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 commisure 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.

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<th>OD</th>
<th>OS</th>
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<tbody>
<tr>
<td>Vision bedside</td>
<td>&gt;6/60</td>
<td>&gt;6/60</td>
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<tr>
<td>Eyelids</td>
<td>upper lids retraction present</td>
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<tr>
<td>Conjunctiva</td>
<td>Clear</td>
<td>Clear</td>
</tr>
<tr>
<td>Cornea</td>
<td>Clear</td>
<td>Clear</td>
</tr>
<tr>
<td>Anterior chamber</td>
<td>Normal depth</td>
<td>Normal depth</td>
</tr>
<tr>
<td>Iris</td>
<td>Color pattern normal</td>
<td>Color pattern normal</td>
</tr>
<tr>
<td>Pupil</td>
<td>3mm reacting to light ;direct and consensual</td>
<td>Light near dissociation present</td>
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<tr>
<td>Lens</td>
<td>Clear</td>
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Ocular examination findings

Figure showing Collier’s lid retraction sign
Extraocular Movements:

1. Ductions

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<tbody>
<tr>
<td>Supraduction</td>
<td>Absent</td>
<td>Absent</td>
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<tr>
<td>Infrafaction</td>
<td>Full</td>
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<td>Adduction</td>
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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.

Figure showing absent up gaze

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 midbrain involving riMLF.

Diagnosis:

“Dorsal midbrain syndrome due to hypernatremic myelinosis”.

An Initiative of The Tamil Nadu Dr M.G.R. Medical University
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 pinhole.

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:


4. Henri Parinaud from whonamedit.com, the dictionary of medical eponyms. Henri Parinaud