

# Neurological aspects of Eclampsia & their management

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# General Neurological Complications in Pregnancy 1

- *HKMJ 1997; 3:400-8* from 1985-1994 all deliveries (49 368). One hundred and sixty-one patients had various neurological diagnoses, an incidence=326 per 100 000 pregnancies.
- 19/2969 gestational ↑ BP had Eclampsia; 1 perinatal & 1 neonatal death
- Of 7 ICH; 2/7 prior SAH; 2/7 known Rh valve disease; 3/7 2<sup>nd</sup> trimester from unknown aneurysm/AVM

**Table 1. Incidence of various neurological conditions found in pregnant women attending the Tsan Yuk and Queen Mary hospitals from 1 January 1985 through 31 December 1994**

Condition	No.	Incidence per 100 000 pregnancies
Epilepsy	102	207
Eclampsia	19	39
Facial nerve palsy	12	24
Pituitary tumour	10	20
Cerebrovascular disorders	7	14
Myasthenia gravis	5	10
Multiple sclerosis	4	8
Non-pituitary intracranial tumour	2	4
<b>Total</b>	<b>161</b>	<b>326</b>

# General Neurological Complications in Pregnancy 2.....Eclampsia

KK Hospital 1990-1993 *Singapore Med J. 1995 Oct;36(5):505-9.*

- Eclampsia in 27/59,599 deliveries (45.3 per 100,000 deliveries).
- 2/3rds were booked & 55.6% had their first seizure despite being in hospital
- No maternal mortality but significant morbidity was present in 8 patients (29.6%)-Residual neurological deficits in 3 patients (12%)

# Overview of Neurological aspects of Pre-eclampsia/Eclampsia

- Seizures
- Prolonged Altered Consciousness
- Focal Neurological Deficit
- Simultanagnosia

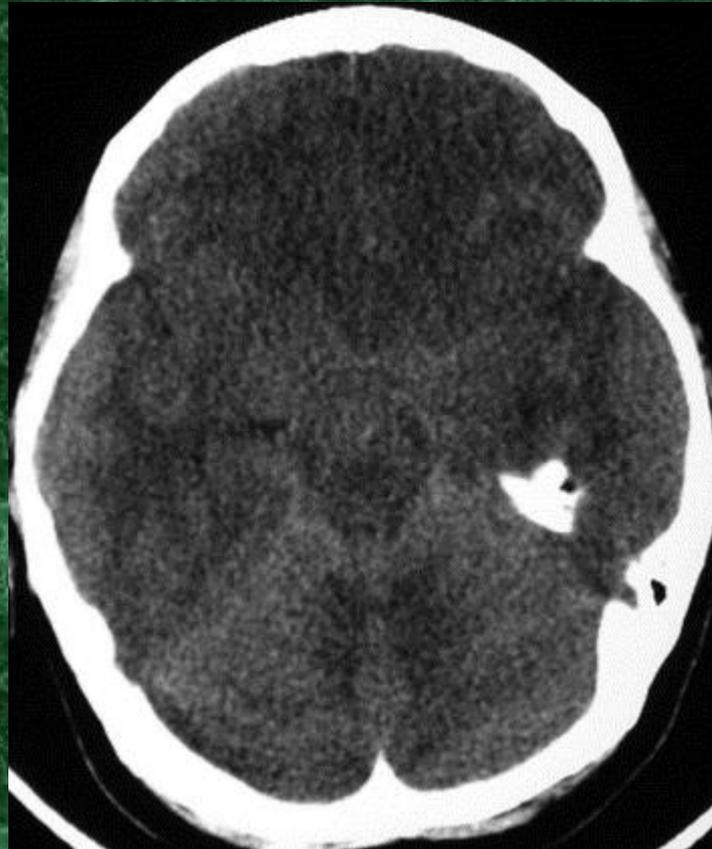
# Seizures & Immediate control

- CURRENT PROTOCOL-Mg controls seizures in >95%
- Patient should be evaluated qh to assure that deep tendon reflexes are present, respirations are at least 12 breaths per min, and urine output is at least 100 mL during the preceding 4 hours...continue for 12-24 h after delivery and stop when the hypertension resolves and patient has shown adequate diuresis.
- Second line: **If seizures continue despite a further bolus of magnesium sulphate, “options then include diazepam (10 mg) or thiopentone (50 mg IV). Intubation may become necessary in such women to protect the airway and ensure adequate oxygenation. Further seizures should be managed by intermittent positive pressure ventilation and muscle relaxation.” [Management of Eclampsia. RCOG Guidelines]**

