PREMIUM INTRAOCULAR LENSES: PATIENT SATISFACTION

KARIN HORVÁTH[1], DIANA CONSTANTINESCU[2], FLORINA VULTUR[3], GHEORGHE MÜHLFAY[4]

[1,2,3]Ophthalmology Clinic, University of Medicine and Pharmacy Tîrgu-Mureş, [4]University of Medicine and Pharmacy Tîrgu-Mureş

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Abstract: *Recently, advanced technology of cataract surgery entails high expectations from the patients. The appearance of Premium intraocular lenses, due to their exceptional qualities, involves a perfect surgery. They are implanted only on the recommendation of an experienced ophthalmologist and after careful preoperative counselling of patients.*

Cuvinte cheie: *cataractă, chirurgie refractivă, cristaline artificiale Premium, presbiopie*

Rezumat: *În ultima perioadă, tehnologia avansată a operaţiei de cataractă atrage după sine aşteptări crescute din partea pacienţilor. Apariţia cristalinelor artificiale Premium, datorită calităţilor excepţionale pe care acestea le au, implică realizarea unei operaţii perfecte din punct de vedere chirurgical. Aceste tipuri de lentile se implantează numai la recomandarea unui oftalmolog cu experienţă, obligatorie fiind o atentă consiliere preoperatorie a pacienţilor.*

Cataract surgery has become the most frequently performed surgery in the world. The age limit of 60-70 years old considered the usual age for cataract surgery nowadays decreased to 40 years of age. Therefore, cataract surgery becomes „clear lens extraction" in refractive purposes. Presbyopia is a physiological disorder of near vision accommodation that appears around the age of 40-45, due to decreased elasticity of the lens and progressive decrease of accommodative amplitude. The problem of presbyopia is a current topic for „postwar baby boomers" generation in the United States, but also for the most part of active population from Romania.(1,2) The following alternatives for surgical correction of presbyopia are performed: phacoemulsification with multifocal implants (Restore, Rezoom) and accommodative implants (Cristalens) or monovision monofocal implants; LASIK (laser stromal in situ keratomileusis) monovision with correction of dominant eye for distance and correction of nondominant eye for near vision; LASIK multifocal (PresbyLASIK); IntraCor (noninvasive technique which uses intrastromal femtosecond laser); Corneal Inlays (thin lenses inserted into the cornea) Kamra type (with the same operating principle as the camera), Invue, Flexivue; Corneal Onlays (superficial collagen implants).

Premium intraocular lenses (IOL) have special qualities and are divided into: multifocal IOLs (allowing the patient in 99% of cases, not to wear glasses after surgery, neither for distance nor for near vision, they have aspherical structure and protective yellow filter); multifocal toric IOLs (which, in addition to the features mentioned above, can correct preoperative astigmatism), accommodative IOLs (which simulates natural accommodative process, thus helping to correct presbyopia). While in the United States, 14.7% of patients prefer Premium lenses implant, with a tendency to increase in certain clinics up to 25-30%, the percentage is lower in Europe (7.8%).(3) Current trend is to provide lens extraction with Premium IOL implantation to the presbyop patient rather than refractive alternative of LASIK, because for the long term the patient will have maximum benefits.

Preoperative evaluation is similar to that of corneal refractive surgery and consists of: ophthalmological objective exam, macular optical coherence tomography, keratometry, corneal topography, corneal aberration test (Wavefront analysis) before instillation of anaesthetics or mydriatics, corneal endothelial cell counting, biometry. Phacoemulsification and Premium IOL implantation does not differ from the usual technique (anaesthesia, sideports, clear corneal incision, capsulorrhexis, hydrodissection, hydrodelineation, phacoemulsification, implantation in optimum position of IOL); still a good technique of lens centering (alignment and diameter) is important. In younger patients with „Clear Lens Exchange" it is very important to know the technique of soft nucleus extraction and to position the lens properly. Corneal incision must be tight, otherwise wound dehiscence will change the right position of accommodative IOL's, and if it is necessary, suture wound can be performed. Also, care should be taken to proper cleaning of capsular bag, at multifocal centring in the visual axle, nasally to the corneal centre, which would be achieved by placing the pseudophakia at the 6-12 o'clock position, to preoperative diagnose of pseudoexfoliation syndrome with decentring danger. It's important to prevent postoperative cystoid macular edema by administering topical non-steroidal anti-inflammatory drugs (NSAIDs) for three days preoperatively and three months postoperatively, to the posterior capsular opacification or fibrosis, to the preoperative treatment of blepharitis with Azithromycin (4), to preoperative and postoperative treatment of ocular surface disease syndrome with Cyclosporine.(5-8)

Among postoperative complications we'll refer to the posterior capsular opacification (PCO) and dysphotopsias appearance. PCO occurs in up to 40% of patients anyway, with

