Case Report

TOLOSA-HUNT SYNDROME
A rare presentation of relapse on opposite side in an elderly female.

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Abstract

Tolosa-hunt syndrome (THS) is a rare disorder manifesting as unilateral orbital pain associated with paresis of one or more of the 3rd, 4th, 6th as well as superior divisions of 5th cranial nerves caused by a granulomatous inflammation in the cavernous sinus, superior orbital fissure or orbit [1]. Here, we report a case of recurrent THS in a 65-year-old female who presented to us with an episode of painful ophthalmoplegia showing excellent response to steroids and having recurrence after a period of 2 years with similar complaints on the opposite side.

Keywords:

Cranial neuropathy; Differential diagnosis; Painful ophthalmoplegia; Ptosis; Tolosa–Hunt syndrome; Steroid treatment.

Introduction:

Tolosa-hunt syndrome is a rare disorder presenting as unilateral painful ophthalmoplegia. The estimated annual incidence is 1 case per million per year [2]. It is the nonspecific granulomatous inflammation characterized by infiltration of lymphocytes and plasma cells primarily in and around the cavernous sinus, with variable extension into and beyond the superior orbital fissure/orbital apex [3]. Patients show dramatic improvement with steroids even though recurrences are common which can involve the same or opposite side and can even be bilateral[4]. Although, before advent of steroids, cases reported spontaneous remission [5]. Herein, we present a case of THS in 65-year-old female who presented with complaints of unilateral severe headache, ophthalmoplegia, blurring of vision and ptosis, and whose pain was reduced with steroid therapy.

Case Presentation

A 65-year-old female presented with acute episode of left sided ophthalmoplegia associated with severe constant left periorbital and hemicranial pain. Her pain begun after she was operated for cataract in left eye 3 months back and it was not responsive to any of her pain medications. Postoperative complications were ruled out but the pain did not subside and progressed to involve whole of the left hemicranium extending up to occiput causing difficulty in lying supine and sleeping. One month back she also started having difficulty in eye movement, and blurring of vision which ultimately progressed to complete restriction of eye movements and drooping of upper eyelid. It was accompanied by numbness of left upper half of face. Two years back, she experienced a similar episode on right side, which responded and resolved with use of steroids. She is a known case of type 2 diabetes, hypertension and coronary artery disease being treated with regular oral medications. Her diabetes was uncontrolled by oral hypoglycemic agents at the time of presentation and she was started on insulin on admission. She did not report any history of fever, head trauma or weakness of any other body part. Patient gave no

history suggestive of migraine.

On examination patient was conscious, cooperative, and oriented. Vitals were within normal range. On ocular examination, left eye was almost closed due to ptosis. Left pupil was fixed in central gaze, and pupillary light reflex and corneal reflex were absent with complete restriction of movements of left eye in all directions. Neurological exam revealed 3rd, 4th, and 6th cranial nerve palsy, decreased visual acuity and hypoesthesia over area supplied by left ophthalmic and maxillary divisions of trigeminal nerve. Function of all other cranial nerves was intact. Examination of right eye was unremarkable. All other physical and systemic examinations were normal.

On investigation – her RBS was 280 mg/dl, FBS 178 mg/dl, HbA1c 9.8. Hematology report, ESR, CRP, PTI/INR, lipid profile, serum electrolytes, ECG, CXR, and renal and thyroid function tests were within normal limits. Lumbar puncture was done and the cerebrospinal fluid (CSF) study showed normal findings. Serology including Human Immunodeficiency Virus, Hepatitis C Virus, Hepatitis B surface Antigen, and Venereal Disease Research Laboratory test (VDRL) was non-reactive.

Fundus was unremarkable except age related macular degeneration changes. Visual acuity was 6/60 for right eye and 6/24 for left eye. Contrast enhanced MRI of brain with orbits exhibited mildly bulky left cavernous sinus, T2 hypointense soft tissue showing homogenous post contrast enhancement in the anterior part of cavernous sinus, extending to involve left superior orbital fissure and orbital apex. There were also chronic microangiopathic changes, chronic lacunar infarcts in right temporal and left parietal lobes, and few chronic micro-hemorrhages.
MRI brain without contrast performed 2 years back showed homogenously enhancing soft tissue with extension to right superior orbital fissure and orbital apex suggestive of THS. Two years back, contrast enhanced MRI brain with orbits showed similar changes in addition to mild dural enhancement along right medial temporal lobe. The lesion was abutting the right optic nerve at orbital apex. However, it showed normal signal intensity.

