

## Thyroid Eye Disease Precedes Thyroid Disease (Grave's Eye Disease before Grave's Thyroid Disease) in Egyptian Female

**Alshymaa Alsayed Abdalkhalek Solyman\***

*Master of Endocrine and Metabolism, Department of Endocrinology, Medical Faculty, Ain Shams University, Egypt*

**\*Corresponding Author:** Alshymaa Alsayed Abdalkhalek Solyman, Master of Endocrine and Metabolism, Department of Endocrinology, Medical Faculty, Ain Shams University, Egypt.

**Received:** February 19, 2019; **Published:** April 07, 2020

### Abstract

**Introduction:** Thyroid eye disease (eye proptosis) (exophthalmos) is eye globe out of the bony orbits may be unilateral in early stage and become bilateral then. The chief complaint is pain in eye globes not relieved by usual eye treatment, red eyes all this in early stages then in late stages cosmetically distressing may be with or without sight affection. Medical treatment for this eye condition is not efficient main treatment is surgical may be new monoclonal antibodies help to decrease bad prognosis of cosmetic and sight affection [1].

**Discussion:** Here we discuss a rare condition in which the disease of the eye came before thyroid disorder. Female middle age with redness, painful eye condition then led lag. I suspected thyroid eye disease but thought that there is thyroid disorder which was not proved by any way of diagnosis so I refer her to another ophthalmologist no one couldn't diagnose then case deteriorate within 6 month all of this and her laboratory and neck ultrasound was normal. Clinically diagnosed then computed tomography of the orbits (C-T orbits) confirms diagnosis with only thyroid stimulating hormone was low normal.

**Conclusion:** Thyroid eye disease could be preceded the thyroid disease. Endocrinologist and ophthalmologist should suspect the condition in case with bilateral eye condition progressive disease and take the complaint of patient seriously. The diagnosis is by clinical suspicion and C-T orbits.

**Keywords:** *Thyroid Eye Disease; Grave's Eye Disease*

### Introduction

Proptosis can include any directional forward displacement.



**Figure 1**

Bilateral exophthalmos and upper lid retraction are due to Grave's disease [2].

Main pathology is autoimmune inflammatory process of fat and muscular tissue of extraocular eye muscles. This leads to accumulation of glycosaminoglycans and water in the bony orbits lead to eye protrusion pain and edema of all eye and may be even around the optic nerves, may be also progress to fibrosis of the bony orbits content [3,4] it may be familial disease with genetic base [5].

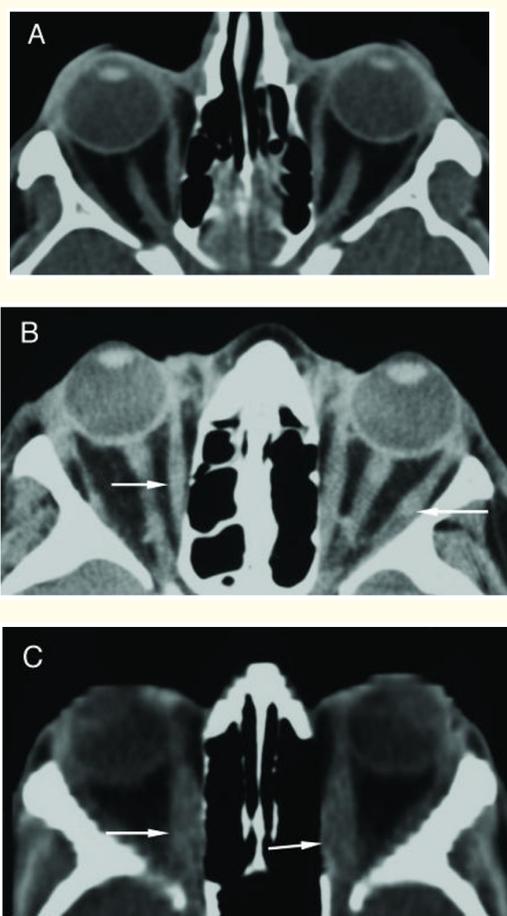
Thyroid orbitopathy classified into Type I does not have restrictive myopathy but, type II experience restrictive myopathy and have diplopia within 20° of fixation [6].

The FDA approved teprotumumab (Tepezza) in January 2020 for the treatment of thyroid eye disease in adults. It arises from a separate process involving autoantibodies that activate an insulin like growth factor 1 receptor-mediated signaling complex on cells within the eye orbit [7,8].

### Case Report and Discussion

The case was female 32 years old with no medical history of any medical disease, married with two kids delivered by lower segment cesarean section twice and on oral contraceptive pills and her paternal grandmother was thyroid goiter. Her complaint was painful eyes nothing else went to many ophthalmologists all told her that she had allergy and dry eye.

She had no improvement of her eye condition but it was worsen by time so she came to me I suspected thyroid eye disease but all laboratory testes thyroid stimulating hormone (TSH), free T4, free T3, anti-thyroglobulin and anti-thyroid peroxidase were normal except TSH was low normal. Neck ultrasound was normal other causes of ophthalmopathy were excluded by history and clinical examination. I suspected that this is a thyroid eye disease but I couldn't proof it until her eyes were developed led lags then 1 month later developed mild unilateral protrusion then she had her computed tomography of her orbits which was the proof of the diagnosis of thyroid eye ophthalmopathy even her all laboratory tests for thyroid were normal and still her neck ultra sound still normal. The diagnosis was thyroid eye ophthalmopathy before her thyroid disease (grave's eye disease preceded grave's thyroid disease).



Management was total thyroidectomy and thyroid hormone replacement under supervision of her orbital surgeon consultant until case becomes stable eye state to get her orbital decompression operation.

### Conclusion

Thyroid eye disease may precede thyroid disease but should be suspected. The confirmation of diagnosis is by computed tomography of orbits. The only way to get the diagnosis by suspicion then C-T orbits.

### Bibliography

1. Tom Cawood., *et al.* "Recent developments in thyroid eye disease". *British Medical Journal* 329.7462 (2004): 385-390.
2. Medical-dictionary.thefreedictionary.com. Exophthalmos (2016).
3. Maheshwari R and Weis E. "Thyroid associated orbitopathy". *Indian Journal of Ophthalmology* 60.2 (2012): 87-93.
4. Ing E. "Thyroid-Associated Orbitopathy". Medscape (2014).
5. Brix TH., *et al.* "Evidence for a major role of heredity in Graves' disease: a population-based study of two Danish twin cohorts". *Journal of Clinical Endocrinology and Metabolism* 86.2 (2001): 930-934.
6. Nunery WR. "Ophthalmic Graves' disease: a dual theory of pathogenesis". *Ophthalmology Clinics of North America* (1991): 4.
7. Smith TJ., *et al.* "Teprotumumab for Thyroid-Associated Ophthalmopathy". *New England Journal of Medicine* 376.18 (2017): 1748-1761.
8. Tepezza (teprotumumab) [package insert]. Lake Forest, IL: Horizon Therapeutics (2020).

**Volume 5 Issue 5 May 2020**

**©All rights reserved by Alshymaa Alsayed Abdalkhalek Solyman.**