

Ethical issues with cataract surgery in patients with macular degeneration. A graduating resident's view point

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Abstract. Modern cataract surgery is considered to be a successful procedure, with a low complication rate. During cataract surgery, a patient's cloudy natural lens is removed and replaced with an artificial intraocular lens implant to restore the lens's transparency. The goal of cataract surgery is to achieve improvement in visual acuity necessary to help the patient with activities of daily living and improve the quality of their life. Macular degeneration is a multifactorial syndrome with different causative factors that results in a loss of vision in the center of the visual field (the macula) because of damage to the retina, being a major cause of blindness in the elderly over 50 years in the western world. Macular degeneration can make it difficult or impossible to read or recognize faces, although enough peripheral vision remains to allow the development of other everyday activities. It occurs in "dry" and "wet" forms. The decision to perform cataract surgery in patients with macular degeneration presents with ethical issues and dilemmas for the surgeons involved in the care of the patient with posterior segment problems like macular degeneration. Good doctor-patient communication is essential to get the most benefit from the ophthalmologist, who provides care that is scientific, considerate, and compassionate. The ophthalmologist should serve as the patient's advocate, marshaling his resources for the patient's benefit, to maintain the quality of patient life. A biopsychosocial approach is philosophically very close to a systemic view and the development of adequate communication skills is now an aim of training programs, because a good medical care should be a partnership between patient and doctor.

Key words: cataract, macular degeneration, physician-patient relation, psychosocial approach.

Rezumat. Chirurgia modernă a cataractei este considerată a fi o procedură de succes, cu o redusă rată de complicații. În timpul operației de cataractă, cristalinul natural afectat al unui pacient este eliminat și înlocuit cu un implant de cristalin artificial pentru a restabili transparența cristalinului. Obiectivul operației de chirurgie a cataractei este de a realiza îmbunătățirea acuității vizuale necesare pentru a ajuta pacientul în activitățile zilnice și de a îmbunătăți calitatea vieții acestuia. Degenerescența maculară este un sindrom multifactorial cu diferiți factori cauzali care conduce la o pierdere a vederii în centrul câmpului vizual (macula), din cauza deteriorării retinei, fiind o cauză majoră de orbire la vârstnici peste 50 de ani, în occident. Degenerescența maculară poate face dificilă sau imposibilă citirea sau recunoașterea chipurilor, cu toate că vederea periferică rămasă permite desfășurarea altor activități de zi cu zi. Această afecțiune poate avea forme "uscate" și "umedă". Decizia de a efectua operația de chirurgie a cataractei la pacienții cu degenerescență maculară prezintă probleme de etică și dileme pentru chirurgii implicați în îngrijirea pacientului cu probleme legate de segmentul posterior, cum ar fi degenerescența maculară. Comunicarea medic-pacient este esențială pentru a obține cele mai mari beneficii de la un oftalmolog, care oferă atât îngrijire științifică, dar și afectivă. Oftalmologul ar trebui să servească drept avocat al pacientului, punându-și resursele sale în beneficiul pacientului, pentru a menține calitatea vieții acestuia. O abordare biopsihosocială este filosofic foarte aproape de o vedere sistemică și dezvoltarea competențelor de comunicare adecvate constituie un obiectiv al programelor de învățare, deoarece o bună îngrijire medicală este un parteneriat între pacient și medic.

Cuvinte cheie: cataractă, degenerescență maculară, relația medic-pacient, abordare psihosocială.

Introduction. Degeneration of the macula is a multifactorial process involving a complex interplay of genetic and environmental factors, being the leading cause of legal blindness in people over fifty-five in the western world (Edward 2002; Samuel 2008).

Macular degeneration is a chronic, slow, progressive and painless disease that affects the macula, the light sensing tissue at the center of the retina. The exact causes

of macular degeneration are not fully understood, although research still continues (Leibowitz et al 1980; Rovner et al 2002).

Patients with dry macular degeneration and geographic choroidal atrophy often have adequate distal central vision due to a small island of preserved photoreceptor and they are able to function independently.

Age related macular degeneration affects many quality of life related activities and not just those related to reading (Williams et al 1998; Hassell 2006).

Cataract is the most common of the age-related eye disease that is often responsible for vision impairment in an aging population (Klaver et al 1998).

Cataracts can result from genetic, metabolic, nutritional or environmental insults, or they may be secondary to other ocular or systemic diseases such as diabetes or retinal degenerative diseases (Malhotra 2008).

Cataracts can present different histopathologic changes that can involve any of the structures of the lens, including the nucleus, cortex, and anterior and posterior subcapsular areas (Steinert 2004).