# Altered Consciousness

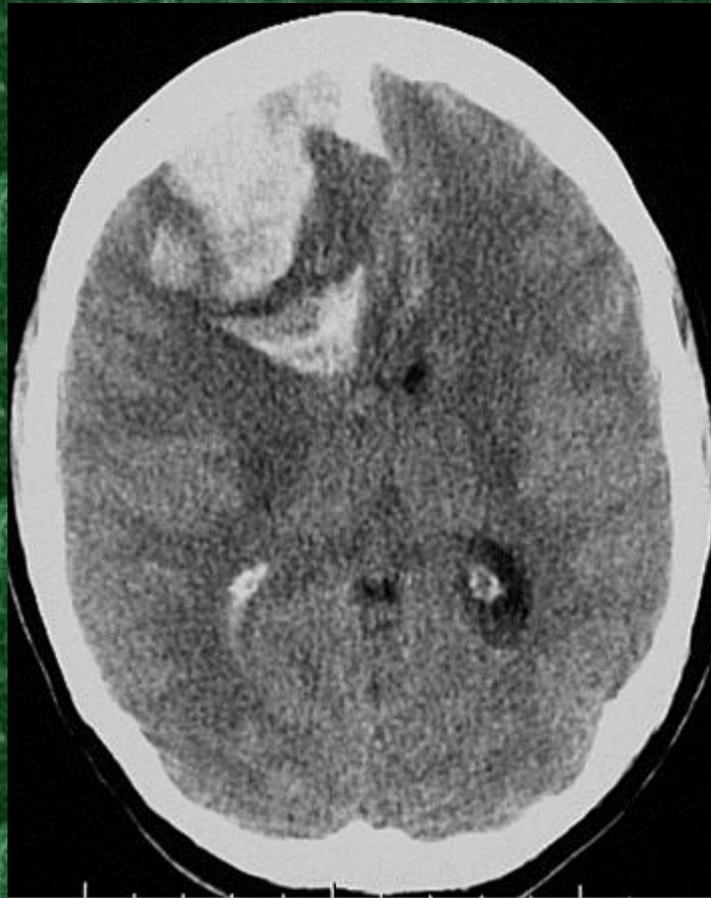
- ABC
- Eclampsia defined as seizure or coma *unrelated to other cerebral conditions* in patient with preeclampsia
- Ictal or post-ictal?
- Post-operative?
- Other lesions-Stroke causing altered Consciousness Vs Space Occupying Lesions

Meningitis in a 27-year-old, 8 days post-partum, with 1-day history of disorientation then seizures. Unenhanced CT showed marked cerebral oedema, with effacement of the basal cisterns and loss of grey/white matter differentiation. An intracranial pressure bolt was inserted, with an opening pressure of 115 mm Hg (normal <15 mm Hg). Postmortem found pneumococcal meningitis. *Clinical Radiology (2005) 60, 1156–1170*



Focal Neurological Deficits/Seizures-  
Think SOL/CVA

Ruptured AVM in an eclamptic 27-year-old admitted with pre-eclampsia at 38 weeks of gestation. She developed seizures and underwent emergency Caesarean section. CT showed a right frontal parenchymal haematoma with intraventricular extension. *Clinical Radiology (2005) 60, 1156–1170*



