

## ADVANCES IN OPHTHALMIC DIAGNOSTICS

Allah Almighty has blessed us with a unique organ, the eye, to see the world. It is second to none in its aesthetics and physiology. Protected by a beautiful curtain, the lid, which wipes the glassy cornea. All structures in the visual axis are not only transparent but also optically active to accurately focus all light rays to the fovea in order to obtain a clear image. The light entering eye is regulated by the pupil bordered by the most active muscle of the body, the iris. The flexibility of the lens (the structure with the highest protein content per gram) allows us to see objects at variable distances. Finally the retina, histologically brain tissue, supplied by the choroid which is the most densely perfused organ of the body.

Very few fields in medicine have progressed in diagnostics as has the field of Ophthalmology. The need for an ever evolving ever improving diagnostic arsenal stems from the complexity and uniqueness of the eye itself. For the retina, being the only place in the body where blood vessels can be directly visualised, fundus fluorescein angiography has been developed which enables us to observe the leakage of fluid from these vessels. This dynamic study of the retinal circulation is now being complemented by the use of optical coherence tomography (OCT). OCT is a technology that utilizes the coherence property of light waves to obtain live scans of the layers of the retina. To impress the reader further, let me add on the fact that these layers are histological layers which were previously studied only under microscopy of cadaveric samples. We can now obtain real time scans with a resolution in microns. A superhuman capability... sight beyond sight.

The impact of this technology has now gone beyond diagnostics. We are now categorizing and staging disease based on OCT and FFA features and then charting out treatment plans accordingly. We can also reliably predict response to treatment and prognosis. The science of Ophthalmology has now transformed from one that was largely subjective to one that is predominantly objective in its approach. This immense transformation in recent years leaves us only to marvel at what is yet to come!

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