

# Interesting Case Discussion:

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# Patient History

- ▶ A man, 35 years old
- ▶ Handedness: Right
- ▶ Hometown: Chumpon
- ▶ Education: Diploma from vocational college
- ▶ Occupation: Owner of construction company

## Chief Complain

- ▶ Frequent staring with transient memory loss

## Present Illness

- ▶ When he was 28 years old, his wife witnessed he had whole body stiffening and jerking in the middle of night. She took him to the regional hospital and he was admitted for 2 days. After that he was discharged without any anti-epileptic drugs.

## Present Illness (cont.)

- ▶ Later on he met the doctor at the clinic where he had got first AED. He had a good response to AED at the first 6 years of treatment, his seizure frequency around 3-4/year. Sometimes, his wife witnessed he had lip smacking during that event without awareness.
- ▶ His seizure frequency tended to increase in the year 2015, someday he had twice seizures a day. Totally 8-9 seizures a month. So he came to PNI for seizure control.

## Past History

- ▶ He had history of febrile convulsion once in a lifetime, but he had normal development and did not received AED
- ▶ No other family member had epilepsy
- ▶ No history of perinatal insults
- ▶ No other epilepsy risk factors

## Physical Examination

- ▶ He had no any neurological deficits.

# Seizure Frequency

- ▶ 8-9 times per month

## Anti-Epileptic Drugs

- ▶ Valproic acid → Hepatitis
- ▶ Carbamazepine 600 mg a day
- ▶ Levetiracetam 2000 mg a day
- ▶ Phenobarbital 120 mg a day

# Interictal EEG

- ▶ No Interictal Epileptiform Discharge (IED)

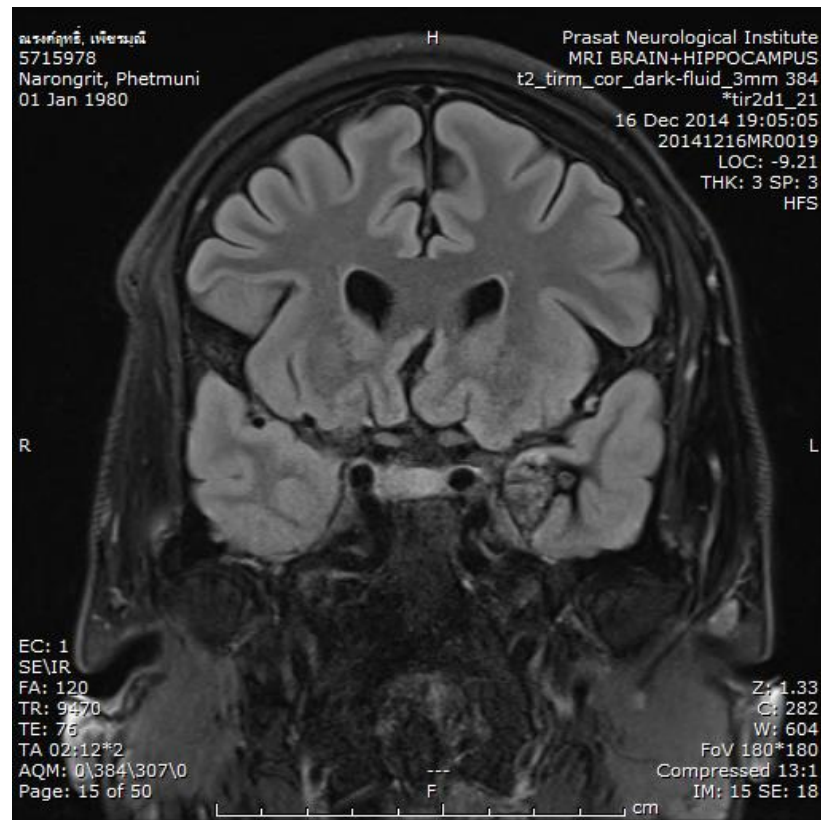
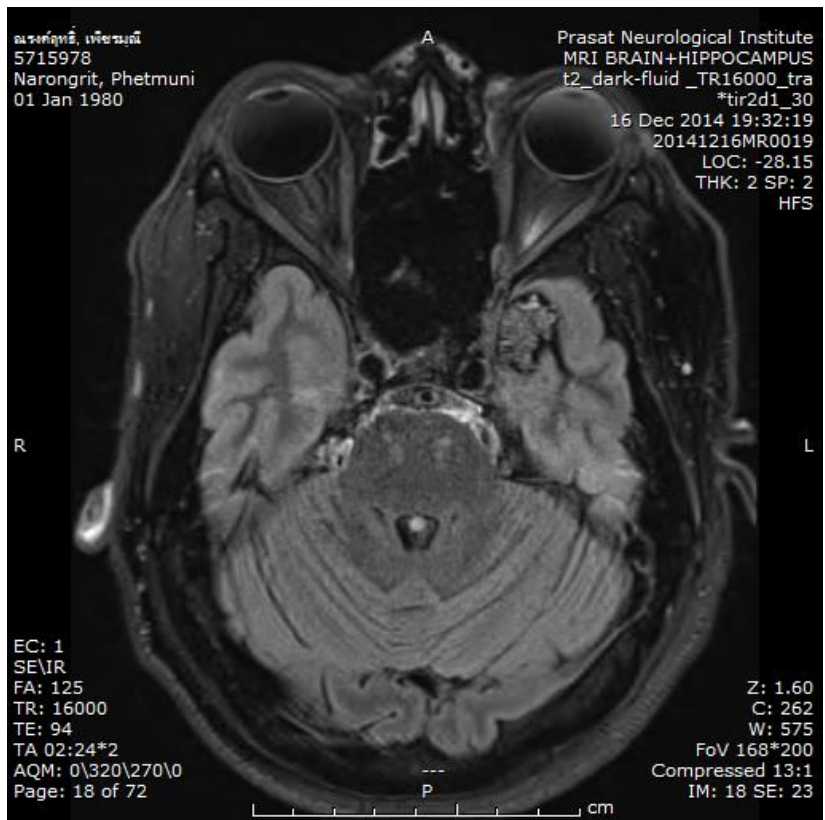
# Clinical Seizure and Ictal EEG

