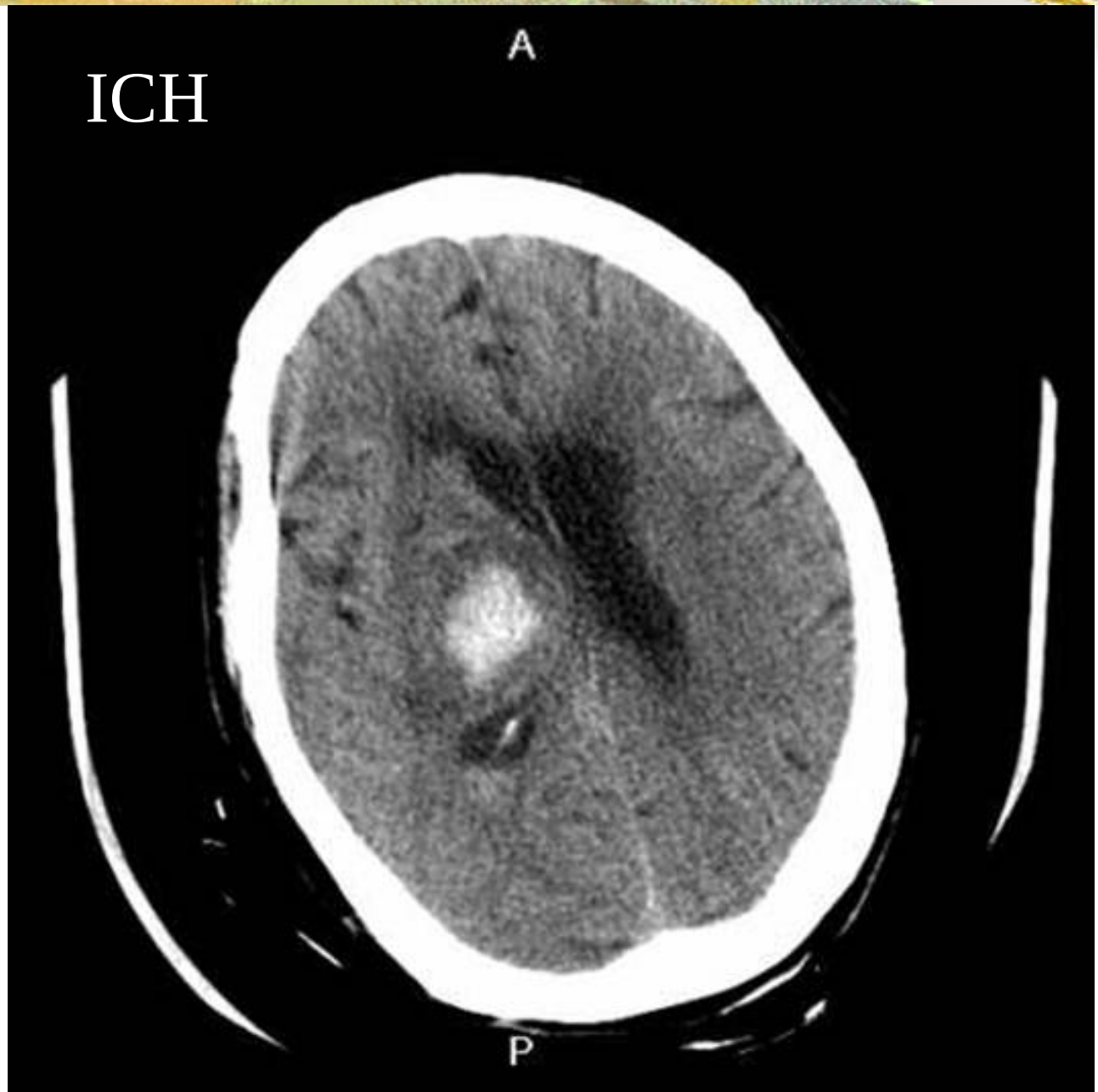

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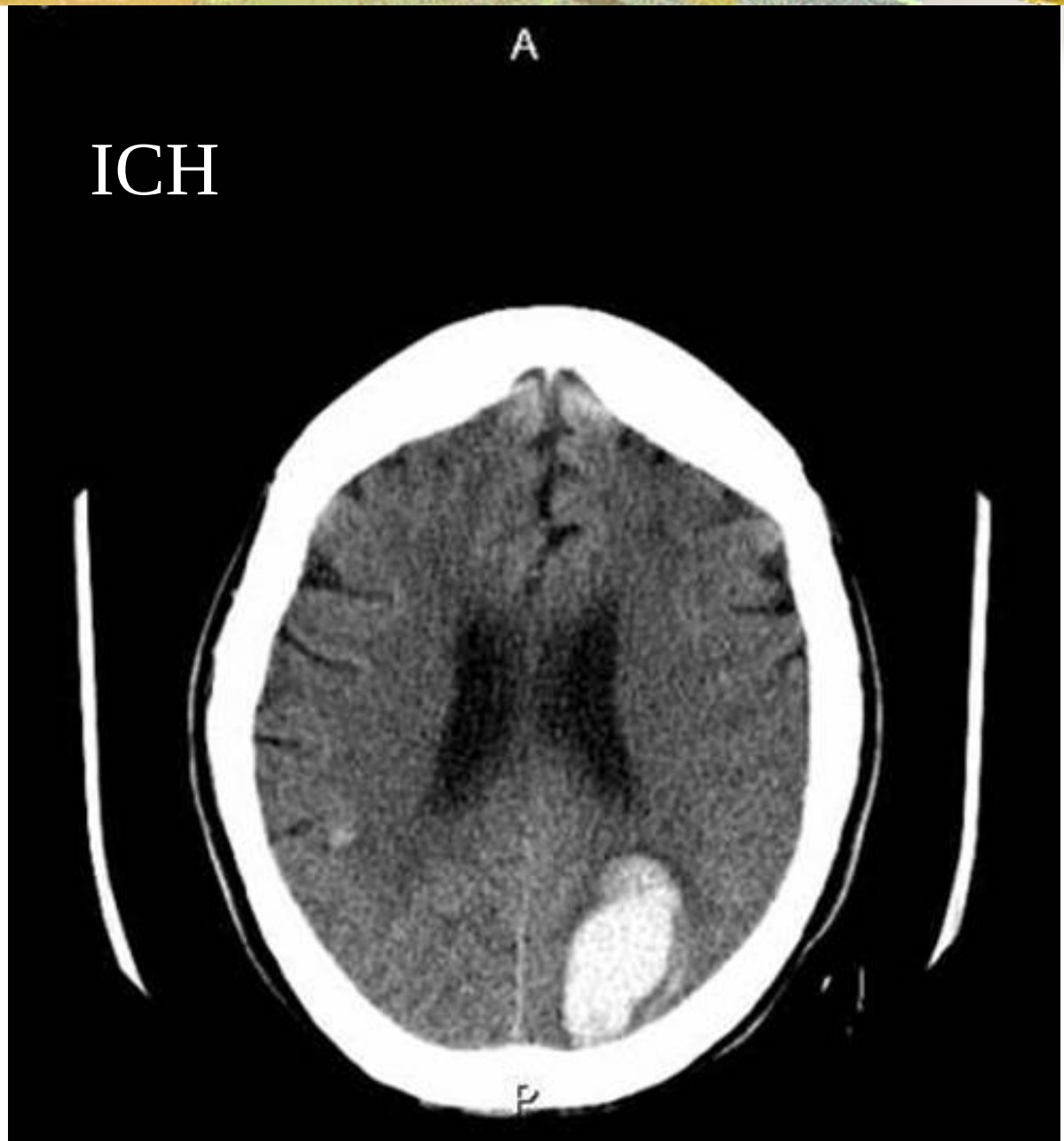
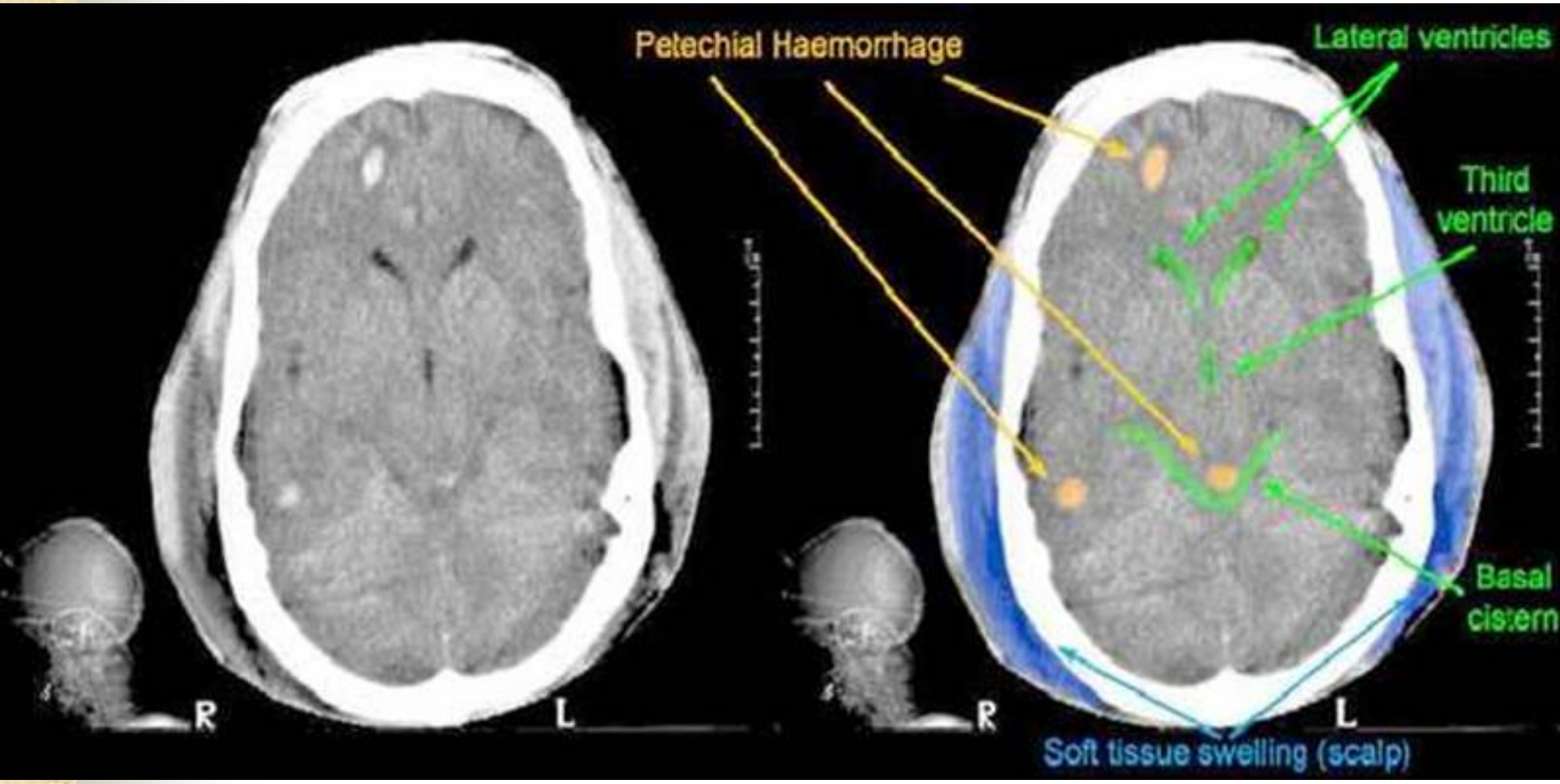


Brain contusion

- A head injury of sufficient force to bruise the brain. The bruising of the brain will often involve the surface of the brain and cause an extravasation of blood without rupture of the pia-arachnoid. Often associated with a concussion.

Brain contusion



Post-traumatic sequelae

1. Cerebral infarction
2. Cerebral atrophy
3. Hydrocephalus
4. Infection
5. CSF fistula

Reference

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2. Illustrated computer tomography. Edited by S. Takahashi. 1989
3. 2001 - 2003 Brain Injury.com
4. www.crash.lshtm.ac.uk/ctscanlarge.htm