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### RESEARCH ARTICLE

#### NEUROIMAGING IN EARLY STROKE DIAGNOSIS.

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#### Manuscript Info

##### Manuscript History

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#### Abstract

A 80 year old male was brought to the hospital with complaints of weakness of right upper and lower limbs associated with deviation of mouth to the left side for the past 6 hours. Patient was drowsy and aphasic with moderately low GCS. He was investigated with CT Brain which showed characteristic evidence for the acute development of neurological deficits.

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#### Introduction:-

A 80 year old male was brought to the hospital with complaints of sudden weakness of right upper and lower limb with associated deviation of mouth to the left side for the past 6 hours. History of aphasia and one episode of vomit for the past 6 hours. No history of seizures/ fever/ trauma. No known comorbid illness. Occasional alcoholic, last consumption 6 months back.

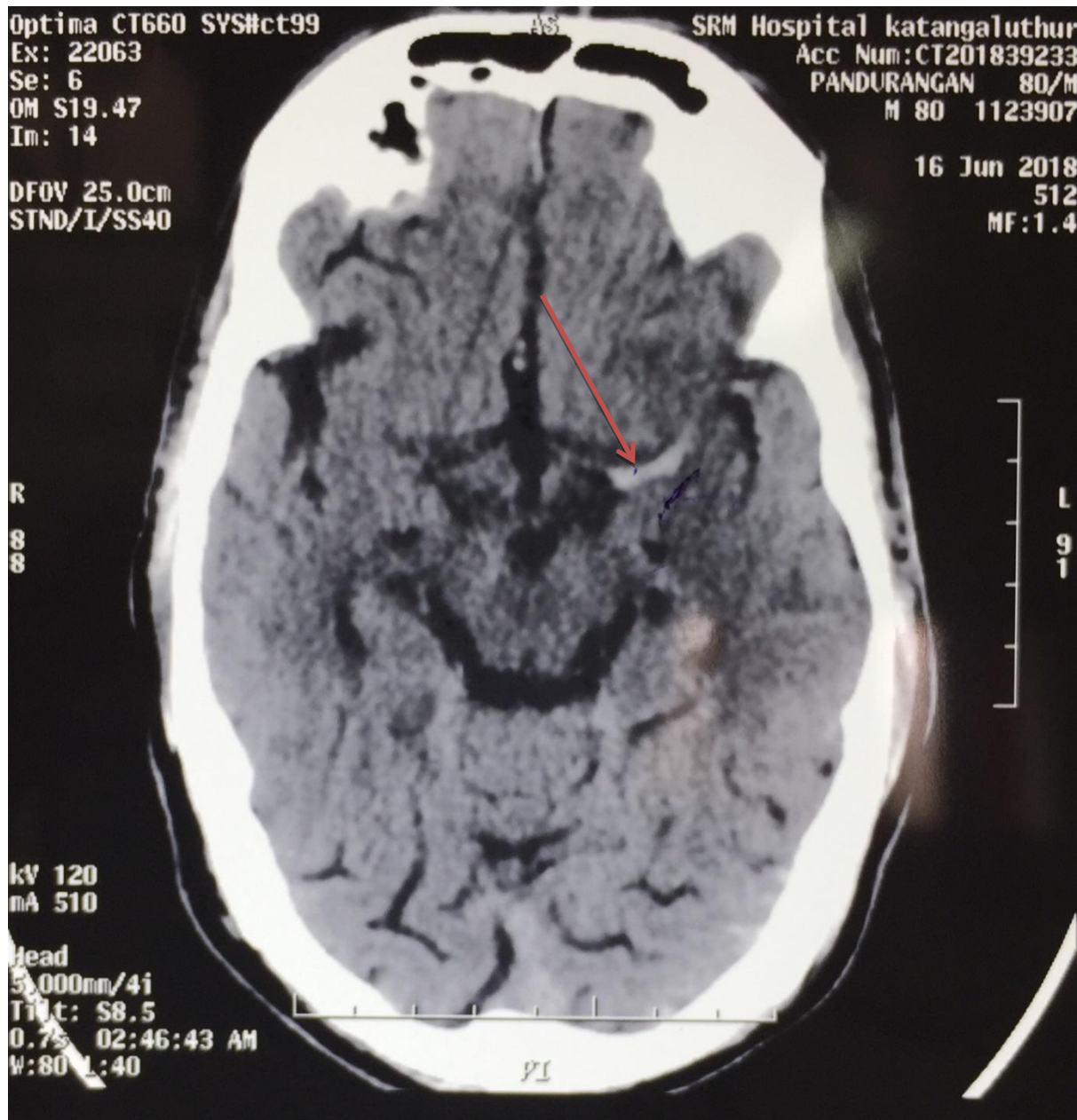
#### Examination:

