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Diary of a Cataract Surgeon 2045

Claire E. McDonnell

Technological University Dublin, claire.e.mcdonnell@dit.ie

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Diary of a cataract surgeon 2045

Claire McDonnell imagines cataract surgery 30 years into the future

My first patient of the day is a recently retired 80-year-old woman who had been using topical antioxidants for the last 10 years to delay lens opacification, but she was recently required by police to take an eyesight test having driven into the exit lane of a tunnel. She passed the acuity test but did not meet the ocular straylight and contrast sensitivity standards and therefore she is obliged to undergo cataract surgery.

We discuss various options and in the end she chooses the budget option of a bag-in-the-lens multifocal IOL. I explain to her that the corneal incisions, the anterior and posterior capsulotomies and the nucleus chop will be done by an optometrist operating a femtosecond laser and that I will then step in to do the lens removal and IOL implantation. She asks if the implant can be replaced if she does not have perfect vision postoperatively. I explain that the power of IOL will be calculated based on readings taken during surgery and the IOL will then be 3D printed and sterilised before being implanted so the likelihood of her having less-than-perfect vision is minimal.

My next patient is late and so I reflect a little on how cataract surgery has changed in the past 30 years. Bag-in-the-lens implantation has virtually eliminated posterior capsule opacification and although it was first conceived in the early 2000s, it only really became widespread in some countries) nurses became more heavily involved in cataract surgery as the size of the elderly population grew and the number of ophthalmologists trained surgeons, but high equipment costs and a lack of qualified technicians to service the equipment meant that this idea was never realised. Another disadvantage is the fact that there is extra training required to become a remote-hands surgeon compared to that of a real-hands-only surgeon.

Later that day as I drive home from work I listen to a medical podcast and I hear an interesting piece about an ophthalmologist in the Middle East who has carried out cosmetic refractive lens exchange on a patient. The surgeon has implanted an IOL containing a diamond into a patient’s eyes. Because the refractive index of diamond is so much higher than that of the aqueous and vitreous, it has created a very strong Purkinje image which gives the appearance of a ‘twinkle’ in each eye. I marvel at people’s vanity and wonder to myself if the world has gone completely mad.

References
Optics of the future


Claire McDonnell is a lecturer in the Department of Optometry at the Dublin Institute of Technology, with special interests in refractive surgery and advanced clinical techniques.