The potential benefits or risks of cataract surgery in macular degeneration patients have not been adequately determined, and the opinions are divided between ophthalmologists (Shuttleworth et al 1998; Armbrecht et al 2000 and 2003; Abitbol et al 2004; Lamoureux et al 2007).

Loss or decrease in this useful vision due to significant cataract may hamper their activities of daily living and independence.

Often utilization of ancillary diagnostic aids may help in the process of surgical decision making to evaluate potential for post-operative visual improvement. These include refraction, red green test, color vision test, PAM (potential acuity meter, Mentor Inc. Mass. USA) and use of Lotmar Visometer (Haag-Strait Inc. Bern. Switzerland) or laser interferometer (Rodenstock Instruments, Germany) (Bernth-Peterson & Naeser 1982; Bryant 1985).

Other co-existing ocular diseases may make it necessary to perform cataract surgery in patients with macular degeneration. These may include phacolytic glaucoma, dense vitreous hemorrhage due to proliferative diabetic retinopathy, retinal vein occlusion, peripheral neovascularization, and neovascular glaucoma from anterior and posterior ischemic syndrome.

The presence of cataract may hamper localization of retinal tears with retinal detachment or laser photocoagulation, requiring cataract surgery first or combined procedures in these patients. Suspected intraocular tumors or lymphoma requiring a clearer view to perform fine needle aspiration biopsy or diagnostic or therapeutic vitrectomy may also require cataract surgery first.

Some patients with macular degeneration may benefit with low vision aid like a Galilean telescope, allowing them to be able to drive if they meet local driving safety standards, and will allow them to read smaller print and sign checks or other documents (Peli 2002).

Some of our colleagues have advocated implantable telescopes using minus power IOL in combination with plus power contact lens or spectacle correction. In these instances, cataract surgery is recommended. It is very comforting for the patient undergoing any surgery to reassure them that we are not surgical technicians but "surgically competent" physicians. This involves discussion with the patient about other medical co-morbidities, detailed history and physical examination including medications history as they may have an adverse surgical outcome or may require modification of surgical technique.

If patients are on anticoagulants, consultation with the patient's internist, cardiologist, or family physician, becomes important in deciding whether to temporarily suspend these medications to avoid catastrophic operative complications.

During pre-operative evaluation by the operating surgeon, presence of other ocular conditions like pseudoexfoliation may require use of capsular tension ring during surgery for a better surgical outcome (Belovay et al 2010).

Recent knowledge about floppy iris syndrome due to use of Tamsulosin HCl (FlowMax) an alpha 1A antagonist for the treatment of BPH has made us aware of

surgical complications. We are fortunate to have in our armamentarium instruments like pupillary expansion ring, iris hooks or Malyugin ring (MicroSurgical Technology, Redmond, WA 98052, USA) for dealing with this problem.

Over the last years different novel therapies to treat macular degeneration have been developed; following these therapies becomes important and if we need to have follow-up with optical coherence tomography (OCT), clearer view of the pathology warrants that cataract surgery to be performed in these patients (Tălu et al 2009).

Ethical Aspects. The relationship by the ophthalmologist with a patient during a clinical encounter is the gist of medicine, that leads to a harmony of understanding so necessary for successful medical therapeutics and to respond to the patient's feelings and fears, perceptions and expectations (Dawn & Lee 2004; Pesudovs 2006).

It is known that effective doctor-patient communication is related to characteristics of patients (age, sex, education, social class, the patient's life context and prognosis), doctors (experience, the use of intuition, income, social-class background and perception of patients' desire for information), the real clinical situation (number of patients seen in a day), continuity of care and behavioral management (Waitzkin 1984).

Gathering information, developing a therapeutic relationship and providing information is essential in humanization and optimizing of the communication between doctors and patients (Epstein et al 1993).

Patients with macular degeneration are very apprehensive about eye surgery and they have real fear of losing their functional vision. Discussion about informed consent involves their family members, who are often their caregiver and refers to the importance of providing diagnostic information and therapeutic recommendations to patient in a simple language that they can understand and put into action.

It is very reassuring and comforting for an apprehensive patient that you or your trusted surgically trained colleague will be there to provide post-operative care according to the ethical code and standards of practice as promulgated by our specialty society and college of surgeons.

It is hopeful that future research will elucidate further the illness causes, treatments and prevention, as well as additional ways to rehabilitate the persons who have lost their vision from the advanced stages of macular degeneration (Mitchell & Bradley 2006). And as always, we practice by dictum "help someone and do no harm".