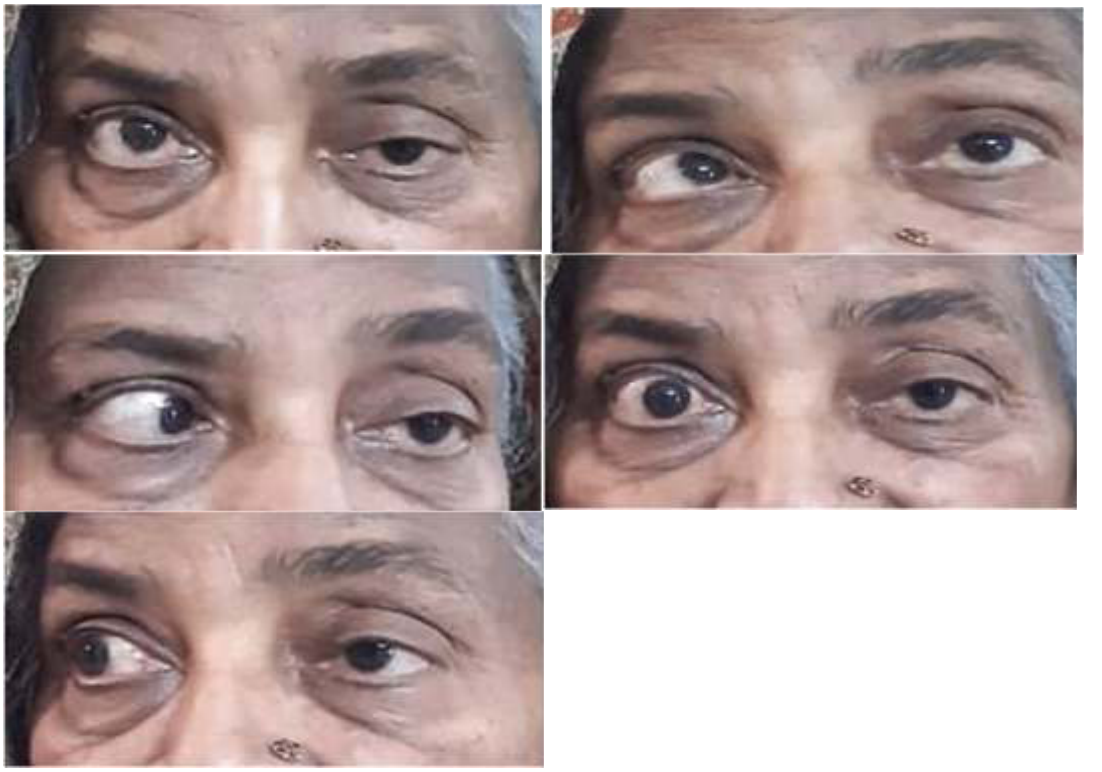
Differentials kept in mind were Sarcoidosis, Tuberculosis and Lymphoma. Normal CXR, adenosine deaminase (ADA) levels in cerebrospinal fluid (CSF) and normal angiotensin converting enzyme (ACE) levels ruled out the possibility of tuberculosis and sarcoidosis.

Our case responded excellently to high dose (500 mg methylprednisolone OD) intravenous steroids administered for 5 days, with earliest symptom to resolve being her excruciating headache and periorbital pain. Subsequently her ptosis and opthalmoplegia also started to recover over 1 week.

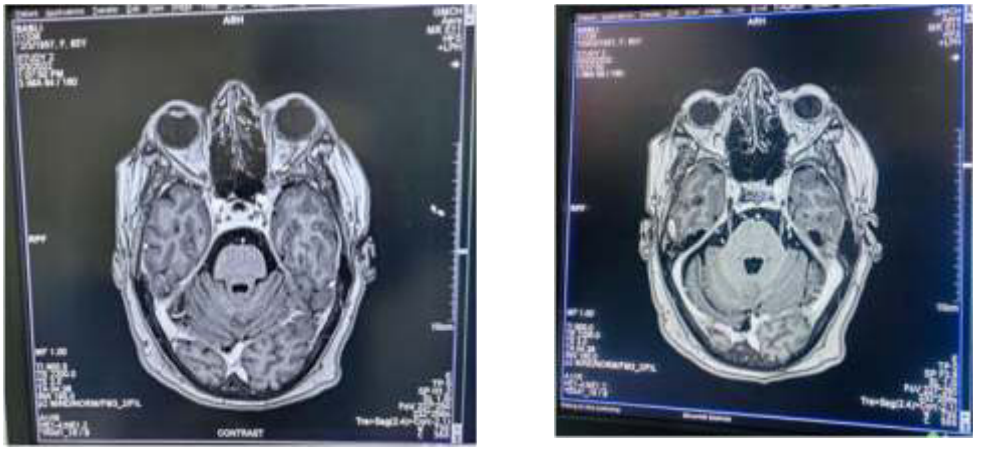
Image on day 1 of administration of steroids:

