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Case Report: Unilateral Proptosis as First Presentation of Thyroid Disease in Young Female Patient.

Dr.Muslem AlBesher [1], Dr.Fatima AlGhazal [2], Manea AlMunjem [3], Dr.Maryam AlBesher [4], Dr.AbdulHadi AlMubark [5], Dr.Emmad AlEthan [6].

[1,2,5]*Ophthalmology Resident, Al Jaber Eye and ENT Hospital, Kingdom of Saudi Arabia*
[3]*Clinical Pharmacist, Al Jaber Eye and ENT Hospital, Kingdom of Saudi Arabia.*
[4]*Post Graduate, King Faisal University, Kingdom of Saudi Arabia.*
[6]*Emergency department Resident, Al Jaber Eye and ENT Hospital, Kingdom of Saudi Arabia.*

Abstract:

Proptosis can be defined as any increase in the orbit content or behind eyeball which makes the eye displaced forward. The causative lesions may be benign or malignant, and may arise from bones, blood vessels, nerves, muscles or connective tissues. Protrusion is not injurious itself unless it exposes the cornea to the environment and cannot covers it by the lid. Unilateral proptosis, although frequently is seen in connection with thyroid diseases, has a much larger differential diagnosis than bilateral proptosis. Pure unilateral proptosis is rare with 5% to 11% of cases. 16-year-old saudi female patient came to the emergency department complaining of proptosis in the left eye two months ago. Main finding was left eye proptosis of 3 mm with no chemosis, lid retraction, or lag. Her vision was normal. She was referred to endocrinology clinic; where she was diagnosed with graves' disease and managed with anti-thyroid medication. Graves' disease can be manifested by proptosis as first sign.

Keywords: *Proptosis; Graves' disease; Thyroid associated ophthalmology; Exophthalmus.*

INTRODUCTION:

Proptosis can be defined as any increase in the orbit content or behind eyeball which makes the eye displaced forward. The causative lesions may be benign or malignant, and may arise from bones, blood vessels, nerves, muscles or connective tissues. Protrusion is not injurious itself unless it exposes the cornea to the environment and cannot covers it by the lid (1). Unilateral proptosis, although frequently is seen in connection with thyroid diseases, has a much larger differential diagnosis than bilateral proptosis (2). Pure unilateral proptosis is rare with 5% to 11% of cases (3).

CASE REPORT:

16-year-old Saudi female patient came to the emergency department complaining of proptosis left eye. The proptosis was graduating in onset from 2 months. This proptosis is not associated with pain, double vision, or any history of trauma. She has family history of thyroid disease so she visited endocrinology clinic 1 month prior his visit to the emergency department. Her endocrinologist revealed normal examination and normal level of thyroid functions.
General Examination revealed that her vital signs were within normal, and the thyroid gland is not palpable.

Ocular Examination revealed the following:

Visual Acuity: RE 1.0 - LE 1.0 (not aided both eyes)

IOP: RE 18 - LE 16

Extra-ocular muscle: full motion without pain.

No Preorbital myxedema.

There is axial non palstile proptosis in the left eye.

Color vision: no defects

Slit-lamb examination:

Lid: No lid lag or lid retraction.

Conjunctiva: No injection, no chemosis.

Cornea: Clear.

Anterior segment: Average depth and content.

Pupil: Reactive and regular.

Lens: Clear.

Iris: Normal color and pattern.

Fundoscopy: No signs of compressed optic neuropathy.

Investigation revealed the following:

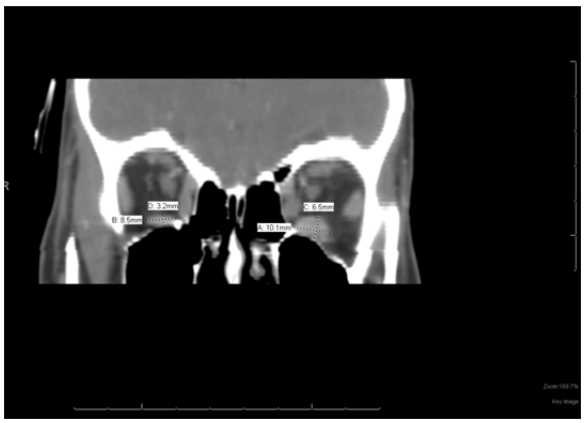
1-Thyroid function test was done for the patient as following:

T4	14.86 pmol\L
T3	6.62 pmol\L
TSH	2.71 uIU\ml

2-CT scan of the orbit:

Post-contrast axial and coronal CT scan of the orbits with axial brain scan revealed the following:

1-Left inferior rectus muscle is thickened and enhanced with fatty strand around it.
2-No evidence of intra or extra - coal masses or enhancing lesions.
3-Intact bony boundaries of both orbits.



DISCUSSION:

Thyroid related orbitopathy has been recognized by the medical community for 200 years. The ocular changes associated with thyroid disease were first published by Graves in 1835 and by Von Basedow in 1840 (4). The majority of patients have clinical or laboratory evidence of thyroid disease at the time of diagnosis however the ocular manifestations can occur even in the absence of detectable thyroid abnormalities (4). Thyroid orbitopathy remains one of the commonest cause of unilateral and bilateral proptosis (4). Thyroid orbitopathy affects females four to five times more frequent than males (5). Pathophysiology of this disease is a complex autoimmune event associated to orbital autoantigens such as thyroid stimulating hormone receptor (TSHR), flavoproten calsequestrin, and collagen XII (6-7). Other than abovementioned autoantigens, smoking is considered as an established risk factor (8). Any patient with thyroid orbitopathy can be investigated by hormonal profile and by using imaging modalities such as orbital ultrasound, computed tomography, and magnetic resonance imaging (9). Management of thyroid orbitopathy requires achieving and maintaining euthyroidism (10). Treatment may be achieved by anti-thyroid medications or by surgery in advance cases (10).

CONCLUSION:

The proptosis is a state that occurred due to malignant conditions as well as benign condition as our case. Proptosis may be the first indicator of Graves' disease, which does not always present classically. Thyroid associated orbitopathy as a cause of proptosis or epiphora may not be readily discerned yet remains one of the differential diagnoses to consider. This report serves to increase the clinical index of suspicion for such cases. Finally Thyroid associated orpitopathy is a vision threatening ocular disease but early diagnosis and treatment needs for better prognosis and saving vision.

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