

A case of unilateral proptosis in hyperthyroidism

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Abstract

Unilateral proptosis in hyperthyroidism is very rare condition. We have differentiated other causes leading to unilateral proptosis by considering clinical features, radiological finding, biochemical investigation and we have treated patient by antithyroid drugs and got good result within few months which is a rare entity to be considered. Patient is to be followed up for chances of developing contralateral eye involvement. Pure unilateral proptosis will occur in 5-11% of cases.

Keywords: Unilateral proptosis, Hyperthyroidism, Antithyroid drugs

1. Introduction

Proptosis is the most frequent extrathyroidal manifestation of Graves' disease [1], and results from an increased volume of orbital tissues (connective and adipose tissue, interstitial enlargement of extraocular muscles) within the enclosed space of the bony orbits [2]. Although by considering many review articles which have been published on Thyroid eye disease [1-5], till now it is a pathogenetic enigma and a therapeutic dilemma to come to conclusion. Once initiated, the orbital immune process frequently assumes a momentum of its own, leading to non-specific but nonetheless harmful consequences such as tissue hypoxia, oxygen free radical damage, and fibrogenic tissue remodeling [6]. The natural history of unilateral Thyroid eye disease is unknown and the diagnosis remains challenging [7]. With unilateral presentation one should think of orbital pseudotumour, orbital cellulitis, cavernous sinus thrombosis, or intraorbital neoplasms[8]. Cause may be benign and malignant.

Clinical measurement of the exophthalmos is performed by using "Hertel" Oculus exophthalmometer. It is significant if the difference between eyes was > 2 mm

between asymmetric eye [9]. Radiological investigations are helpful to attain proper diagnosis.

2. Case presentation

A 23-year-old woman presented with diminution of vision in the left eye since 10 days. The patient had history of weight loss with increased appetite, tremulousness of hands more in outstretched posture, easy fatigability. On Examination we found postural tremors, resting tachycardia (120bpm), unilateral (left eye) proptosis (figures 1) - features suggestive of Graves' disease.

There was no history of pain in the left eye, and not associated with features like history of headache, diabetes and hypertension. There was no history of trauma to the left eye or sleep apnoea and with no significant family history.

On investigation Routines like complete blood count, urine routine, liver function test, C reactive protein are done and reports are within normal limit, Free T3, T4 were raised with low thyroid stimulating hormone (TSH) value. With values T3: 5.4nmol/L, T4: 240.6nmol/L, TSH:

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0.1mIU/ml. Thyroid scan showed diffuse increased uptake of radioiodine. ECG was showing sinus tachycardia, Based on the above clinical and biochemical tests, diagnosis of Hyperthyroidism is arrived at. Eye examination, showed visual acuity was normal for distance. Fundus examination was normal. With other systemic examination within normal limit. To rule out vasculitis we have done antinuclear antibodies, HIV ELISA, VDRL for syphilis, antineutrophil cytoplasmic antibody were done and were negative. Nerve conduction study was also normal. CT Brain [figure 3] showing left eye proptosis .By considering above all, patient was diagnosed to be having unilateral proptosis secondary to Hyperthyroidism. And she had been treated with Tab carbimazole 10 mg once a day for 5 months. And with follow up, patient was relieved of proptosis[Figure 2]



Figure 1: Upper eyelid not covering 1/3rd of cornea [arrow mark], and wide palpebral fissure [Before treatment]



Figure 2: Upper eyelid touching corneal border [After starting treatment]

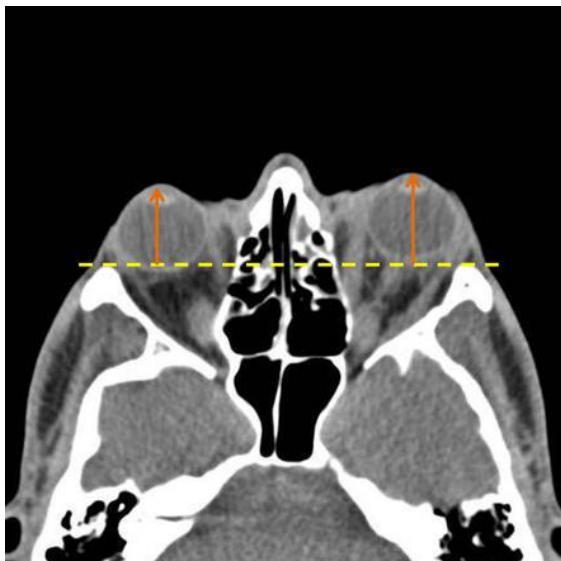


Figure 3: CT Brain showing left eye proptosis

3. Discussion

A complete history is essential in the evaluation of unilateral proptosis. The outset, progression and the presence of associated signs and symptoms such as fever, pain, visual loss and diplopia should be established. A history of allergies, sinus infection, epistaxis, nasal discharge, airway obstruction and tearing suggest a sinonasal origin.

History is imperative because trauma and superficial periorbital infections are commonly mistaken for true proptosis. A determination as to whether the proptosis is painful is helpful, as thyroid eye disease is less likely to be painful. Furthermore, a comprehensive physical examination may reveal bruits, ocular pulsations, and congested retinal vessels, which would immediately raise concern for underlying vascular perturbation, including thrombosis, shunts, or fistulae.[10]. Evidence also suggests that thyrotropin or an "exophthalmos producing substance" (EPS) may be secreted by the hypophysis and induce or otherwise influence the eye manifestations of Graves' disease.

This disease is characterized by inflammation, congestion, hypertrophy, fat and orbital muscles fibrosis leading to increase in volume of these muscles. Supplementary evaluation is performed with computed tomography (CT) and magnetic resonance imaging (MRI) which plays a significant role in the demonstration and better characterization of a wide spectrum of clinical findings.

The concept has provided the rationale for pituitary ablation as a radical therapeutic approach in those few patients whose ophthalmopathy fails to respond to more conservative forms of treatment [11-15]. We can also rule out Ocular infections as there was no history of fever, and leucocyte counts were within normal limits and the clinical profile was not suggestive of the same. According to data concerning delayed development of proptosis in the contralateral eye are very few. According Kalmann and Mourits one case of late recurrence of unilateral TED on the contralateral side after 7 years of follow-up was noted [16].

Severe thyroid eye disease is often treated initially with glucocorticoids. The efficacy and tolerability of intravenous administration (IV) is superior to oral or local injection. Oral glucocorticoids, typically prednisone 60 to 100 mg/day, must be taken over an extended period of time.[17,18]

Alternatively, some surgeons feel intraorbital injection of glucocorticoids provide relief of ophthalmologic symptoms with minimal systemic side effects [18]. A dose of 20 mg triamcinolone (Kenalog 40 mg/mL) monthly is injected into the inferior lateral quadrant of the orbit. There is disagreement,[19] however, between

data comparing injections to other forms of steroid administration[20]. A recent report reviewing orbital radiation found improvement in extraocular motility; however, no evidence of improvement in proptosis, eyelid retraction, or soft tissue swelling.

4. Conclusion

There is possibility of Unilateral proptosis secondary to Hyperthyroidism diagnosed clinically and radiologically and can be treated completely by conservative management with medication. And we should keep in mind about differential diagnosis of the same. There is need of follow up of the case in concern of developing contralateral involvement of the eye in upcoming days. Early diagnosis can prevent vision loss.

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