- ▶ There were 9 clinical and EEG seizures recorded.

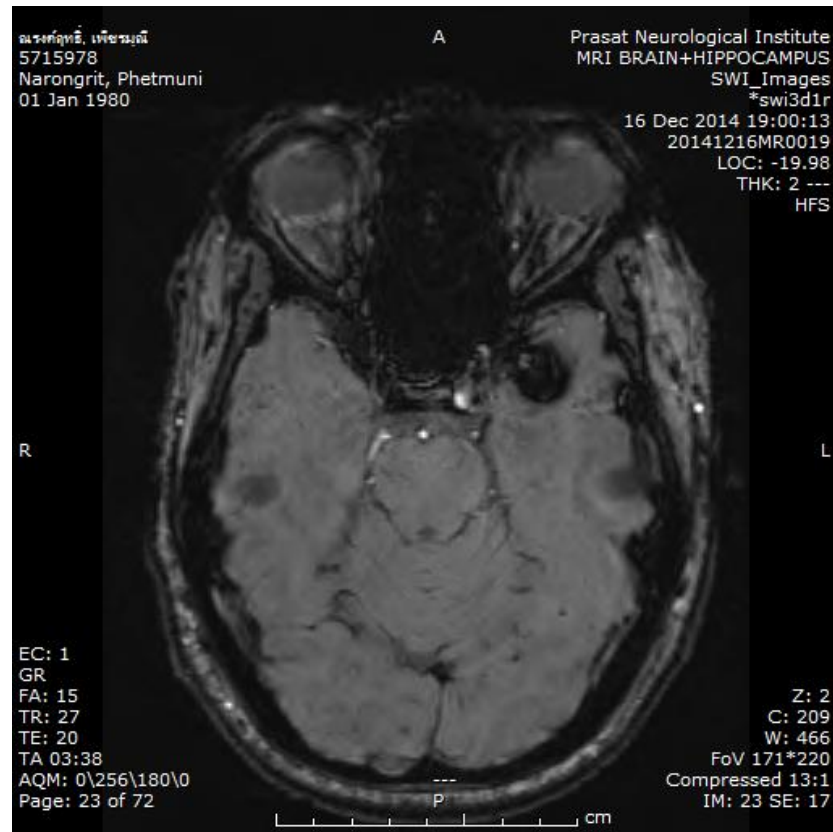
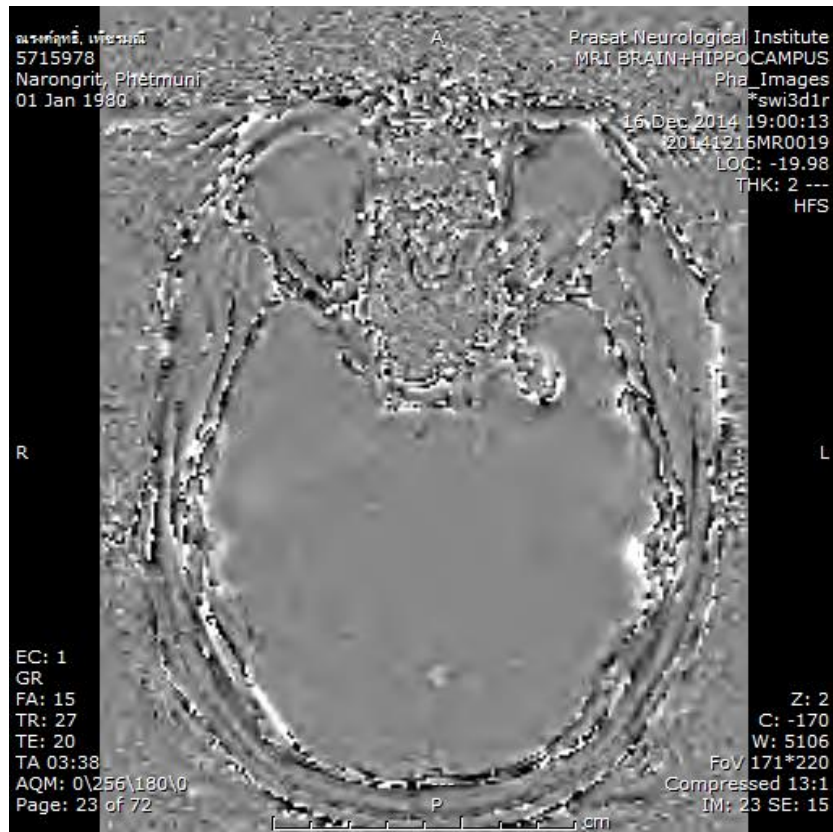
**EEG**



