

## Case Report

### Graves' orbitopathy in a female child

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**Abstract:** Graves' orbitopathy (or ophthalmopathy) is an ocular involvement of Grave's disease; it is not common in children. Clinically, the ocular features may vary from mild to severe manifestations. In some cases, the patient can end up with loss of vision.

**Keywords:** Graves' orbitopathy, female, child.

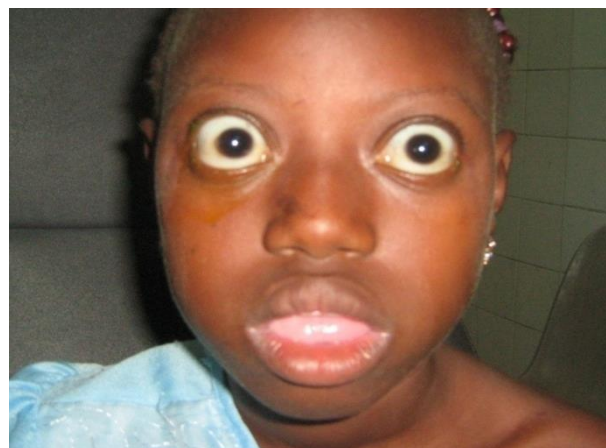
#### INTRODUCTION

Graves' disease is an autoimmune disease caused by thyroid stimulating autoantibodies and is characterized by typical symptoms of hyperthyroidism (emotional lability, fatigue, tremor, palpitations) and extra thyroidal manifestations, including ophthalmopathy, myxedema, and acropachy [1]. Pediatric Graves' disease accounts for 10 –15% of thyroid disorders in patients less than 18 years of age. The onset of symptoms may be insidious and subsequently associated with a delay in diagnosis [2]. The incidence of Graves' disease is believed to be between 0.1 and 3 per 100,000 children with a prevalence of 1 in 10,000 children in the United States. Graves' disease (GD) is the most common cause of hyperthyroidism and is treated with antithyroid drugs (ATDs), radioactive iodine, or surgery [3]. In addition to the hyperthyroidism, up to 40% of patients with Graves' disease develop a manifestation localizing to the orbit, called thyroid associated orbitopathy (or Graves' orbitopathy [4, 5]. The current case of Graves' ophthalmopathy in a young child is unusual.

#### CASE REPORT

A 7-year-old girl was referred to our service by a pediatrician in order to look for ocular features in this patient who was already diagnosed with Graves' disease 2 weeks earlier. Her mother had also Graves' disease; her history was otherwise unremarkable. She had four siblings all healthy according to her mother. The child was under oral Carbimazole and steroid. About ocular findings, best corrected visual acuity was 6/9 in the right eye and 6/6 in the left eye. External exam found bilateral axial and reducible proptosis with lid lag;

upper and lower eyelids retraction with wide palpebral fissure. Ocular motility revealed no limitation. Slit lamp exam revealed exposure keratitis. Fundoscopy was normal both eyes. She was prescribed artificial tears and a regular follow up of one month time was scheduled.



**Fig 1: Anterior view of the child with Graves' orbitopathy**

#### DISCUSSION

One of the most common causes of hyperthyroidism is Graves' disease, which runs with Graves' ophthalmopathy (GO) in about 25% to 50% of cases. It is an autoimmune disease in which the thyroid is stimulated by antibodies antithyroglobulin (anti-Tg), anti-thyroid peroxidase (anti-TPO) antibody and antireceptor of thyroid stimulating hormone (TRAb) against the receiver of thyroid stimulating hormone (TSH). Graves' disease is not frequent in children but it is the most common cause of hyperthyroidism in the

pediatric population [2]. Hyperthyroidism is associated with palpitations, tachycardia, exercise intolerance, dyspnea on exertion, widened pulse pressure and sometimes atrial fibrillation [6]. Patients presenting with Graves' orbitopathy may have many ocular features particularly proptosis and lid retraction; these two conditions expose the cornea to subsequent keratitis.

Approximately 80% of cases of Graves' orbitopathy occur in association with hyperthyroidism, yet the onset may not coincide with the onset of the hyperthyroid state. In relation to hyperthyroidism, Graves' orbitopathy may present well before the onset of thyroid dysfunction, during thyroid dysfunction, or when the patient is euthyroid following therapy [7]. Our patient had familial predispositions, because her mother was diagnosed with Graves' disease.

### **CONCLUSION**

Graves' orbitopathy is a sight threatening condition; it is an autoimmune disease commonly associated to hyperthyroidism. There are no effective preventive and curative treatments against this self-limiting autoimmune disease. Ophthalmological follow up is necessary to the early detection and treatment of ocular conditions.

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