Patient was drowsy, obeys simple commands, afebrile. Vital parameters were normal. CVS – S1S2 heard, no murmurs. RS – Normal vesicular breath sounds and no added sounds. Abdomen – Soft and no organomegaly. CNS – GCS = E3 V1 M5 (9/15), bilateral pupils equal and reacting to light. Right side both upper and lower limbs were hypotonic and power was 0/5 with extensor plantar reflex in right lower limb.

#### Findings:

CT Brain imaging – Left MCA appears hyperdense p/o acute infarct. Bilateral basal ganglia calcification were noted. Age related cerebral atrophic changes.

On routine blood investigations, total counts were raised and others were all normal.

**Impression:**

Ct brain showed characteristic Dense MCA sign which is indicative of Early acute infarct and patient was treated with Anti platelet agents , statins, neuroprotective agents and anti edemal measures.

**Inference:**

Detecting the early signs of stroke in CT brain imaging is important for initiating early treatment and early recovery from neurological deficits.

**Discussion:-**

The early signs of stroke in CT brain is helpful in detecting the strokes as early as 3 hours. They are helpful in identifying acute MCA infarct and should be correlated with findings on neurological exam. The common signs of embolic stroke are,

- Dense MCA sign

- Loss of Insular ribbon sign
- Obscuration of the lenticular nucleus.
- Loss of grey- white matter differentiation.

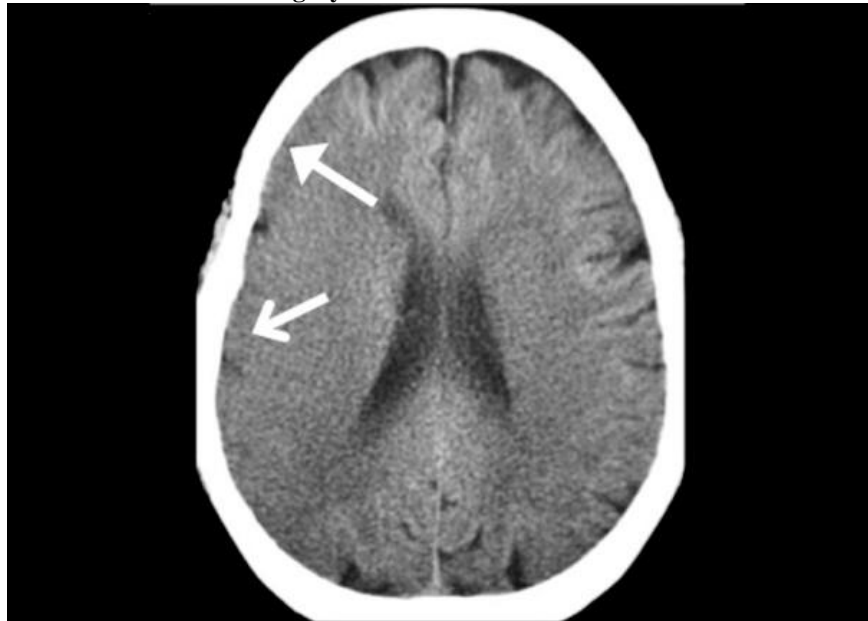
**Loss of Insular ribbon sign (blue arrow):**



**Obscuration of the lenticular nucleus:**



**Loss of grey white matter differentiation:**



**References:-**

1. Harrison's book of Internal Medicine 19<sup>th</sup> edition.
2. Grainger & Allison's Diagnostic Radiology.