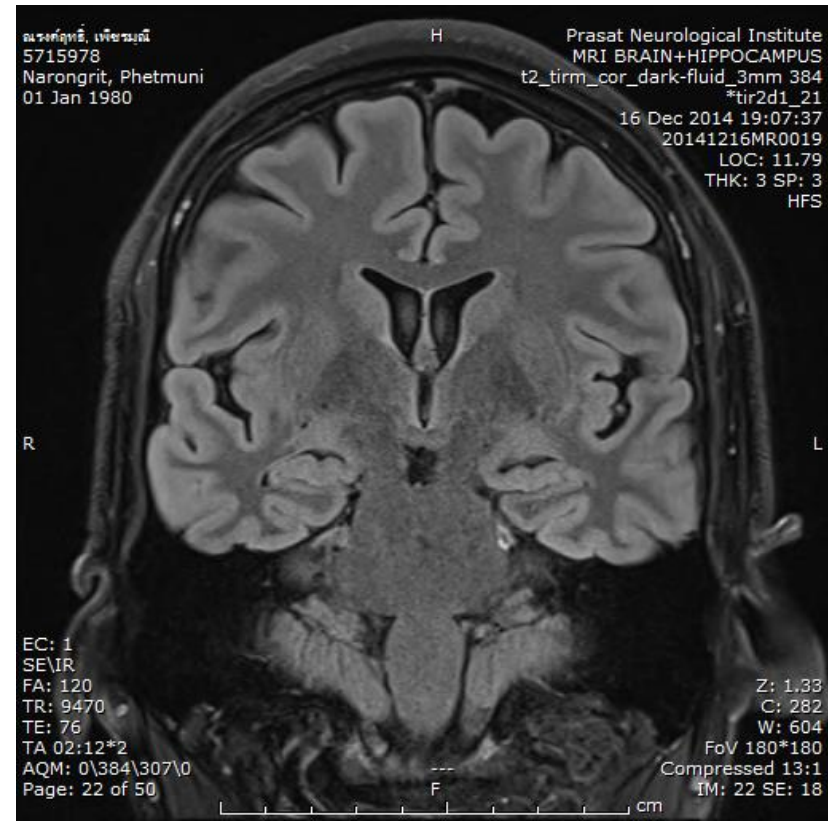
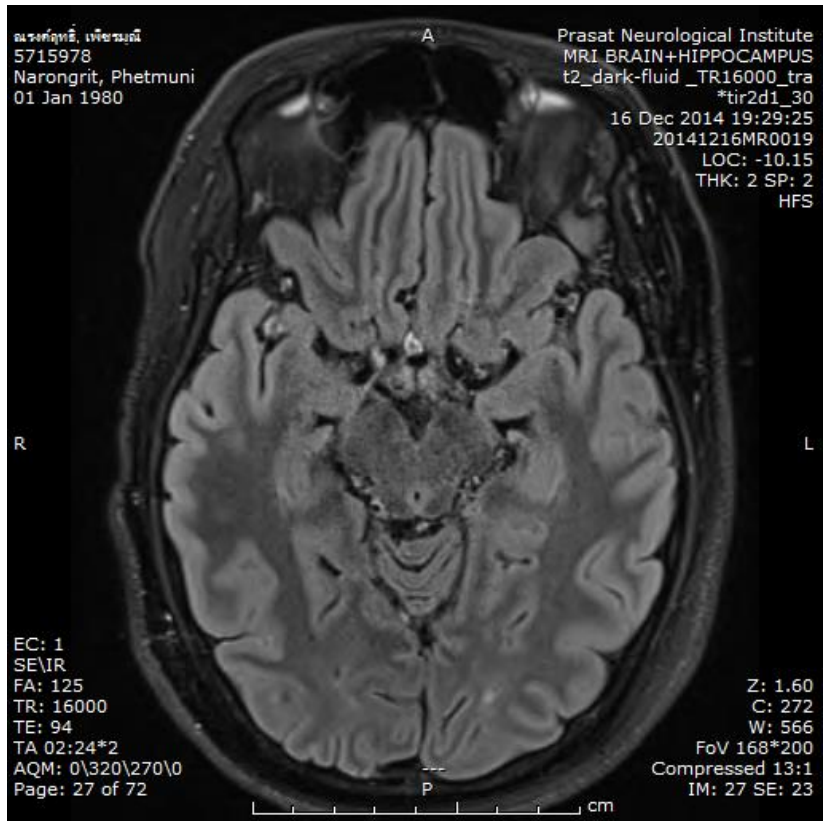
# MRI Brain



# MRI Brain



# MRI Brain



# Neuropsychological Test

## ▶ WAIS-IV test

▶ Verbal Comprehension	83	Low Average
▶ Perceptual Reasoning	107	Average
▶ Working Memory	89	Low Average
▶ Processing Speed	89	Low Average
▶ Full Scale IQ	91	Average

# Neuropsychological Test

## ▶ WMS-III test

▶ Auditory Immediate	83	Low Average
▶ Visual Immediate	94	Average
▶ Immediate Memory	89	Low Average
▶ Auditory Delayed	92	Average
▶ Visual Delayed	84	Low Average
▶ Auditory Recognition Delayed	90	Average
▶ General Memory	89	Low Average
▶ Working Memory	102	Average

