6 Things That Changed How I Manage Graves’ Disease

Why I am interested in this topic:

a. The current understanding of Graves’ Disease is MUCH different now than I remember learning
b. I have several patients with exophthalmos
c. When examined for thyroid dysfunction, some have a normal thyroid which left me confused.
d. What do we do with these patients?

Current perspectives on diagnosis are not much different today. However, treatment strategies have improved to take into account the health and well-being of the person on multiple levels.

Below I highlight the six things that are not commonly known or are commonly misunderstood

I. Thyroid Status in Graves’ Orbitopathy
   a. Also goes by
      i. Thyroid Associated Ophthalmopathy (TAO)
      ii. Thyroid Eye Disease (TED)
      iii. Graves’ Ophthalmopathy
      iv. Graves’ Dysthyroid Ophthalmopathy
   b. Graves Disease (GD) is an autoimmune disease that targets 3 tissues
      i. Orbit
      ii. Thyroid
      iii. Skin
   c. Previous thinking was that GD damaged the thyroid gland which led to ophthalmic complications
   d. Current knowledge states that GD is an autoimmune disease that can affect orbit, thyroid, and skin independently. It is not the thyroid directly leading to ocular damage.

II. Pathogenesis
   a. Body produces autoantibodies to TSH receptor which chronically stimulates synthesis.
      i. Leads to abnormally high T3 and T4
      ii. Negative feedback loop decreases TSH which increases T3 and T4
   b. Simultaneously affects orbit fat and muscle
      i. Fibroblasts
      ii. Myofibroblasts

III. Ocular Signs and Symptoms
   a. Exophthalmos – always bilateral though often asymmetric
      i. Most common cause at 50%
b. Dry eye
   i. Foreign body sensation, Epiphora
   ii. If severe enough can lead to corneal complications

c. Eye Pain

d. Diplopia – possible muscle restriction

e. Eyelid retraction - from overactive sympathetic innervations to upper eyelid

f. Redness

g. Rarely Optic Nerve Compression

h. NO SPECS classification offers little insight into function or treatment of patients

IV. Thyroid Labs

a. Hyperthyroidism
   i. Majority of patients with GD get this ~80%
   ii. Nervousness
   iii. Heat Intolerance/Sweating
   iv. Tremor
   v. Increased appetite

b. Hypothyroidism
   i. Uncommon in GD – but up to 15%
   ii. Lethargic
   iii. Low appetite
   iv. Low sex drive
   v. Weight gain
   vi. Cold, clammy

c. Euthyroid
   i. Uncommon in GD ~ 5%
   ii. No thyroid symptoms
   iii. Skin Manifestations
   iv. Pre-tibial

V. Treatment

a. Most patients stabilize over 8-36 months
b. Systemic Steroids
c. Radiotherapy
d. Anti-thyroid medication
e. Thyroidectomy
f. Psychiatric Medication
   i. Quality of Life
g. Orbital Decompression
   i. Likely need strabismus surgery also due to diplopia
      1. As high as 64% after decompression
h. Topical Lubrication
i. Treating exposure keratopathy

i. Smoking cessation!
   i. Helps progression of disease
   ii. Helps prognosis for recovery
   iii. Non-smokers (or those who quit) do better with treatment
   iv. Weight loss

j. Neuropsychological and Mental Health
   i. Often overlooked symptom of Graves’
   ii. Depression
   iii. Tension
   iv. Anxiety

VI. References
Course Description:

Graves’ disease is a complex autoimmune disease that can affect the eye. New research has changed our understanding of Graves' disease. This course translates the research into clinical practice. Through discussion of diagnosis, prognosis, treatment, and case examples, the clinician will be better able to manage patients with Graves’ disease.

Learning Objectives:

Better understanding of the pathophysiology of Graves’ disease
Education about role of Optometrist in management of Graves’ disease
Better understanding of treatment strategies for Graves’ Ophthalmopathy
Examine role of co-morbidities with Graves’ disease
Discuss how Graves’ affects quality of life
Learn how smoking affects Graves' disease