Atypical Presentation of Thyroid Ophthalmopathy – A Case Report

Rabbani SMG[1], Rashid MA[2], Rehena A[3], Hossain MM [4]

Abstract

This is a case report of atypical pesentation of thyroid ophthalmopathy.

The case report presents a patient aged 32 years with the history of oligomenorrhoea for three years , dryness and grittiness of both eye for last one year and neck swelling for six month. She was diagnosed as thyroid ophthalmopathy.

The case was treated with carbimazole and improved.

Early diagnosis and treatment needs for better outcome.

Key words: Thyroid ophthalmopathy, thyrotoxicosis.

Introduction

Thyroid ophthalmopathy is an organ specific autoimmune disorder associated with a thyroid disease that targets the extraocular muscles and retrobulbar tissues. It may be present in hyperthyroid, hypothyroid or euthyroid state. Hyperthyroidism is the most common cause of thyroid ophthalmopathy. Pary was the first to describe a case of thyroid enlargement with protrusion of eyes in 1825[1]. In the early 20th century thyroid ophthalmopathy was described as Graves' disease named after Sir Robert Graves'[2]. Since thyroid ophthalmopathy is an autoimmune disorder, it results in inflammation, oedema and fibrosis of orbital tissue. It is a syndrome consisting of hyperthyroidism, moderate thyroid enlargement, ophthalmopathy and dermopathy. It is more common in women than men in a ratio over 5:1. Men are affected late age and this may be more severe. Its peak incidence in the twenties and thirties, but it can occur at any age, although it is uncommon before puberty.

Case report

A young lady of 32 years attended at out patient department of Tairunnessa Memorial Medical College & Hospital - TMMC&H, Board bazaar, Gazipur, in April, 2012 with the complaints of oligomenorrhoea for 3 years, dryness and grittiness of both eyes for 1 year which was gradually increasing day by day latter on. She also noticed swelling in front of the neck, lid retraction and mild protrusion of both eye balls for last 6 months (Fig-1).

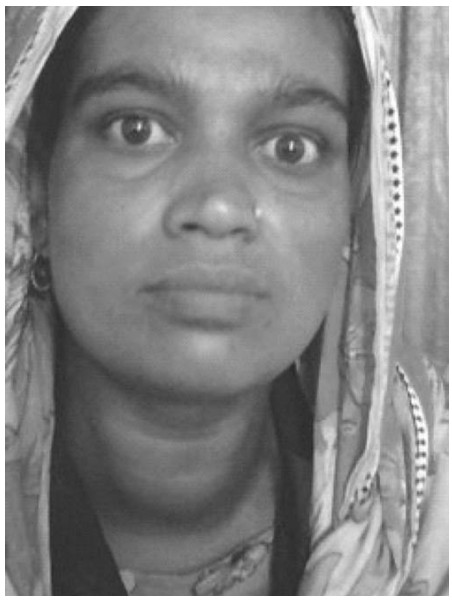

Figure 1: Hyperthyroidism with diffuse goiter

General examination showed pulse rate -98/min and a swelling of the neck which moves with the deglutition, firm in consistency about 7 cm × 5cm, smooth surface, no lymphadenopathy and normal indirect laryngoscopic findings. On ocular examination her best corrected visual acquity was 6/6 in both eyes. There were mild conjunctival hyperemia, lid lag and mild proptosis in both eyes (Fig-2).

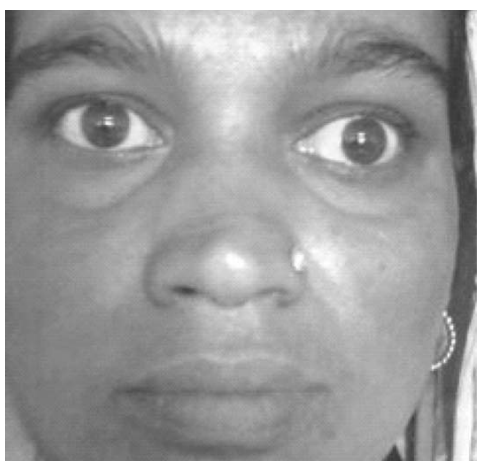

Figure 2: Eye signs before treatment.