# DISCUSSION



# Surgical Procedure

- ▶ Performed date: February, 27<sup>th</sup> 2015
  - ▶ Left temporal craniotomy with left temporal tip resection and lesionectomy of carvenoma

## Surgical Outcome

- ▶ Engel Class I at 2 years

**Gross Examination:**

A piece of pale brown brain tissue measures 4.8x3.5x1.3 cm. Serial sections show inhomogeneous gray white and brown cut surfaces with foci of hemorrhage. Representative tissue submitted in cassettes A-C = tissue with area of hemorrhage, and D-E = sampling of the remaining tissue.

**Microscopic Examination:**

Sections show a rather well-defined vascular lesion (Fig. 1). It comprises multiple closely-packed thin-walled vascular channels (Fig. 2). Some vessels are calcified. No tumor is seen.

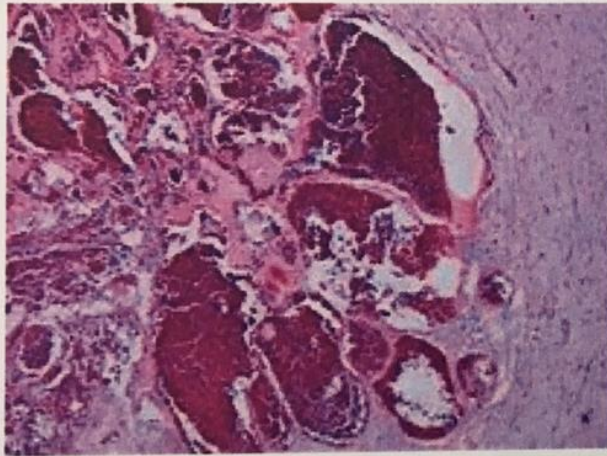


Fig. 1

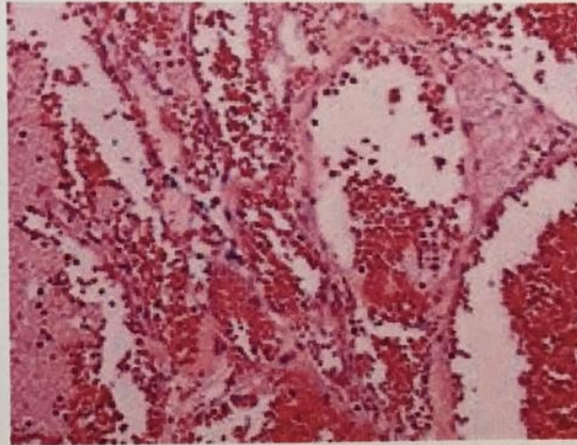


Fig. 2

**Pathological Diagnosis:**

Brain lesion, left temporal lobe:  
- Cavernous hemangioma.



The background features abstract, overlapping geometric shapes in various shades of pink and purple, creating a modern, layered effect. The shapes are primarily triangular and polygonal, with some areas appearing more translucent than others.

# **Management in Vascular Related Epilepsy: Cerebral Cavernous Malformation**

# Cerebral Cavernous Malformation

- ▶ Epileptic seizures are the most common first presentation of a cavernous angioma
- ▶ The cavernoma is often, but not always, the cause of the seizures

(Rosenow et al, ILAE task force, Epilepsia 2013)

# Cerebral Cavernous Malformation

- ▶ Established risk factors
  - ▶ Cavernomas in the grey matter of the brain
  - ▶ Cavernomas in the mesial temporal region of the brain
- ▶ Uncertain risk factors
  - ▶ Number of cavernomas
  - ▶ Size of cavernoma
  - ▶ Presence or absence of hemosiderin rim around the cavernoma

(Rosenow et al, ILAE task force, Epilepsia 2013)

# Cerebral Cavernous Malformation

- ▶ Incidental CCM or CCM presenting with intracranial hemorrhage or focal neurologic deficits
  - ▶ The 5-year seizure risks after presentation is **4%**  
(Josephson et al., 2011)
  - ▶ Prophylactic AED treatment is **not necessary**  
(Rosenow et al, ILAE task force, Epilepsia 2013)