Images on day 3 of administration of steroids:

Images on day 5 of administration of steroids:



T1 weighted MRI with contrast axial sections:



Discussion

Tolosa-Hunt Syndrome is considered as an important and rare cause of painful cranial neuropathies presenting with orbital pain, ipsilateral progressive visual loss, and total ophthalmoplegia. Diagnosis requires the presence of unilateral headache occurring within 2 weeks of ipsilateraloculomotor paresis along with neuroimaging revealing ipsilateral inflammation of cavernous sinus, superior orbital fissure or orbit [1].

Since inflammation involving orbital apex can lead to optic nerve damage and loss of visual acuity which is unpredictable and can be permanent, the syndrome should be identified early keeping high index of suspicion. Other causes of painful ophthalmoplegia which includes diabetes,

ophthalmoplegic migraine, tumors, vasculitis, basal meningitis and sarcoidosisneeds to be excluded to make a diagnosis of THS.

The mainstay of treatment is glucocorticoid with an excellent response as seen in our case. Pain was the first symptom to be relieved within hours of the use, with ptosis and opthalmoplegia showing signs of recovery over a period of one week but no improvement in visual acuity was evident over 3 weeks of steroid therapy.

Recurrences are common and can occur in approximately half of the cases [5] which again would require steroid therapy for management. The relief of pain is faster as compared to opthalmoplegia as shown in various studies [2]. However some patients have a relapsing-remitting course which may require prolonged corticosteroid or other immunosuppressive therapy. Azathioprine, methotrexate, mycophenolatemofetil, cyclosporine, and infliximab have been used as second-line therapy. Our patient responded well to short course of high dose steroid therapy and steroids were tapered off over a period of 3 weeks. Her diabetes was managed with insulin during hospitalisation and she was discharged on oral hypoglycemic agents.

Conclusion

Recurrences are more common in younger patients [6] and can occur after months to years and can be a major problem of the disease process. Every relapse should ideally be investigated with complete work up to rule out other inflammatory and neoplastic disorders as Tolosa Hunt syndrome is a diagnosis of exclusion. Our case reported a recurrence after 2 years which was more severe than the earlier episode in a way that it affected her visual acuity. Still there was an excellent response to high dose steroids during relapse, which were tapered gradually over 3 weeks. There is a need to consider long-term immunosuppressive therapy for suppression of the disease process in such cases, but it is unclear as to whether steroids alter the prognosis with regard to the frequency of relapses. Further research may be needed to confirm the role of long term steroid therapy in such cases. However, rarity of the disorder makes studies difficult.

References

1. Headache Classification Committee of the International Headache Society (IHS). The International Classification of Headache Disorders, 3rd edition (beta version). Cephalalgia. 2013 Jul; 33 (9):629-808. doi: 10. 1177/m 033310 2413485658. PMID: 23771276.
2. Amrutkar C, Burton EV. Tolosa-Hunt Syndrome. 2021 Aug 11. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan–. PMID: 29083745.
3. K C S, K C S, Kunwar P, Dhungana K. Tolosa-Hunt Syndrome: A Case Report. JNMA J Nepal Med Assoc. 2021 Jul 1;59(238):604-607. doi: 10. 31729/jnma. 5700. PMID: 34508416; PMCID: PMC8369562.
4. Hannerz J. Recurrent Tolosa-Hunt syndrome. Cephalalgia. 1992 Feb;12(1):45-51.
5. Kline LB, Hoyt WF. The Tolosa-Hunt syndrome.J NeurolNeurosurg Psychiatry. 2001 Nov;71(5): 577-82. doi: 10.1136/jnnp.71.5.577. PMID: 1160 6665; PMCID: PMC1737614.
6. Zhang X, Zhang W, Liu R, et al. Factors that influence Tolosa-Hunt syndrome and the short-term response to steroid pulse treatment. J NeurolSci 2014; 341:13.