Editorial

Diagnosing and Treating Thyroid Ophthalmopathy

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In the early stages of the disease, it is often difficult to diagnose thyroid ophthalmopathy. Restrictive strabismus may not be present or may be difficult to detect clinically in some patients. Orbital magnetic resonance imaging is the best method for examining the entire lengths of the muscles and their orbital relationships to diagnose thyroid ophthalmopathy. The use of optical coherence tomography (OCT) is rapidly expanding as a diagnostic modality in ophthalmology. OCT is currently used in patients to assess subfoveal choroidal thickness, which is increased in patients with active Graves’ disease.

In this issue, De-Pablo-Gómez-de-Liaño et al. report that their measurements using the OCT caliper function revealed thicker horizontal rectus muscle tendons in patients with Graves’ ophthalmopathy than in control patients. They also found thicker tendon measurements in patients with active Graves’ ophthalmopathy compared to those with inactive disease. Thickening of the extraocular muscles occurs through the expansion of connective tissue at the level of the perimysium and endomysium, leaving the muscle fibers intact, and accounts for the strabismus in Graves’ disease.

If these results are confirmed, OCT could be useful to diagnose and establish the severity of Graves’ ophthalmopathy. OCT also proved useful in documenting and measuring conjunctival swelling or chemosis in patients with active Graves’ disease. This could supplant slit-lamp examination as a more objective parameter to monitor treatment in this condition. OCT has several advantages over magnetic resonance imaging and computed tomography because it is a cost-effective, rapid, noninvasive, and readily available technique.

The authors note that OCT allows better visualization of the anterior part of the muscle than of the muscle belly, making it especially difficult to examine in patients with motility restrictions. The vertical rectus muscles are also difficult to examine because of interference from the eyelids and motility restrictions, mainly in the inferior rectus muscle. However, previous studies using different OCT devices achieved good visualization of the vertical rectus muscle in patients with strabismus.

Those of us who perform strabismus surgery on patients with Graves’ disease understand the difficult issues these patients face. This novel application of OCT should prove useful in the treatment of these patients.

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