# Cerebral Cavernous Malformation

- ▶ CCM patients presenting with new-onset single or multiple seizures
- ▶ The 5-year seizure risks after presentation is **94%**  
(Josephson et al., 2011)
- ▶ The diagnosis of definite or probable CRE can be made
  - ▶ **AED treatment is indicated**  
(Rosenow et al, ILAE task force, Epilepsia 2013)

# Cerebral Cavernous Malformation

- ▶ Patients with CCM can have paroxysmal clinical manifestations that have no causal relationship to the CCM
  - ▶ PNES
  - ▶ Unrelated generalized seizures

(Benbadis et al., 2000; Oehl et al., 2009)

# Cerebral Cavernous Malformation

- ▶ In accordance with current NICE guidelines 2012 (Cavernoma Alliance UK, 2012) recommend that
  - ▶ All **CCM** patients with a **first seizure** be urgently referred to a specialist to assess whether the patient's seizures are causally related to the CCM.

(Cavernoma Alliance UK, 2012)

# Cerebral Cavernous Malformation

- ▶ Early surgery may be considered in situations with
  - ▶ A high risk of bleeding
  - ▶ Patients unable to be compliant with AED treatment
  - ▶ Patients with a strong desire to eventually stop AED
- ▶ Initial conservative approach is favored in situation with
  - ▶ Patients with CCM adjacent to eloquent brain regions
  - ▶ Patients willing to carry the risk of bleeding





## Surgical versus conservative treatment in patients with cerebral cavernomas and non refractory epilepsy

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### ARTICLE INFO

#### Article history:

Received 18 April 2012

Received in revised form 1 September 2012

Accepted 3 September 2012

#### Keywords:

Seizures

Cerebral cavernomas

Surgery

Medical treatment

### ABSTRACT

**Purpose:** The optimal therapy of patients with cerebral cavernoma (CCs) and new onset epilepsy, sporadic seizures, or non well established refractory epilepsy is still not clear. The aim of this study was to compare the incidence of seizures in patients with CCs both operated and non operated, in order to obtain more information on the correct management of these patients.

**Materials and methods:** We studied retrospectively 43 patients with non refractory epilepsy secondary to CCs. Twenty-six of them (60.5%) underwent surgery and made up the surgical group, and 17 patients were treated medically and constituted the medical group. Seizure frequency and other clinical variables were compared between both groups.

**Results:** At two years, out of the 26 operated patients, 19 (73%) remained seizure free, 4 (15%) had less

**Conclusion:** Surgical treatment of patients with non refractory epilepsy due to CCs did not significantly reduce the likelihood of seizures when compared to medical treatment. It must also be considered that surgery carries serious risks. A prospective and randomized study must be carried out to further clarify our findings.

# Cerebral Cavernous Malformation

- ▶ Because of the risk of bleeding and the negative correlation between epilepsy duration and postoperative seizure outcome
  - ▶ Not necessary to wait until the refractory to AED
  - ▶ Failure of a single AED trial is sufficient to do pre-surgical evaluation
- ▶ Selected patients with rare seizures but these information consistent with the location of the CCM may be referred to surgery even when no seizures are recorded during video-EEG monitoring
  - ▶ Clinical seizure symptomatology
  - ▶ Interictal spikes