References

- Abitbol O., Nghiem-Buffet M. H., Badelon I., Fajnkuchen F., Chaine G., 2004 Should patients with age-related macular degeneration have cataract surgery? *J Fr Ophthalmol* **27**:3S87-3S92.
- Armbrecht A. M., Findlay C., Aspinall P. A., Hill A. R., Dhillon B., 2003 Cataract surgery in patients with age-related macular degeneration: one-year outcomes. *J Cataract Refract Surg* **29**(4):686-693.
- Armbrecht A. M., Findlay C., Kaushal S., Aspinall P., Hill A. R., Dhillon B., 2000 Is cataract surgery justified in patients with age related macular degeneration? A visual function and quality of life assessment. *Br J Ophthalmol* **84**(12):1343-1348.
- Belovay G. W., Varma D. K., Ahmed I. I. K., 2010 Cataract surgery in pseudoexfoliation syndrome. *Curr Opin Ophthalmol* **21**(1):25-34.
- Berth-Peterson P., Naeser K., 1982 Clinical evaluation of the Lotmar Visometer for macula testing in cataract patients. *Acta Ophthalmol (Copenhaga)* **60**(4):525-532.
- Bryant W. R., 1985 The Haag-Streit Lotmar Visometer for determining macular potential prior to cataract surgery. *J Am Intraocul Implant Soc* **11**(6):581-583.
- Dawn A. G., Lee P. P., 2004 Patient expectations for medical and surgical care: a review of the literature and applications to ophthalmology. *Surv Ophthalmol* **49**(5):513-524.
- Edward L. P. Jr., 2002 *Conquering Macular Degeneration: The Latest Breakthroughs and Treatments*, pp. 13-25, Trafford Publishing, Canada.

- Epstein R. M., Campbell T. L., Cohen-Cole S. A., McWhinney I. R., Smilkstein G., 1993 Perspectives on patient-doctor communication. *J Fam Pract* **37**:377-388.
- Hassell J. B., Lamoureux E. L., Keeffe J. E., 2006 Impact of age related macular degeneration on quality of life. *Br J Ophthalmol* **90**:593-596.
- Klaver C. C., Wolfs R. C., Vingerling J. R., Hofman A., de Jong P. T., 1998 Age-specific prevalence and causes of blindness and visual impairment in an older population: the Rotterdam Study. *Arch Ophthalmol* **116**(5):653-658.
- Lamoureux E. L., Hooper C. Y., Lim L., Pallant J. F., Hunt N., Keeffe J. E., Guymer R. H. 2007 Impact of cataract surgery on quality of life in patients with early age-related macular degeneration. *Optom Vis Sci* **84**(8):683-688.
- Leibowitz H. M., Krueger D. E., Maunders L. R., Milton R. C., Kini M. M., Kahn H. A., et al., 1980 The Framingham Eye Study monograph: an ophthalmological and epidemiological study of cataract, glaucoma, diabetic retinopathy, macular degeneration, and visual acuity in a general population of 2631 adults, 1973-1975. *Surv Ophthalmol* **24**:335-610.
- Malhotra R., 2008 Cataract, pp. 2-15, Butterworth Heinemann/Elsevier, Edinburgh.
- Mitchell J., Bradley C., 2006 Quality of life in age-related macular degeneration: a review of the literature. *Health Qual Life Outcomes* **4**:97.
- Peli E., 2002 The Optical Functional Advantages of an Intraocular Low-Vision Telescope. *Optometry & Vision Science* **79**(4):225-233.
- Pesudovs K., 2006 Patient-centered measurement in ophthalmology - a paradigm shift. *BMC Ophthalmol* **6**:25.
- Rovner B. W., Casten R. J., Tasman W. S., 2002 Effect of depression on vision function in age-related macular degeneration. *Arch Ophthalmol* **120**(8):1041-1044.
- Samuel M. A., 2008 Macular Degeneration: A Complete Guide for Patients and Their Families, pp. 19-49, Basic Health Publications Inc., Laguna Beach, CA, USA.
- Steinert R. F., 2004 Cataract Surgery: Techniques, Complications, Management, pp. 1-9, Elsevier / WB Saunders, 2nd ed., USA.
- Shuttleworth G. N., Luhishi E. A., Harrad R. A., 1998 Do patients with age related maculopathy and cataract benefit from cataract surgery? *Br J Ophthalmol* **82**(6):611-616.
- Țălu Ș., Baltă F., Țălu S.D., Merticariu A., Țălu M., 2009 Fourier Domain - Optical Coherence Tomography in diagnosing and monitoring of retinal diseases. IFMBE Proceedings MEDITECH 2009, Cluj-Napoca, Romania, **26**:261-266. Publisher Springer-Verlag GmbH, Heidelberg, Germany.
- Waitzkin H., 1984 Doctor-patient communication. Clinical implications of social scientific research. *JAMA*, **252**(17):2441-2446.
- Williams R. A., Brody B. L., Thomas R. G., Kaplan R. M., Brown S. I., 1998 The psychosocial impact of macular degeneration. *Arch Ophthalmol* **116**:514-520.

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