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Thyroid associated ophthalmopathy in euthyroid state is a rare case report

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Abstract

Thyroid associated ophthalmopathy is known as Graves' ophthalmopathy. Generally thyroid associated ophthalmopathy (TAO) is seen with hyperthyroidism. It is rare in patients with euthyroid state and hypothyroidism. We present a case with euthyroid ophthalmopathy.

Keywords: Thyroid, Symptoms, Swelling, CBC, LFT, RFT, RBS.

Introduction

Thyroid associated ophthalmopathy is known as Graves' ophthalmopathy. It is an autoimmune process which can affect orbital as well as periorbital tissues and thyroid gland (1). The TAO may even precede, coincide or follow the systemic complications of thyroid disorders. The ocular manifestations of TAO are, eye eyelid retraction, proptosis, chemosis, periorbital edema and with restricted ocular motility. Majority of patients with TAO present with mild symptoms and 3-5% patients will have severe disease. Most of the cases of TAO are managed medically. The prevalence of TAO in euthyroid and hypothyroid patients are between 1.6 % and 8.6% (2).

Case: A 65 years female presented with foreign body sensation in both the eyes for one year. She had periorbital swelling more in right side than left for 25 days. She was having pain in right eye for 2 weeks. Before these symptoms, she was asymptomatic till one year back when she started experiencing foreign body sensation in the both eyes, gradually in progression. Later on, she developed periorbital swelling bilateral more in right side than left as given in (Fig.1) She had to frequent water splashes to relieve from symptoms. She had also redness and watering from both the eyes. General physical and systemic examination was absolutely normal. Eye examination, there was periorbital swelling more on right > left and Visual acuity was normal in both eyes, colour vision was also

normal. Fundus examination was normal. In right eye movements of medial rectus, superior oblique and inferior were restricted and there was no movement in lateral rectus and superior rectus. In left eye movements of lateral rectus, superior rectus and inferior rectus was restricted, as given in (Fig.2). Laboratory investigations revealed normal CBC, LFT, RFT, RBS and thyroid function was also normal (FT3=0.98, FT4=10.44, TSH=1.02). Ophthalmologist noticed eye lid edema R>L, lid erythema, conjunctival chemosis, epibulbar hyperaemia and inflammation of carbuncle in right eye. Proptosis seen in bilateral eyes. Visual acuity was normal in both the eyes. Fundus was normal and RAPD Gr. 1 in right eye (relative afferent pupillary defect). On Slit Lamp examination, superficial punctate seen in right eye. Keeping the possibility of restrictive ocular myopathy bilateral eyes with exposure keratopathy right eye, MRI brain was done to rule out the obstructive optic neuropathy. MRI brain revealed bilateral enlargement of extraocular muscle bellies with proptosis, preseptal edema (R>L) with increased right barrel index (62%), suggestive of bilateral thyroid orbitopathy. Right optic nerve sheath thickening and enhancement- optic nerve neuritis. Anti TPO and TRAb anti-body were advised and TPO antibody was negative and TRAb was positive. Finally, patient diagnosed as Restrictive orbital myopathy- euthyroid orbitopathy (active phase) with sight threatening thyroid eye disease. She was managed with IV methylprednisolone 1 gm for 3 days followed by oral prednisolone. On follow up after 1 week, improvement was seen as shown in (Fig.).

Figure 1: Showing peri-orbital edema R>L at diagnosis and after treatment

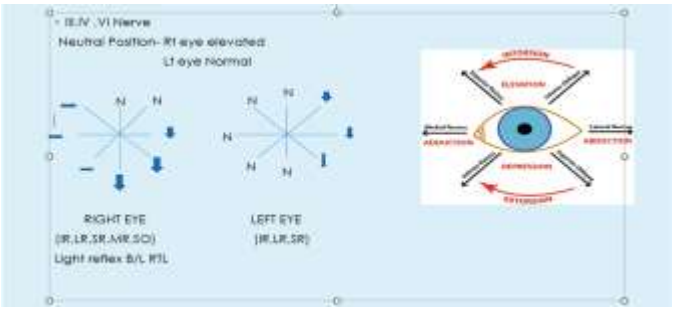

Figure 2: Showing restrictive movements of extra-occular muscles in both the eyes