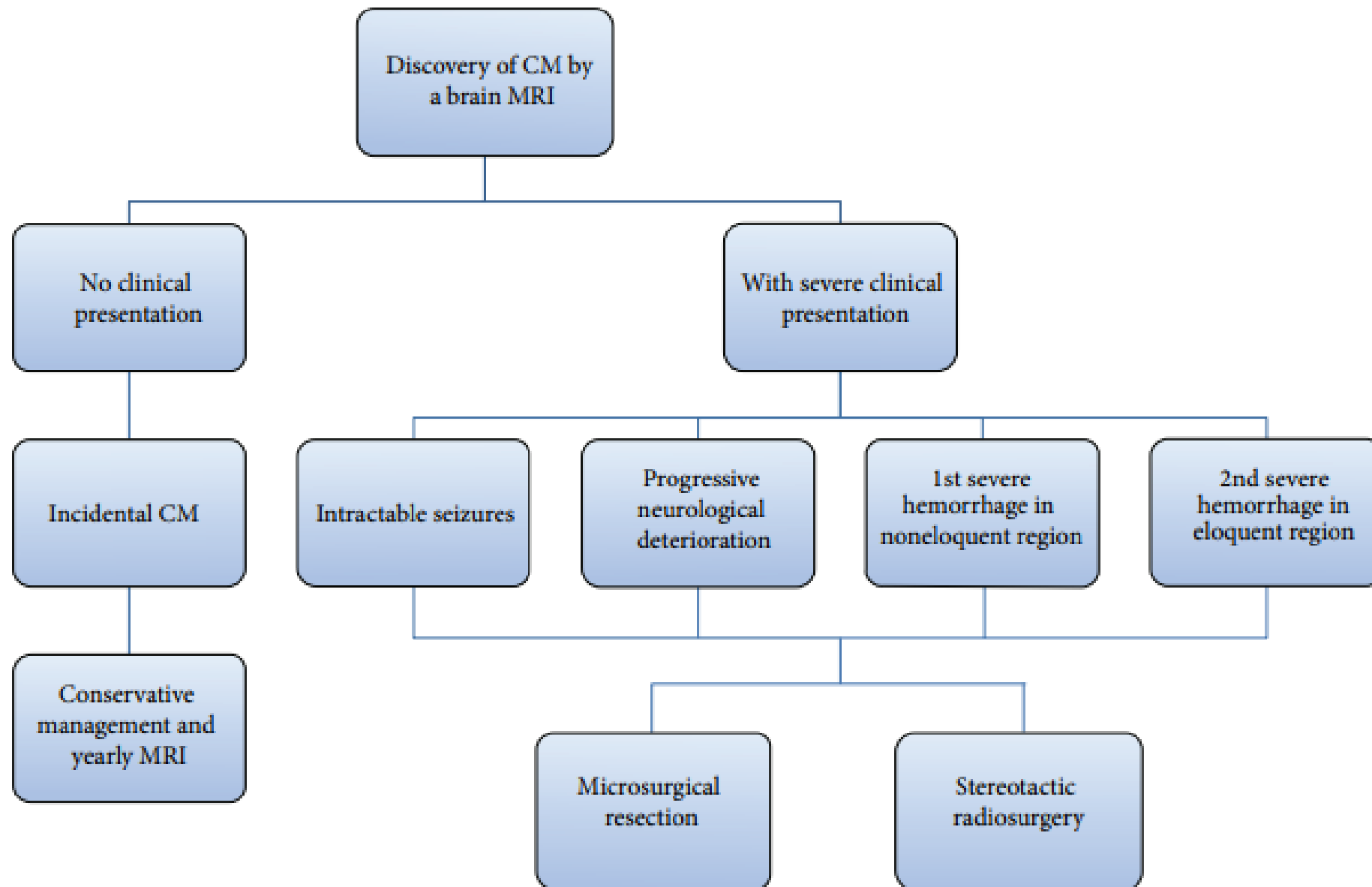
# Overall Seizure Outcome (Post-surgical)

- ▶ Baumann et al. (2007) (N 168)
  - ▶ After 1 year: Engel class I outcome **70%** (IA 48%)
- ▶ Kim et al., 1997
  - ▶ After 2 years: Seizure freedom **68%**
  - ▶ After 3 years: Seizure freedom **65%**
- ▶ Casazza et al., 1996; Cappabianca et al., 1997
  - ▶ The seizure freedom rate report **82-84%**
- ▶ Yeon et al., 2009
  - ▶ Stable seizure outcome after a 2 year follow-up

