

An Interesting Case of Isolated Abducens Nerve Palsy Mimicker

Dr Shasthara P.¹, Dr Anuj Vilas Nehete², Dr Harsha S.³

¹Senior Resident, Department of Neurology JSS Medical College Hospital Mysuru, India

²Senior Resident, Department of Neurology JSS Medical College Hospital Mysuru, India

³Professor and Head Department of Neurology JSS Medical College Hospital Mysuru, India

Abstract: *Abducens nerve palsy (ANP) is the most common isolated palsy due to the long peripheral course of the nerve [1]. Before sending our patient out of the office door with his return appointment in hand, there are six bells that should ring in our minds [2]; the six conditions that may imitate isolated lateral rectus weakness include Thyroid eye diseases, Myasthenia gravis, Duane's syndrome, Spasm of the near reflex, Delayed break in fusion, Old blowout fracture of the orbit. We present a case of Abducens nerve palsy mimicker in young women with hypothyroidism.*

Keywords: Abducens nerve palsy, hypothyroidism

1. Introduction

Sixth nerve palsy is a commonly encountered condition in many ophthalmic and neurological centers. One population-based study found the age adjusted incidence of sixth nerve palsy to be 11.3/100 000 in a geographically defined population [3]. Acquired palsy of the sixth cranial nerve typically occurs as a result of trauma, compression, inflammation, any cause of increased ICP, or ischemia to either the nucleus or fascicles, and has been reported in a variety of disease states. Isolated dysfunction of CN VI has been reported to be the presenting complaint in a number of diseases, including Diabetes mellitus [4], hypertension [4], myasthenia gravis [5], idiopathic intracranial hypertension [6], head trauma [7], av malformation [8], clival tumors [9], Lyme's disease [10], and hypothyroidism [11].

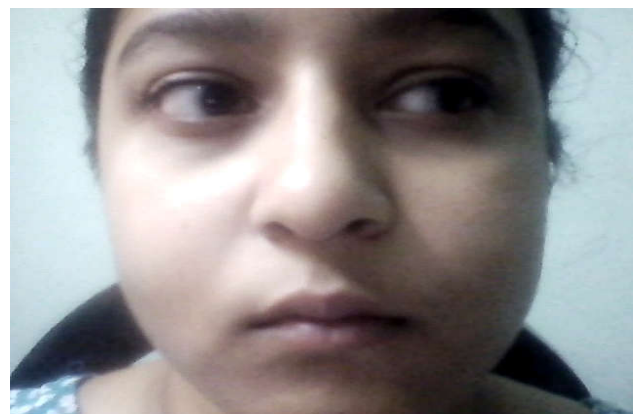
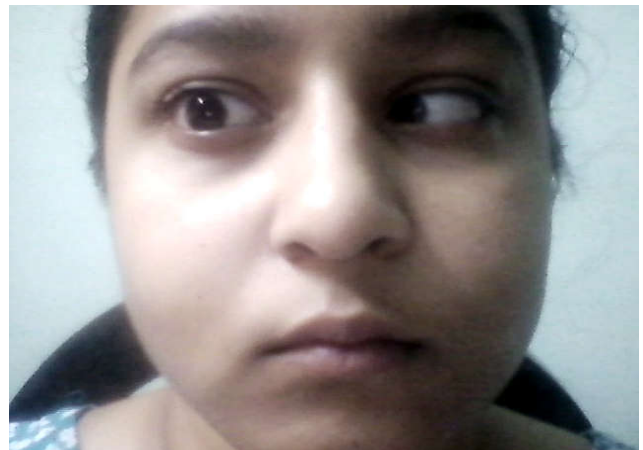
2. Case Report

25 year old female patient presented to the outpatient department with the history of sudden onset diplopia to right gaze. She was previously well with no co morbidities. Clinical examination revealed right esotropia with right lateral rectus palsy. Pupils were bilaterally reactive to light with no ptosis. Systemic examination was unremarkable. Patient was clinically euthyroid.

Routine investigations including complete haemogram, Liver function tests, Renal function test, HbA1C were normal. MRI brain with MRA was within normal limits. Antineutrophilic antibody profile was negative.

However, her thyroid function tests were abnormal total T4 and free T4 were 0.2–0.3 mg/dL and 0.15 ng/dL, respectively (normal range 4.5–12.0 mg/dL and 0.7–1.8 ng/dL). TSH level was 71.09 mU/mL. TPO antibodies were negative.

Clinical photograph at presentation



Patient was started on Thyroxine supplementation and improved promptly with diplopia subsiding subjectively and new onset esotropia subsiding objectively with full range of ocular movements achieved over period of 6 weeks.

Clinical photograph post treatment



3. Discussion

The sixth cranial nerve runs a long course from the brainstem to the lateral rectus muscle. Based on the location of an abnormality, other neurologic structures may be involved with the pathology related to this nerve. Sixth nerve palsy is frequently due to a benign process with full recovery within weeks, yet caution is warranted as it may portend a serious neurologic process. Hence, early diagnosis is often critical for some conditions that present with sixth nerve palsy [2]. Thyroid eye diseases can present with multitude of presentation which may not necessarily correlate with thyroid function/systemic manifestation [12]. Although the exact pathogenesis of lateral rectus palsy in hypothyroidism is not clear, micro vascular ischemia and myoedema have been attributed [13].

4. Conclusion

- There are no pathognomonic historical or physical findings relative to thyroid disease. Clinicians must maintain a high index of suspicion for hyper- and hypothyroidism in any patient presenting with a seemingly unrelated constellation of complaints.
- It's essential to look for treatable conditions in a patient of isolated lateral rectus palsy.

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