

## Horners Syndrome: Two Case Report

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### ABSTRACT

**Purpose:** Horner's Syndrome is the triad of miosis, ptosis, and anhidrosis, resulting from disruption of the sympathetic pathways. This article describes two cases of Horner syndrome.

**Case report:** First patient attended at Chittagong Eye Infirmary and Training Complex (CEITC) with the complaints of drooping of right upper lid for 20 days after a gunshot injury in the right neck region. There was injury mark in his right neck region. Ocular examination revealed Marginal reflex distance (MRD) in right eye was 2mm, Palpebral fissure height (PHF) was 10mm in right eye & there was meiosis in dim light & heterochromia in his right pupil. Both pupillary reaction to light and accommodation were normal and other neurological findings were normal. He was diagnosed a case of right Horner Syndrome. Second case was a 28 years male presented with drooping of his left upper eyelid after doing neck surgery in his left side 28 days back. Surgery mark was present in his left neck region. Ocular examination revealed MRD left eye was 2mm. PHF 10mm in R/E & 8mm in L/E, meiosis in left eye found during pupillary examination. He was diagnosed a case of left Horner Syndrome.

**Conclusion:** Horner Syndrome is not very common so this report highlights the rare presentation which helps us to evaluate the patient and further management.

**Keywords:** Horner Syndrome, Trauma, Etiology.

### Introduction

Horner's syndrome is a well-recognized but rare clinical disease which is seen in neuro ophthalmology department. Horner's Syndrome a oculosympathetic paresis was first described by Johann Friedrich Horner, a Swiss ophthalmologist in 1869 which was classically presented with 3 clinical triad: ptosis meiosis (miosis) & anhidrosis resulting from damage to interruption of the sympathetic nerve supply to the eye.<sup>1,2</sup> The sympathetic innervation of eye occurs in three order system. The first order neuron arises from the hypothalamus. The second order neuron connect the stellate & middle cervical ganglia &

terminate in the superior cervical ganglion. The third order neuron exists from the superior cervical ganglion & innervates the levator palpebrae superioris & dilator pupillae. Etiology is different according to site of lesion. The causes of first order neuron lesion include Brainstem disease (stroke), demyelinating lesion syringomyelia cervical cord tumor etc. The causes of second order neuron includes trauma, Pancoast tumor, Surgery involving spinal cord thoracic or lung apex carotid and aortic aneurysm & dissection. The third order neuron lesion are caused by lesion of internal carotid artery such as arterial dissection, thrombosis or cavernous sinus aneurysm. In blunt trauma, it is usually associated with carotid artery dissection. Although the Horner's syndrome do not always constitute an emergency,<sup>3</sup> the internal carotid artery proximity to the sympathetic ganglia makes Horner's syndrome a potential vascular emergency specially in blunt trauma<sup>3,4,5</sup>.

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We present two case of Horner’s syndrome in young man 1st case is after blunt trauma to the neck and head unrelated to carotid artery dissection and another case of horners syndrome after thyroidectomy.

