



**PARINAUD'S SYNDROME A CASE REPORT**

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**Introduction:**

Gaze palsies are a group of midbrain affecting neurological disorders characterized by inability to move the eyes in horizontal or vertical directions or rarely combination of both. Associated with movement disorder are lid and pupil dysfunctions. These lesions have localizing values.

Parinaud's syndrome ; named after Henri Parinaud a French neuro- ophthalmologist is a lesion involving dorsal midbrain.

The mesencephalic reticular formation that includes the rostral interstitial nucleus of medial longitudinal (riMLF) fasciculus and its connection with the interstitial Nuclei of Cajal and Darkschewitsch and the posterior commissure are involved.

The riMLF is located dorsomedial to the rostral end of the red nucleus, rostral to the oculomotor nucleus and ventral to the periaqueductal grey matter.

This syndrome is characterised by

- (1) impaired voluntary vertical eye movements,
- (2) light-near dissociation of the pupillary response (pseudo-Argyll Robertson pupils),
- (3) convergence nystagmus on attempted upward gaze,
- (4) lid retraction (Collier sign) and
- (5) skew deviation.

Here we present a case of Parinaud's syndrome in post-operative intensive care unit set up.

## Case Report:

### History :

30 yr old female patient underwent pharyngectomy with colostomy for multiple strictures of the gastrointestinal tract following acid ingestion. Preoperative work up; patient was assessed fit under physical status I, i.e no co-morbid conditions. Intra-operative: one episode of hypotension which was over corrected with ringer lactate. Serum for electrolytes at the time of correction showed sodium levels of 160 meq. Following this the rest of the operative period was uneventful

However in the post op ICU, on recovering from anaesthesia patient complained of

- difficulty in looking upwards.
- diplopia on attempted up gaze.
- scared to look into the mirror( "I do not like how my eye looks")
- Patient said she had no such complaints prior to being taken up for surgery.

	OD	OS
Vision bedside	>6/60	>6/60
Eyelids	upper lids retraction present	
Conjunctiva	Clear	Clear
Cornea	Clear	Clear
Anterior chamber	Normal depth	Normal depth
Iris	Color pattern normal	Color pattern normal
Pupil	3mm reacting to light ;direct and consensual Light near dissociation present	
Lens	Clear	Clear

### Ocular examination findings



Figure showing Collier's lid retraction sign

## Extraocular Movements:

### 1. Ductions

	OD	OS
Supraduction	Absent	Absent
Infraduction	Full	Full
Adduction	Full	Full
Abduction	Full	Full
Incycloduction	Present	Present
Excycloduction	Present	Present



Figure showing absent up gaze

### 2. Conjugate movements:

Primary position gaze sustained

Horizontal gaze full and free

Downward gaze full and free

Superior gaze- restriction of levoelevation and dextroelevation

Frontalis over action present.

### 3. Vergence :

Convergence was weak associated with retraction nystagmus.

Fundus :

Both eye media clear

Disc and vessels appear normal

Macular foveolar reflex present.

Central nervous system examination : normal

Provisional diagnosis of up-gaze palsy was made and investigations done.

Investigations :

Complete blood count: normal limits

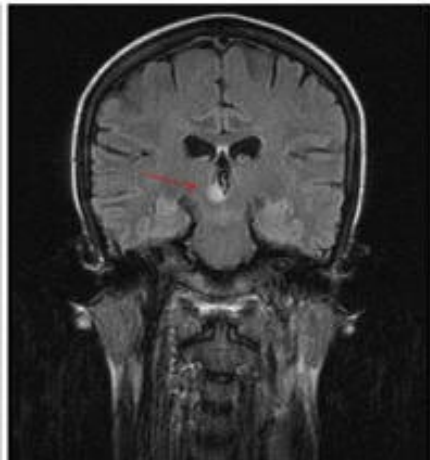
Platelet count: 1.5 lacs

Coagulation profile: normal

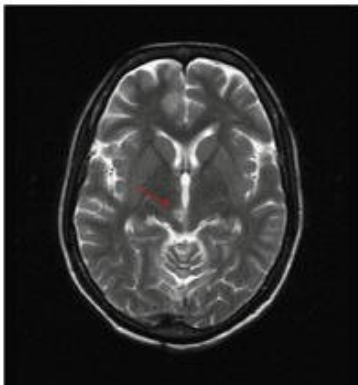
Random blood sugar: 98 mg/dl

Fasting lipid profile: normal

CT brain: showed hyperintense lesion in rostral interstitial medial longitudinal fasciculus (riMLF) of midbrain.



CT brain coronal showing lesion in midbrain



CT brain axial view showing lesion in midbrain



#### Summary:

- Complaints of difficulty to look up and diplopia on attempted up-gaze.
- bilateral lid retraction , up gaze palsy , diplopia on attempted up gaze , convergence retraction and insufficient convergence found on examination.
- Case record of dehydration which over corrected with ringer lactate.
- Normal repeat investigations.
- CT brain showing unilateral lesion in the mid-brain involving riMLF .

#### Diagnosis:

“Dorsal midbrain syndrome due to hypernatremic myelinosis”.

### Follow Up:

Patient was followed up weekly for the first one month and then twice weekly for the next six months. Patient showed significant improvement both symptomatically and on examination.

### Examination findings at 6 months visit:

Vision both eye 6/24 improving 2 lines with pin-hole.

Both eye lids normal.no retraction seen

Pupils reacting to light direct and consensual.

Extraocular movements: minimal residual up gaze palsy not causing any discomfort to the patient

Convergence was present but weak.

### Glass prescription:

Visual acuity of 6/24 both eye for distance and N8 near, with no significant diplopia.

### Correction given

RE -1.50 DSph 6/6

LE -1.25 DSph 6/6

NV +0.75 Dsph N6

### Discussion:

Dorsal midbrain syndrome can be due to a number of conditions such as pineal region neoplasms, obstructive hydrocephalus, arteriovenous malformations, multiple sclerosis, mesencephalic haemorrhages, or dorsal midbrain infection. i.e lesion that puts pressure on midbrain tectum causes dorsal midbrain syndrome.

However in our case it was hypernatremia(due to over correction) that presented with dorsal midbrain myelinosis. On thorough follow up patient showed recovery with residual weak accommodation.

Patient was prescribed glasses for her refractive error for both both distance and near.

This case has been presented for its occurrence in hypernatremia myelinosis and its recovery.

## References:

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