Handout
How to Use Posterior and Anterior OCT and OCT Angiography in Your Clinical Practice

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- Introduction of Anterior Segment OCT technology
    - Use of AS OCT in clinical practice- anterior segment and angle abnormalities, iris cyst, tube shunt
- Anterior segment OCT as tool to measure extraocular muscle insertion distances from the limbus
    - Beneficial in strabismus reoperations
    - Swept source ASOCT delineates the insertion to the sclera very accurately (59-60%)
    - Accuracy is higher than UBM, AS OCT more comfortable, quicker to obtain, non-contact
    - Cons- cost constraints, slow learning curve, accuracy of measurement affected by presence of scar tissue, stretched scar, and/or pseudotendon
    - Given its accuracy, consistency, and speed in imaging previously operated muscles, AS-OCT can be useful in helping surgeons to refine their surgical approach, especially in cases with no medical records

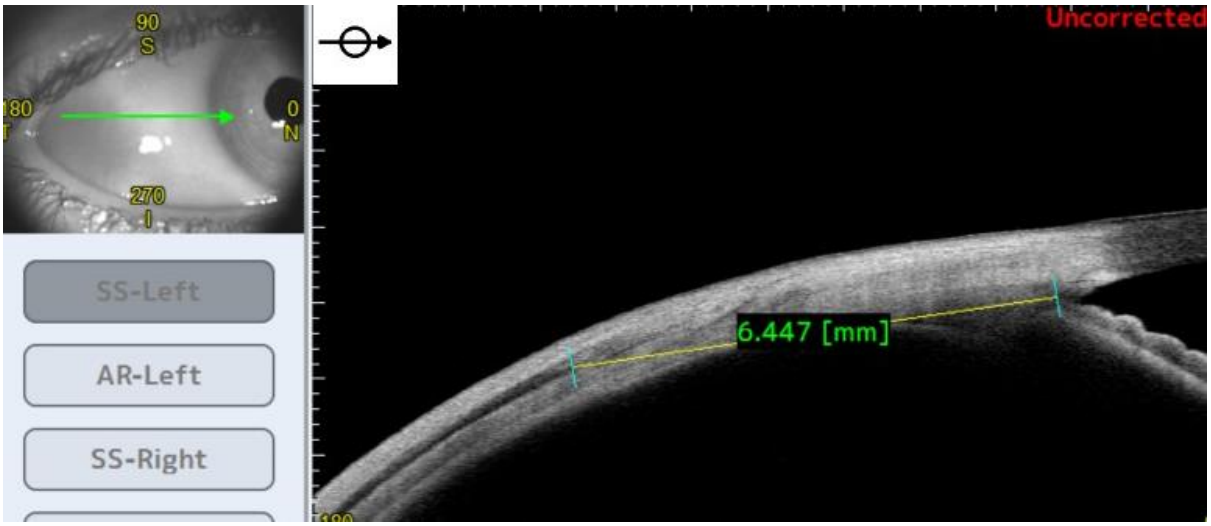

Figure 1 Showing insertion of the lateral rectus in the right eye of a patient. The tendon muscle complex is hypo-reflective and the first point of contact of the hyporeflectivity with the sclera is identified as the muscle insertion. The distance is measured from the limbus or the angle (in this case 6.447)

- Integrated intraoperative Anterior Segment OCT
    - Assess corneal lesions, extent of conjunctival lesions for intraoperative management and sparing of normal tissue
    - Assess glaucoma tube shunt drainage function

- Management of Descemets' detachment in congenital glaucoma
- Corneal dystrophies, corneal deposits, corneal scarring
- Use to evaluate and enhance intraocular and extraocular surgery

- When do I need to get a Posterior Segment OCT and which protocol should I obtain?
    - There are many different protocols available on each OCT machine. Depending on the patient's ability to cooperate during testing and the patient's condition, different protocols might be prioritized
    - The single line macular scan is the easiest to obtain and can give a lot of information about the integrity of the ganglion cell layer and the outer retina.
    - The classic retinal nerve fiber layer scan is the most reproducible and can be used to follow optic neuropathies but there are pitfalls that need to be taken into consideration

- How to use OCT in papilledema vs. pseudo-papilledema
    - Enhanced depth imaging of the optic nerve can show drusen vs. PHOMS
    - Upward bowing of the Bruch membrane is a sign of elevated retrobulbar pressure
    - The RNFL number could be falsely elevated in shorted eyes but the GMPE scan can correct it
    - Look for CNV next to the nerve

- How to use OCT in nystagmus
    - Single line scan through fovea can show foveal architechture and the integrity of the inner and outer retina

- Fun fact: I can measure torsion with OCT!

- Clinical use of OCTA (OCT Angiography)
    - OCTA can be highly useful in vascular disease e.g. Coats, retinal vasculitis, uveitis

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