[1]Corresponding author: Vultur Florina, Str. Marton Aron, Nr. 26, 540082 Tîrgu-Mureş, România, Tel: +40723 564399 Email: florina_doc@yahoo.com
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any type of lens implant, varying only the time of its installation.(9) At the multifocals, PCO will decrease contrast sensivity.(10-12) At the accommodative IOLs, capsular fibrosis will favor myopic shift; intraoperative correct positioning requires placement of the haptics to the bag's equator, and the curved optic to the posterior capsule. Nd:YAG laser capsulotomy is recommended as soon as significant symptoms begin, though generally not before three months postoperatively to reduce the risk of cystoid macular edema. Practically, every patient with multifocal implants will have some degree of dysphotopsia, glare and postoperative halos. Therefore, the patient is preoperatively informed of this issue; also reassure patients that dysphotopsias always become less bothersome with time, and exclude other causes that may worsen these symptoms: decentration of the lens, posterior capsular opacification, residual refractive error and ocular surface problems, applying the appropriate treatment. Finally, show them what „monofocal" vision with an „old fashioned" implant would have been like by putting him a correction of -2.5 Dsph. The incidence of dysphotopsias differed drastically when patients were directly asked about it (20 to 77%), while only 0.2-1.5 % reported spontaneous, unasked for their existence. Unfortunately, about 10% of patients with these lenses will be significantly bothered by these symptoms.(13-18)

Correcting residual refractive error is extremely important. Patients with Premium lenses can be sensitive to even 0.5D of residual astigmatism. Relatively small residual spherical dioptres bother some patients (some of them feels very well with +0.75D residual refraction, even +1.00D, others are deeply unhappy at +0.25D). Refractive procedures LASIK or PRK (photorefractive keratectomy) should be an option available to any surgeon who uses Premium implants, the recommendation: „who has not yet invested in corneal refractive surgery is time to do it", or at least have access to someone who can do it for them, because 10% of implants require a readjustment.(19) However, these procedures should be used only after other causes of dissatisfaction (PCO, lens decentration, ocular surface disease syndrome) have been ruled out. For safety, before the procedures it is highly valuable to simulate what the vision will be like after LASIK or PRK, by asking the patient to wear a contact lens for one or two days.

Regarding financial management of these surgeries, it is recommended that the price to be realistic because the intervention requires effort, precision and risks that the patient will not be fully satisfied. To avoid problems related to the subsequent refractive correction, some include refractive surgery in the first price.

Preoperative counselling of patients remains the crucial factor in the success of the surgery. Regardless the experience of the surgeon and despite all efforts, there will always be a small, but a „vocal" group of unhappy patients. A study shows a massive predominance of Internet posts of patients with multifocal implants versus monofocals. It is well to adopt a useful preoperative strategy: „promise less and offer more".

With his questionnaire, Steven Dell offers a way to help patients understand that there is no artificial lens that can promise everything.(20,21) Dell's questionnaire has some hidden secrets that must be taken into account (R. Tipperman, 2013): the patient who does not want to answer the questionnaire raises questions of further compliance; a great advantage of this questionnaire is that it requires the patient to ask about his visual preferences; the personality scale can be misleading sometimes. The perfectionist can be an ideal candidate for Premium implants when he receives plausible technical explanations. Easygoing patient may at first influenced by subjective factors (media information) and highly motivated (financial factor is not an issue to them) „pre-sold". He is not interested of too many explanations, but if the result is not the expected one, he is unhappy. However, postoperative complications are easily solved when a patient is indulgent, compared to perfectionist.

Patients treated with antidepressant medication are contraindicated for Premium implants even if they are compensated for the moment.

To increase the rate of Premium IOLs implantation, Dr. John Hovanesian from California, where 75% of patients with cataract chose Premium, recommends: do believe in the technology because a surgeon with reserves does not recommend these implants with enthusiasm; understand the importance of the discussion: do not begin the discussion by asking whether the patient is interested in a Premium implant, instead explain the benefits of a high-tech lens; match the technology to the patient (multifocal versus accommodative); the surgeon do the education (not brochures, videos or information from others members team); keep it simple, not technical terms, use terms and practices that the patients are more likely to understand and apply in their daily lives („there is a new implant who cannot guarantee a life without glasses, but they are designed to give you a much better ability to drive and read without glasses"); know the technologies and comparative presentation; work with surgeons who offer excimer laser or piggyback IOL enhancements at no charge, when needed; be clear about limitations (e.g. „Do not expect perfect. Many people can read a newspaper, but if they are going to read it cover-to-cover, they might prefer to wear reading glasses."); be clear about extra costs; what type of lens would you recommend to your family members.(20)

Conclusions:

Regarding Premium implants, even if the patient is already decided and apparently informed about these artificial lenses (Internet access, AS Formula or media), preoperative counselling is crucial, which requires time and conditions. Dell's questionnaire is nevertheless useful, but recognition of a patient's personality cannot be obtained at a single discussion. Surgical consent must be a special one. Adjusting residual refraction must be accessible to the surgeon. Assistance and support from the company that produces Premium artificial lenses are essential because they are considered a luxury and not a medical necessity.

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