1. Corresponding Author:
Dr. S.M. Golam Rabbani MBBS, FCPS
Associate Professor(CC), Otolaryngology, Head & Neck Surgery
Tairunnessa Memorial Medical College, Boardbazar, Gazipur
2. Dr. Md. Abdur Rashid MBBS, MCPS, DO, FCPS
Associate Professor & Head, Ophthalmology
Tairunnessa Memorial Medical College, Boardbazar, Gazipur
3. Dr. Rehena Akhter MBBS,DMU
Junior Consultant, Radiology and Imaging Department
International Medical College and Hospital, Tongi, Gazipur
4. Dr. Mubarok Hossain MBBS, FCPS
Assistant Professor, Otolaryngology, Head & Neck Surgery
Cox's Bazar Medical College, Cox's Bazar

The intraocular pressure was 16 mm of Hg in right eye and 17 mm of Hg in left eye. Ocular movement is normal. Fundus was within the normal limit.

Regarding the investigations hormones assay reveal T3 =3.87 ng/dl (0.51 -1.62 ng/dl), T4=27.5 µg/dl (4.5-12µg/dl), TSH= <0.02µIU/ml (0.51-1.62 µ IU/ml). Thyroid scan shows increase uptake in homogeneous pattern and overall increase in gland size (Figure 3).

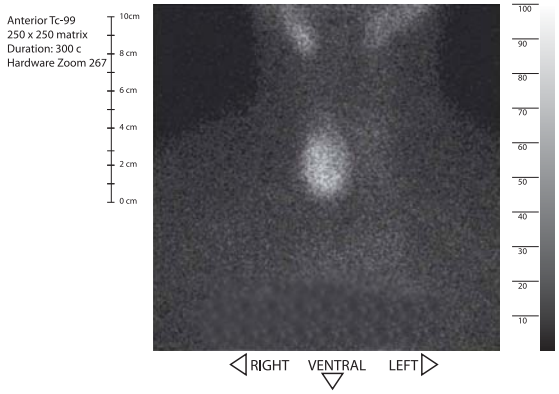

Figure 3: Thyroid scan

Generalized enlargement of the gland was found in USG and ESR was 40 mm in 1st hours. Then the diagnosis was established as thyroid ophthalmopathy. The patient was treated with oral carbimazole 30mg in divided doses and propanolol 40 mg twice daily. She was followed up two monthly and the patient's condition gradually improved. After 10 months no more significant goiter revealed and eye became normal (Figure 4).

Fig 4 : After treatment eye signs became normal.

Discussion

Thyroid ophthalmopathy is an autoimmune condition in which specific signs include diffuse goiter, ophthalmopathy, thyroid acropathy and pretibial myxoedema. Although thyroid ophthalmopathy can occur rapidly over a few weeks, in most cases it is gradual and insidious. Patients exhibit many of the clinical features discussed above but in addition many have extrathyroidal manifestations such as ophthalmopathy and rarely, dermopathy and acropathy.

A diffuse goiter is present in the majority of cases but its absence does not rule out thyroid ophthalmopathy as the thyroid gland may be normal size in around 3 percent[1]. It is usually symmetrical, there may be an overlying palpable thrill and a bruit may often be heard. The bruit results from the increase blood flow to thyroid. In our patient symmetrical goiter is present.

Its hyperthyroidism is mediated by autoantibodies to the TSH receptor in thyroid tissue (TSH-Ab).These binds to the extracellular domain of the TSH receptor in causing activation. This stimulates thyroid hormone synthesis and secretion. Increase expression of growth factors such as fibroblast growth factor (FGF) contributes to enlargement of the thyroid gland resulting in a diffuse swelling. TSH-Abs are IgG and are thought to oligoclonal, unlike thyroid microsomal and thyroglobulin antibodies which are polyclonal. Three thyroid autoantibodies may be measured in clinical practice, those against thyroid peroxide (TPO), thyroglobulin and the TSH-receptor. In a study of the prevalence and usefulness of thyroid autoantibodies, TPO antibodies were positive in 90% of cases of Graves' disease, thyroglobulin antibodies in 49%, whilst TSH-Abs were found in 45 percent[3,4]. Thus TPO antibodies are the most commonly measured antibodies in clinical practice and TSH-Abs are not measured routinely as their percentage in blood is low, prevalence varies between different assay systems and their presence and absence does not alter management of the individual.