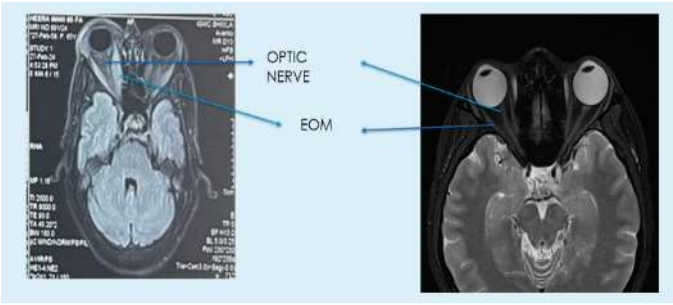

Figure 3:

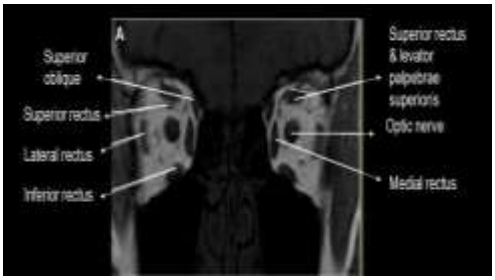

Figure 4:

Fig. 3-4: MRI Brain showing B/L enlargement of extraocular muscle bellies with proptosis preseptal edema(R>L)-Thyroid ophthalmopathy. Right optic nerve sheath thickening and Enlargement-Right optic nerve neuritis.

Discussion

Although many patients with TAO are seen with hyperthyroid state, but hypothyroidism, euthyroid states can also present with TAO (3). The presenting case was also in the euthyroid state. So, we thought to present this case to create awareness as euthyroid patients can have TAO. The annual incidence of TAO is around 16 cases per 100,000 women and 2.9 cases per 100,000 men (3). The females are affected more than males, however severe cases are seen more often in men than women. Most of the patients are seen in age group of 30-50 years, but severe cases are seen more frequently in those patients, older than 50 years. As our case was also > 50 years and she was a smoker. Although TAO is not associated with vision loss, but this condition can lead to vision threatening exposure keratopathy, diplopia and even compressive optic neuropathy. The prognosis is generally favourable. Exposure keratopathy and compressive optic neuritis were seen in the presenting case. The diagnosis of thyroid disease is based on the presence of ophthalmopathy and confirmed by positive serum thyroid stimulating anti-body. Typical thyroid ophthalmopathy is always associated with elevated thyroid hormone levels and presence of thyroid receptor anti-bodies (TRAb), but a few numbers of patients may remain euthyroid without developing hyperthyroidism for long period of time. Treatment of euthyroid disease do not differ from Graves' disease ophthal- mopathy. However, euthyroid patients develop milder forms of ophthalmic symptoms and their clinical activity score is lower, they have better responses to treatment. A few studies have been reported that a patient could be diagnosed with TAO with normal euthyroid status (4,5). A euthyroid TAO should have no thyroid function abnormalities and have TRAb positive. as a criterion for the diagnosis of euthyroid TAO has been recommended (6,7). It has been observed that cigarette smoking is associated with TAO progression, increases the risk of proptosis, diplopia and delayed or decreased response to immunosuppressive treatments for moderate to severe, active Graves' ophthalmopathy (8). Euthyroid Graves' ophthalmopathy is a challenging disease due to its atypical manifestations and absence of abnormal thyroid function. Physicians should have clinical suspicion of euthyroid ophthalmopathy in euthyroid state, though it is considered to be mild disease, but sometimes it may lead to sight threatening thyroid eye disease.

Conclusion

Euthyroid Graves' ophthalmopathy has an atypical presentation. Clinicians should have suspicion of this rare entity in absence of abnormal thyroid function. TRAb anti-body should be done to diagnose euthyroid ophthalmopathy.

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