***STANDARD OPERATING PROCEDURE FOR OCULAR MOTOR NERVE PALSIES***

**1.HISTORY**

*1.1Following points will be obtained regarding HISTORY OF PRESENTING COMPLAINT:*

* + Any history of blurring of vision/diminution of vision/ diplopia/ deviation of eye /drooping of eyelids
  + ONSET: if it is sudden or gradual
  + Any change in symptoms between onset and presentation or any progression of symptoms as the day progresses
  1. Any ASSOCIATED SYMPTOMS: like history of headache /fainting attack/trauma/ numbness/ pain in eyes/ vertigo/ tinnitus/ ear discharge/bleeding/ vomiting will be obtained.
  2. *Regarding PAST HISTORY:* Any history of similar complaint and any treatment received for same will be asked.
  3. *Any HISTORY OF SYSTEMIC ILLNESS:* likeHypertension/diabetes mellitus/thyroid abnormality/seizure disorder/tuberculosis will be taken.
  4. *The PERSONAL HISTORY* of patient, if he is Smoker/ takes alcohol or any drug abuse history will also be taken.

**2.1 OCULAR EXAMINATION:**

* Head posture
* Forehead
* Facial symmetry
* Degree of ptosis will be measured and graded as mild, moderate and severe.
* LPS function will be assessed by lid excursion (Burke’s method) and graded as normal, good, fair and poor.
* Visual acuity
* Visual axis
* Cover-uncover test: The primary and secondary deviation will be looked for and noted.
* Ocular movements in all gazes (both ductions and versions)
* Pupils (reactions and size)
* Diplopia charting
  + Diplopia charting will be done using a red-green goggle in a dark room with a slit. The slit will be moved in the field of binocular fixation of the patient with the patient’s head kept stationary. The positions of the images will then be recorded upon a chart with nine squares marked upon it. The patient will be asked about the distance between two images, any tilt or relative position of two images with respect to one another and any change in the same in different directions of gaze will be recorded.

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* Park 3 Test
  + Step 1: hypertropic eye will be noted.
  + Step 2: hypertropic eye in lateral gaze will be noted
  + Step 3: hypertropic eye while head tilt to either side will be noted and hence, affected muscle will be obtained.
* Corneal sensations
* Slit lamp examination
* Fundus examination
* Intra Ocular Pressure
* Forced duction test
* Forced generation test

**2.1 SYSTEMIC EXAMINATION**

* CNS EXAMINATION: Preliminary examination will be done as under:
  + Mental status, speech of patient will be seen.
  + Any other cranial nerve involvement other than III, IV and VI will be looked for.
  + MOTOR system: bulk, power, tone of muscle and reflexes will be checked.
  + SENSORY system: sensations of pain, temperature, vibration will be tested.
  + Coordination: dysdiadochokinesia and Rhomberg’s test will be done.
  + Any neck rigidity or Kernig’s sign will be looked for
  + For detailed neurological examination, patient will be referred to the neurologist.
* For complete medical examination, patient will be referred to the physician.

**3. INVESTIGATIONS**

***3.1 BLOOD TESTS***

* HB
* TLC
* DLC
* ESR
* RBS/FBS
* HBA1C
* LFTs
* RFTs
* ANA

***3.2 RADIOLOGICAL TESTS***

* MRI will be done in patients with:
  + Multiple cranial nerve involvement
  + Recurrent nerve palsy
  + Isolated nerve palsy with some other neurological deficit e.g. hemiplegia, seizure etc.
  + Isolated III nerve palsy which is pupil involving
  + Isolated IV, VI or pupil sparing III nerve palsy which is not improving or worsening on follow-up
  + Age < 40 years of age
* CT scan: in traumatic cases

4. ***FOLLOW-UP***

* Weekly for 1 month
* Monthly for 6 months or till complete recovery ( whichever is early)

5. ***TREATMENT***

* Will dependon the cause of palsy and will be guided by the neurologist.
* In case of vasculopathic causes, systemic disease control will be targeted.
* In traumatic concussion injury, no active treatment will be required (patients will be kept on regular follow-up) and ICSOLs requiring neurosurgical management will be referred to the neurosurgeon.
* Idiopathic cases will be put on oral steroids for short course of 2 weeks and kept on regular follow-up.

**MANAGEMENT OF IIIrd NERVE PALSY:**

Isolated IIIrd nerve palsy Associated neurological defects

Urgent MRI brain

Palsy of any one division Palsy of both divisions

MRI orbit or anterior cavernous

PUPIL INVOLVING PUPIL SPARING

Urgent MRI Wait and follow-up (5-7days)

Pupil involved Pupil spared

Investigations to rule out ischemia (BP, CBC, ESR, FBS/HbA1c, ANA)

Ischemia suspected/ patient over 40 years/ patient improving

YES NO

Can be kept at follow-up for 3-4 months Urgent MRI