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The Future of Ophthalmic Research

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Looking at the past allows us to know where we are now. This is true for the field of Ophthalmology. I remember my residency period which started in 1991. At that time most of cataracts were removed by Intracapsular Cataract Extraction (ICCE). After the availability of Intraocular Lenses (IOLs), we shifted to Extracapsular Cataract Surgery (ECCE). Then, years later, we shifted again to phacoemulsification with foldable IOLs. For our residents, ICCE is now history. They only see sporadic cases done years and years ago. But I remember those patients who had ICCE, with their heavy thick glasses that causes many optical distortions. Now, phacoemulsifacation and femtosecond laser cataract surgery give rapid visual rehabilitation, with no or little astigmatism compared to ECCE. Actually, we have achieved a great progress in the field of cataract surgery. But, is this the end? I do not think so. Can we, at some time, be able to treat cataract medically? Can we treat cataract by eye drops? I may be dreaming, but this may happen in the future. Let's think differently. Do not be imprisoned in the current knowledge. All of us remember Isaac Newton and his apple. Apples fell on the heads of millions of people before him but it was Isaac Newton who asked himself why the apple went down and not up. Then he formulated his theory of gravitation, why? Because, he was thinking differently.

Although we had made a great progress in retinal diseases, both in diagnostic and surgical techniques, there are still many retinal diseases without cure. I started my retina fellowship in Michigan (USA) with Associated Retinal Consultants in 1997. There was a great progress in these days in the field of surgical retina. But where are we now? Do we have a perfect cure for diabetic retinopathy, for example? When I look at the year 1997 and now, I find that the progress we made is mainly in intravitreal injections (triamcinolone, bevacizumab, and ranibizumab) and in the development of better surgical machines and smaller gauge vitrectomy systems (23 and 25 gauge). But we need a lot of work and research to find a cure for many of the retinal diseases such as diabetic retinopathy and age-related macular degeneration. Many randomized trials had shown that laser is beneficial for the treatment of diabetic macular edema and high-risk proliferative diabetic retinopathy [1-3]. But, laser is a destructive treatment and all intravitreal injections are temporizing agents with a temporary effect. We still need to think differently to find new treatments for these disorders. We still have a lot of work to do.

What about glaucoma? Do we really have a perfect medical or surgical treatment for glaucoma? I do not think so. Again, we have to think differently and we have a lot of work to do.

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