ORIGINAL RESEARCH PAPER

Medical Science

A RARE PRESENTATION OF A RARE CASE-HORNER'S SYNDROME

KEY WORDS: Horner's syndrome, dendritic ulcer

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ABSTRACT

Horner's syndrome presents with the classical triad of miosis, ptosis, and (+/-) anhydrosis. Other often overlooked ocular signs include conjunctival injection, changes in accommodation, lower IOP, and iris heterochromia (if congenital).In this article we describe a rare presentation of Horners syndrome following viral keratitis. Horner syndrome is primarily an acquired condition secondary to systemic/local diseases or iatrogenic causes.The usual causes include cerebrovascular accident,multiple sclerosis,syringomyelia,spinal cord tumors,pancoast's tumor,iatrogenic causes like thyroidectomy, radical neck dissection, tonsillectomy, coronary artery bypass grafting, or carotid angiography.

In our patient none of the common causes were found ,however he gave a history of viral keratitis.Sympathetic chain involvement in viral keratitis is extremely rare and has been reported only few times in the past.

The article emphasizes the importance of history and clinical examination and this case is being reported for its rarity

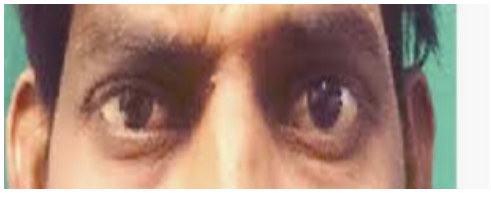
CASE REPORT

A 30 year old male , mason by occupation presented to Sri Balaji Medical College,Chennai with drooping of right upper eyelid of 1 month duration.Patient did not give any history of medical illness however gave a history of viral keratitis for which he was treated with topical acyclovir elsewhere 3 months prior to presentation.

On examination,BCVA OD 6/6, right eye showed mild ptosis with good levator function.Corneal examination was normal .Anterior chamber was normal depth and quiet.Pupil was miosed 1.5mm with sluggish reaction to light .Left eye examination was within normal limits with a 3mm pupil.Fundus was normal in both eyes. IOP measured by Schiotz tonometer was normal. Corneal sensation was diminished in the right eye as compared to the left. Patient's clinical examination was significant with mild ptosis and anisocoria.Neurologiocal examination was done which was within normal limits and cranial nerves were intact.Dark room testing showed worsening of anisocoria .A provisional diagnosis of horner's syndrome was made.Instillation of 0.5% apraclonidine[1] in the right eye showed improvement of ptosis and dilatation of pupil confirming the diagnosis of horner's syndrome.

Urgent MRI/MRA (Horner's protocol) revealed no notable lesions in sympathetic pathway.Blood investigations were also normal.

The Horner's syndrome is most likely attributed to re-activation of the herpes simplex virus in the sympathetic nerve chain.



DISCUSSION

Horner syndrome is a rare condition classically presenting with partial ptosis (drooping or falling of upper eyelid), miosis (constricted pupil) and facial anhidrosis (loss of sweating) due to a disruption in the sympathetic nerve supply.It is primarily acquired following damage to the sympathetic nerve supply.Treatment is centered around identification and appropriate management of the underlying secondary cause. The condition was formally described and later named after a Swiss ophthalmologist Johann Friedrich Horner in 1869[2,3,4]

ETIOLOGY

Horner syndrome is primarily an acquired condition secondary to systemic/local diseases or iatrogenic causes. Sympathetic fibers have an extensive course and can be interrupted during extracranial, intracranial, or intra-orbital traversal. Overall, the causes of Horner syndrome can be divided according to the anatomical location of disruption. [5,6,7,8,9,10,11]

First-order neurons are mostly affected by intracranial conditions and include the following:

- Cerebral vascular accidents (CVA)
- Multiple sclerosis
- Arnold-Chiari malformation
- Encephalitis
- Meningitis
- Lateral medullary syndrome
- Syringomyelia
- Intracranial tumors (pituitary or basal skull)
- Spinal trauma above the T2-T3 level
- Spinal cord tumors

Second-order neurons traverse the thoracic region and are affected by the following:

- Malignancies involving the apex of the lungs (Pancoast tumor)
- Cervical rib (tractional injury)
- Lesions of the subclavian artery (an aneurysm)
- Mediastinal lymphadenopathy
- Trauma to brachial plexus
- Neuroblastoma of the paravertebral sympathetic chain
- A dental abscess involving the mandibular region
- Iatrogenic (including thyroidectomy, radical neck dissection, tonsillectomy, coronary artery bypass grafting, or carotid angiography)

Third-order neurons are in close proximity to the internal carotid artery and cavernous sinus and are affected by the following:

- Carotid cavernous fistula
- Internal carotid artery dissection or an aneurysm
- Cluster headaches or migraines
- Raeder paratrigeminal syndrome (unilateral facial pain, headache, and Horner syndrome)

- **Herpes zoster infection**
- Temporal arteritis

EVALUATION

Lab Workup

- Initial workup should include complete blood count (CBC), erythrocyte sedimentation rate (ESR), and serum chemistry panel
- Urine or blood cultures may be ordered if an infectious agent is suspected.
- Testing for suspected neurosyphilis, HIV along with thyroid function, vitamin B-12, and folate levels may be ordered if indicated following detailed history and examination.
- Urine testing for elevated metabolic catecholamine by-

products is important in the pediatric population with suspected neuroblastoma.
- Purified protein derivative (PPD) is warranted in suspected tuberculosis.

IMAGING
- A chest X-ray followed by computed tomography (CT) scan must be ordered in patients when pulmonary malignancy is suspected.
- Head CT and magnetic resonance imaging (MRI) are advised in cases of possible stroke.
- MRI is warranted and preferred over ultrasonography when carotid artery dissection is a possibility (painful Horner syndrome).[12]

In our patient blood investigation and MRI did not reveal any significant lesions along the sympathetic pathways.Considering the recent history of viral keratitis prior to the onset of horner's in this patient ,we have come to a conclusion of this possible etiology.

Similar report of horner's syndrome following an attack of herpes zoster opthalmicus though rare but has been reported.[13]

CONCLUSION:

In our patient after the keratitis resolved, remaining ptosis and anisocoria were much more distinguishable. Literature review reveals minimal mention of the herpes simplex virus causing Horner's syndrome, but this case report will delve into the potential for this possibility.

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