Literature Riview

History

- 44 years old female Mrs. Sundari admitted with

- **C/O Altered sensorium since 3 days.**

HISTORY OF PRESENT ILLNESS:

- H/o Altered sensorium for 3 days
- H/o Spasm of both Upper limb & Lower limb
- No H/o Fever
- No H/o Chest pain / Palpitation / Dyspnea
- No H/o Cough with expectoration.

- No H/o Headache / Vomiting
- No H/o Seizures
- No H/o abdominal distension / abdominal Distension

- H/O Past illness
  - K/c/o Mental retardation / Seizure disorder on Regular treatment

  - **H/o Thyroidectomy 10 years back for Papillary carcinoma on T. Thyroxine**

  - Not a K/c/o TB /DM/ BA

Systemic examination

CNS: Drowsy , Arousable

Partially obeys oral commands

Tone B/L Hypertonia

DTR B/L Exaggregated reflexes

Plantar B/L Extensor

Power Couldn't be elicited

CVS:

S1 , S2 heard

No murmur

RS : B/L NVBS+ , No added sounds.

Abd : Soft, no organomegaly.

Neurologist opinion obtained

- O/E
- pt Unconscious
- B/L Pupils 3 mm RTL
- Responds to pain
- Not obeying commands
- DTR ++ ++
- B/L Plantar Extensor

- CT Brain
  - B/L cerebellar , Lt Capsuloganglionic bleed with IVH
  - Brainstem hemorrhage +
  - To get Radiologist opinion
  - MRI Brain

- Suggested
  - Inj.Mannitol 100ml iv tds
  - Inj.Lorazepam 2mg iv sos
  - Inj.Phenytoin 100mg iv tds
  - T.Atorvastatin 10 mg Hs
  - To continue other supportive care

EEG – Normal record

Neurosurgery opinion obtained

CT brain

ICH noticed in B/l lateral ventricle,

B/l cerebellar ICH

Diffuse cerebral edema

Suggested

Inj. Phenytoin 100mg tds

Inj. Mannitol 100ml tds

Coagulation profile

To continue same line of managemeny

Review

CT brain report

- E/o Calcification noted in B/L Basal ganglia , Periventricular white matter , corona Radiata, Occipital gyrus, , B/L cerebellar hemispheres , B/L cerebellar Peduncles without any mass effect

Endocrine opinion

- Post thyroidectomy Hypothyroidism

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  Hypoparathyroidism

  ↓

  Recurrent seizures

Suggested:

T. Calcitriol 0.25ug 0-2-2

T. Calcium 500mg 0-2-2

T. Thyroxin 100 ug 1-0-0

D3 60,000 units once weekly for 8 weeks

MRI brain report

- E/o Tl Hyperintensity noted involving B/l basal ganglia, B/l Thalamus & B/l Periventricular white matter region and B/l Central nucleus of cerebellum

- MRA & MRV – Normal
  - S/o Fahr's disease to be considered
  - However calcium levels and Parathyroid levels were on the lower side .

Final diagnosis

- Post – thyroidectomy Status
- Longstanding postoperative (iatrogenic) hypoparathyroidism
- Bilateral intracranial calcification (brain calcinosis)

Reason for presentation

- Rarity
- Diagnostic dilemma ……
- Need for taking good history – application of positive history ….and making the diagnosis early

Postoperative Hypoparathyroidism

- MC complication of complete or near-complete extirpation of thyroid gland .

- Several thyroid conditions (graves disease , hyperactive adenomas , recurrent goitre & thyroid CA) carry this risk postoperatively .

Clinical presentation……..

- Result of induced hypocalcemia .
- Can range from life threatening condition to asymptomatic lab findings.
- MC presentations – paresthesia, cramps ,muscle spasms, circumoral numbness and seizures
- Othe presentations – Laryngospasm, neuromuscualr irritability,cognitive impairement, personality changes,prolonged QT ,ECG changes that mimic MI , or Heart failure

Intracranial calcification

- One of the features of chronic hypocalcemia.
- **Typically involving** basal ganglia , thalami & cerebellum. (seizures & parkinsonism)
- In our case it is more extensive involving subcortical white matter of parietal lobe and brainstem.
- Very few cases have been reported .
- Interesting thing is that it can lead to cognitive impairment & ICH
- Inspite of widespread calcifications pt can have only mild symptoms & signs

Mechanism

- Not known
- Microscopic colloid deposition around cerebral vessels followed by calcification is the usual thing
- The progression of basal ganglia calcification is related to calcium / phosphorus ratio- thus strict control of hypocalcemia & hypophosphatemia is mandatory.

Differentiating haemorrhage from calcification – Dual energy CT

- Usually any lesion with attenuation levels >100 HU is classified as a calcification.
- Very difficult with the conventional single energy CT scans.
- Because of overlap in Hounsfield densities in some situations.
- Even conventional MR is of little help
- Dual energy CT is a strong candidate and fills the gap.

Take home messages

- Importance of correlating relevant history with clinical situation

- Detection of brain calcinosis in patients who had total thyroidectomy should motivate clinicians for further investigation of possible hypoparathyroidism.

Thank you