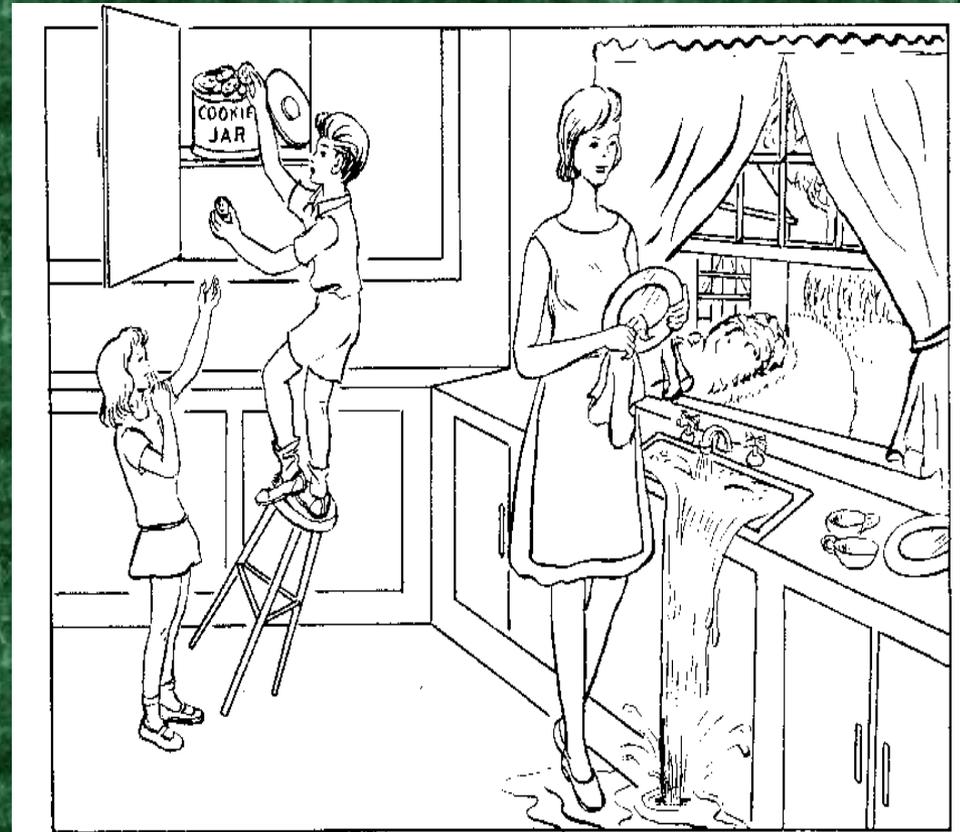
# Simultanagnosia

- GCS developed for cerebral trauma, stroke scales weighted towards focal weakness/sensory loss and MMSE designed to assess global mental status for dementia
- In Eclampsia we know prominent deficit is bilateral parieto-occipital hyperintense signals on diffusion weighted MRI reports (oedema primarily vasogenic)
- Therefore Simultanagnosia (piecemeal vision) has been assessed as way to monitor neurological progression in severe Pre-Eclampsia using standard Cookie Theft Picture

## COOKIE THEFT PICTURE!!!

Test (CTPT), in widespread use for aphasia. Tests secondary and tertiary visual association areas of the brain.

The validated CTPT for simultanagnosia was abnormal in the majority (96.7%) of eclamptic patients with other neurological scales normal. Standard MRI and DWI showed excellent correlation with this simple bedside test



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# To CT or Not?

- This patient may have died without CT revealing that Neurosurgical intervention required
- Should prolonged altered consciousness in Eclamptic patients be treated differently to same situation with first seizure in non-pregnant patients?- “In cases of established epilepsy, imaging is rarely required. When seizures are atypical or of new onset, neuroimaging may be of use to exclude other causes for seizures” *Clinical Radiology (2005) 60, 1156–1170*

“(for) neurological abnormalities in eclampsia.....CT scan is a simple and effective investigation” . *Int J Fertil Womens Med. 2004 Mar-Apr;49(2):61-9.....also J Belge Radiol. 1993 Oct;76(5):304-6.*

Thank you!