Thyroid ophthalmopathy tends to run in families, and a high concordance rate in monozygotic twins suggests a genetic contribution to the aetiology. The genetics of Graves' disease is complex with some gene conferring susceptibility and other protection[5]. It is likely that Graves' is a polygenic disease occurring as a result of the interaction of several genetic loci in association with environmental factors.

Many patients with hyperthyroidism have involvement of the eyes. Clinically detectable eye involvement is present in around 30%, while imaging such as MRI will provide evidence in a much larger proportion. In the majority of cases eye disease is mild; however in some cases it may be severe. In approximately three-quarters of cases, Graves' disease will develop either a year before or a year after eye problems begin[6, 7], but no occasions this problems may be longer. In this cases one may falsely conclude that one is looking at a case of 'euthyroid Graves' ophthalmopathy'. At diagnosis 5 percent of patients are hypothyroid and 5 percent patients are euthyroid. The ophthalmopathy is characterized by swelling of extraocular muscles. The lesions develop due to an accumulation of glycosaminoglycans and a lymphocytic infiltration of orbital and retro-orbital tissues. Our patient complaints of irritation in the eyes and a feeling of a foreign body sensation as this is earlier case.

As the disease progresses there is change in physical appearance with periorbital oedema and a staring expression caused exophthalmos and eyelid retraction. The disease occurs in two phase: a dynamic active phase and a quiescent phase. Unfortunately,even when well-treated and quiescent patients do not always achieve a return in physical appearance to the premorbid state.

Regarding treatment, we have three options as Antithyroid drugs, Radio-iodine, and Surgery. For this patient we have treated the patient with oral carbimazole. These are used due to its inhibitory effect on thyroid hormone synthesis. Two randomized controlled trials have attempted to define optimum duration of treatment and concur that treatment should be offered for a period of 12-18 months[8, 9] as shorter courses duration of treatment are associated with higher rate of relapse.

Thyroid ophthalmopathy is a vision threatening ocular disease. But early diagnosis and treatment needs for better prognosis and to save the sight.

References

1. Michael Gleeson: Scott-Browns, Otolaryngology & Head-Neck Surgery;7th edition;Hodder Arnold 2008;1:340-345.
2. Usha Kim,Thyroid orbitopathy: Illumination, Journal of Aravind Eye Care System, 2001;1.
3. Franklyn JA. Drug therapy: the management of hyperthyroidism. New England Journal of Medicine. 1994;330:1731-8.
4. Buech HB,Wartofsky L. Graves ophthalmopathy, current concepts regarding pathogenesis and management Endos-Rev.1993;14:747-93
5. Nordyke RA, Gilbert Jr FL, Harada AS. Graves' disease. Influence of age on clinical findings. Archives of Internal Medicine. 1998;3:626-31.
6. Khon,Roger. Thyroid ophthalmopathy and lid retraction.Textbook of ophthalmology, plastic and reconstructive surgery.Chapter-6;133-46.
7. Char-DH. Thyroid Eye Disease.ED.2.New York, Churchil Livingstone, 1989:95-91.
8. Torring O, Tallstedt L, Lundell G. Graves' hyperthyroidism: treatment with antithyroid drugs, surgery or radioiodine- a prospective randomized study. Thyroid study group. Journal of clinical endocrinology and metabolism. 1996;4:2986-93.
9. Allanic H, Fauchet R, Orgiazzi J. Antithyroid drug and Graves' disease: A prospective randomized evaluation of the efficacy of treatment duration. Journal of clinical endocrinology and metabolism. 1990;3:675-9.9.