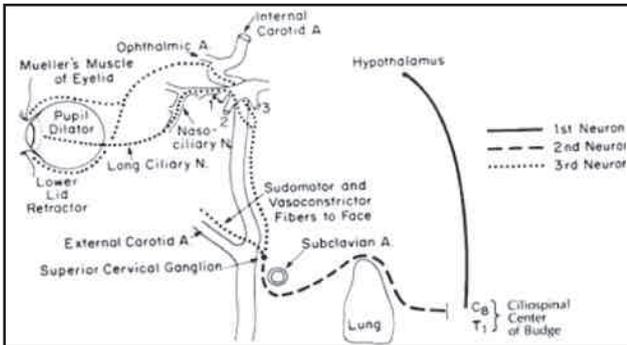


Figure-01: Drawing show the oculosympathetic supply of the eye

Case report

A 20 years male presented on Chittagong Eye Infirmary & Training Complex (CEITC) with complaints of drooping of right upper lid for 20 days& H/O gunshot injury in his right neck region 20 days back. On examination during inspection there was injury mark in his right side of neck and drooping of right upper lid. The chest X-ray and computed tomography (CT) of brain showed no abnormality. Ocular examination revealed Marginal reflex distance (MRD) 2 mm in R/E & 4 mm in L/E . Palpebral fissure height is (PFH ) 10mm in R/E & 12mm in L/E. There was meiosis in dim light in right pupil and asymmetrical pupil measured in 6 mm in left side and 3 mm in right. There was a sectoral depigmentation in right iris. Both eyes showed direct and consensual reflexes to light and accommodation were normal. Extraocular movements were intact and the cranial nerve examination was normal. Neuro logical findings was also normal including facial sensation. He was diagnosed a case of right Horner’s Syndrome. Another case was a 28 years male came to CEITC, with complaints of drooping of left upper lid after his neck surgery for thyroidectomy 28 days back.

On examination during inspection there was surgery mark in his left side of neck & drooping of left upper lid. On ocular examination MRD 4mm in right eye & 2mm in L/E PFH 10mm in R/E & 8mm in L/E. Pupillary reaction in both eye and accommodation were normal .Visual acuity was 6/6 in both eyes ,visual field and other cranial nerves examination was normal. He was diagnosed a case of left Horner’s Syndrome.



Figure-02: First Case: Showed Right eye mild ptosis

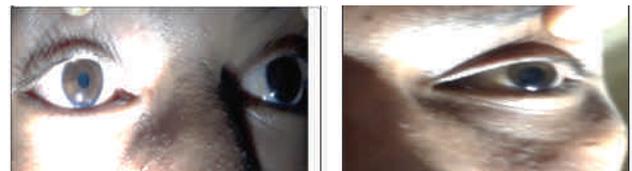


Figure-03: Right eye showed heterochromia and meiosis and left eye is dilated on dark



Figure-04: Second Case: Neck mark showed scar mark



Figure-05: Neck mark showed scar mark

## Discussion

Horner's syndrome is an uncommon occurrence in all age groups<sup>4</sup>. There is a wide variety of conditions that may cause this syndrome, postsurgical and iatrogenic causes comprise most of the cases<sup>6</sup>. Penetrating neck injuries, 0.08% of blunt trauma patient's cervical spine dislocation and birth trauma are the major factors that lead to traumatic injury to the oculosympathetic pathway<sup>7</sup>. In a series of 450 patients with Horner syndrome, 270 (65%) were found to have an identifiable cause<sup>21</sup> of the patients with a detectable etiology, 13% had a central lesion, 44% had a preganglionic lesion, and 43% had a postganglionic lesion.

Injury to the brachial plexus or spinal roots, pneumothorax, fracture of the first rib, or neck hematoma are potential causes of a preganglionic Horner syndrome following trauma. In addition, the preganglionic sympathetic chains are vulnerable to iatrogenic injury. The varied anesthetic, radiologic, and surgical procedures that can produce an iatrogenic Horner syndrome include coronary artery bypass surgery, lung or mediastinal surgery, carotid endarterectomy, insertion of a pacemaker, epidural anesthesia, interpleural placement of chest tubes, internal jugular catheterization, and stenting of the internal carotid artery<sup>8</sup>.

A history of trauma preceding these findings should prompt the clinician to consider that the carotid artery, which lies directly over the sympathetic chain in the neck, may have been injured, particularly if signs of head or neck trauma are present<sup>6</sup>.

In our 1st case there was a gut shot injury to the neck. Patient was not unconscious and hemodynamically stable, there was bleeding from that site. Blood pressure, pulse was recorded normal. CT scan showed no fracture. MRA of neck region was not done. Stitch was given to the injury site. Most probably there was a direct injury to the sympathetic chain as CT scan was normal. No other associated symptoms were found other than painless drooping of right eye

lid and anisocoria. Usually heterochromia was found in congenital Horner syndrome but in that case it was present but cause unknown. In second case patient came with left Horner's syndrome after thyroidectomy surgery. Our two cases are the common causes pre ganglionic sympathetic chain lesion. This reports illustrates a condition that can be seen after trauma and after iatrogenic injury meticulous and sequenced investigation with proper complementary examination is necessary because such signs can be "indicate serious life life-threatening condition such as aortic dissection, tension hemothorax.

## Conclusion

Horner's syndrome is rare condition after trauma and neck surgery. Proper history taking and meticulous examination is necessary and avoid an unnecessary extensive workup and help further management.

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