# Cerebral Cavernous Malformation

- ▶ Size of lesion A diameter of  $<1.5$  cm is associated with
  - ▶ Better seizure control during the first 2 years
  - ▶ But no differences arise at longer follow-up

(Baumann et al., 2007; Yeon et al., 2009)



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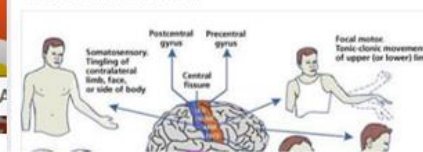
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เมื่อเจดคนกำลังชัก ต้องทำอย่างไร ฉบับการ์ตูน  
ปล. ถ้านึกอะไรไม่ออกจริงๆ ให้ยื่นอุ้งแขนและคอกระโหลกไปตลอดทั้งตัวจากหลังแล้วล้ม  
ไม่ว่าเป็นห้องอะไรก็อย่ากลัวที่จะล้มหน้าท้องลง ซึ่งอันตรายกว่าประโยชน์  
ครับ



Epilepsy Center PNI shared their photo.  
May 15 at 9:08pm · 🌐

คุณมี "ออร์" หรือเคยมี "ออร์" ไหม  
ในเก๊ากันบ้างหรือยังครับ ลองดูอย่างนี้



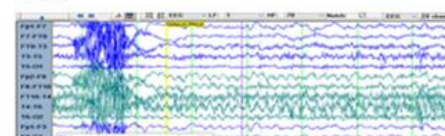
ท่านที่ซ่อมทำบุญวันเกิด ขอฝากกองทุนโรคลม  
โอกาสได้ช่วยตัวเองและเป็นการของคนอื่น  
ชีวิตจะดีขึ้น บุญจะทำความไม่มีโรคลม



Epilepsy Center PNI  
34 mins · 🌐

"โรคลมชัก รักษาได้ด้วยยาแล้ว"

นอกจากการรักษาด้วยยาแล้ว การผ่าตัดก็เป็นวิธีการรักษาอย่างหนึ่งในการที่ผู้ป่วยต้องได้รับการรักษาด้วยยา และเป็นโรคลมชักชนิดที่เกิดขึ้นเฉพาะที่ ซึ่งขึ้นตอนในการตรวจประเมินหลายอย่าง เพื่อวินิจฉัยให้ได้ว่า หากผ่าตัดส่วนไหนของสมองดีแล้วผู้ป่วยจะหายจากโรคลมชัก และในมีความรู้เรื่องการดูแลภาวะแทรกซ้อนใดๆ โปรดติดตามเรื่องเกี่ยวกับการผ่าตัดในลำดับต่อไป



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April 15 · 🌐

"ถ้าชัก อย่าเพิ่งท้อ ถ้าจะท้อ ให้รีบบอกหมอ"

ครอบครัวสุขสันต์วันสงกรานต์ครับ

"การวางแผนครอบครัว" เป็นสิ่งจำเป็นมาก โดยเฉพาะผู้  
ลมชัก ควรคุมกำเนิดจนกว่าจะควบคุมอาการชักได้อย่าง  
ว่าจะไม่ชักตลอดระยะเวลาการตั้งครรภ์ เป็นอัตราสูงถึง 1  
รวมถึงการวางแผนการใช้ยาคุมเพื่อลดความพิการทาง  
ทารกในครรภ์ หรือวางแผนเพื่อผ่าตัดรักษาให้หายจากอ  
ดวงใจ พ่อแม่จึงควรวางแผนให้ดีที่สุด ป้องกันก่อนดีกว่า



Epilepsy Center PNI  
May 4 at 10:33pm · 🌐

เป็นโรคลมชัก ดื่มแอลกอฮอล์ได้หรือไม่ มีการตีพิมพ์การศึกษาตั้งแต่ปี 1983 (แอลกอฮอล์ 1 ขวด) การดื่มที่ถือว่าปลอดภัยนั้นหาได้ยากขึ้นคือ  
ดื่มไม่เกิน 3 standard units ต่อวัน ไม่เกิน 3 วันต่อสัปดาห์  
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