

Case report :

Post Thyroidectomy Horner's Syndrome – Expect The Unexpected!

Neki NS¹, Shergill GS², Singh A³, Kaur A⁴, Nizami S⁵, Sidhu⁶

Abstract:

Horner's syndrome is caused by injury to the ipsilateral cervical sympathetic chain. The etiology is multifactorial with many traumatic, malignant and iatrogenic causes. Iatrogenic Horner's syndrome following thyroidectomy is one such rare but well known entity. We report a case of 50 year old female who underwent right hemi-thyroidectomy for a solitary thyroid nodule and later presented with features of Horner's syndrome 11 days after the surgery.

Keywords: Horner's syndrome; Thyroidectomy complications

Bangladesh Journal of Medical Science Vol. 16 No. 04 October'17. Page : 600-601

Introduction:

Horner's syndrome (HS) occurs due to damage to the cervical sympathetic chain (CSC) and is characterised by tetrad of miosis, ptosis, enophthalmos, with or without anhidrosis and loss of ciliospinal reflex on the affected side¹. Apart from iatrogenic causes; it can be caused by various disorders like direct trauma to the neck, brain stem ischaemia, malignancy of lung and thyroid.

Case Report:

A 50 years old non hypertensive, non diabetic and non obese female presented to us in the medicine OPD of Government Medical College and Guru Nanak Dev Hospital, Amritsar, with difficulty in fully retracting her right upper eyelid, loss of sweating over right side of face and inward movement of right eye, since almost 1 year. She had past history of large sized solitary thyroid nodule more so on the right side with symptoms of dysphagia. A planned right hemithyroidectomy was done for the same, a year ago, at a local private hospital. On around 11th post-op day she experienced difficulty in fully retracting her right upper eyelid along with the other above mentioned symptoms. The operating team told her that the "problem" had nothing to do

with thyroid surgery, gave her some multivitamins and assured her that it will improve on its own in 1-2 weeks. She has visited many local doctors and quacks since then but to no respite. On examination she had partial ptosis, miosis, enophthalmos and loss of right ciliospinal reflex. There was no history of flushing of face. Rest of systemic examination was normal. Vitals were stable. Laboratory investigations including thyroid profile revealed no abnormality. A provisional diagnosis of post thyroidectomy Horner syndrome was made and the patient was managed symptomatically and conservatively for 8 months but unfortunately without any significant recovery. The patient continues to be under follow up.

Discussion:

Described first by Bernard (1853) and then Johann Horner (1869), HS is characterized by miosis, ptosis, enophthalmos, with or without facial anhidrosis and vascular dilatation of one half of the face resulting from disruption of the fibres of the cervical sympathetic chain anywhere along its "3 order system" course; which supply the radial muscle of iris-superior tarsal muscle (Muller muscle) and the sweat glands of the face.¹ Various causes of Horner's syndrome include direct trauma to the neck, brain

1. N.S Neki, Professor
2. Gagandeep Singh Shergill, Junior Resident
3. Amritpal Singh, Senior Resident, Dept. of Medicine, Govt. Medical College & Guru Nanak Dev Hospital, Amritsar, Punjab
4. Amanpreet Kaur, Consultant Gynaecologist, Civil Hospital, Fatehgarh Sahib, Punjab, India
5. Sharique Nizami, Senior Resident, Mata Gujari Memorial Medical College, Kishanganj, Bihar, India.
6. Puneet Bans Sidhu, Medical Intern, Department of Medicine, Govt. Medical college and Guru Nanak Dev Hospital, Amritsar, India

Correspondence to: Dr. N.S. Neki, Professor, Dept. of Medicine, Govt. Medical College & Guru Nanak Dev Hospital, Amritsar, Punjab, 143001, Email: drneki123@gmail.com

stem ischemia, carotid artery dissection, thyroid and lung malignancy as well as iatrogenic causes. Chest tube thoracostomy, tonsillectomy, coronary artery bypass grafting, central venous cannulation, epidural analgesia and carotid endarterectomy are the well described iatrogenic causes of HS.²

Horner's syndrome following thyroidectomy is, however, a very rare occurrence with the complication rate of merely 0.2-0.3 % of total cases. The complication was described by Kappeler in 1865 and Kaelin in 1915 became the first to publish a scientific paper on this entity.³ The association between traditional thyroidectomy and HS is now well known. While, majority of cases occur following surgery for malignant thyroid glands combined with lymph node dissection or following complicated thyroid surgery; recently cases are being reported following minimally invasive parathyroidectomy and minimally invasive video-assisted thyroidectomy.^{4,5} Although the pathophysiology of HS in such cases still remains unclear to this day; the various proposed possible mechanisms include compression of the cervical sympathetic chain by postoperative hematoma or seroma, neural damage induced by ischemia, stretching of the cervical sympathetic chain during retraction and direct damage especially in patients with anatomical variations.⁶ The onset of HS after thyroidectomy occurs on 2nd to 4th postoperative day. But in our case, HS developed 11 days following thyroidectomy. Research of the appropriate scientific English literature didn't show

any similar case with similar relatively late onset. We think its most probably due to delayed ischemic injury to the cervical sympathetic trunk.⁷ Prognosis is usually poor with 70% of patients presenting permanent damage or incomplete recovery. Complete remission may occur in rare cases and it usually takes a long time which may be up to 15 months.⁸

Conclusion: Horner's syndrome is a rare complication following thyroidectomy with the incidence as low as around 0.2 – 0.3% of total thyroidectomy cases. Since it leads to a significant cosmetic disfigurement that could be permanent in a significant minority, the surgeons should be aware of the possible anatomical complexity of the “3 order system of sympathetic innervations of the eye” and its association with adjacent structures. Good understanding of the condition and its prompt diagnosis during the post operative period is extremely vital considering the fact that seromas or hematomas might be the culprits- the potentially reversible ones. The entity holds relevance for physicians also as the patients may turn up to them seeking treatment. Being well versed with the condition would help them in timely referrals to surgeons avoiding dangerous delays. In the times of pandemic of lawsuits against the white-coats; it's imperative to be aware, well-informed, documentative and expect the unexpected (complications).

Financial support and sponsorship: nil

Conflicts of interest: there are no conflicts of interest

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