A Primary Care Provider's Guide to Cataract Surgery in the Very Elderly

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Planning for cataract surgery and perioperative care in the very elderly requires the teamwork of the patient's primary care provider and the ophthalmologist.

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Cataract surgery is the most commonly performed surgical procedure in the US, including within the Veterans Health Administration (VHA).[1,2] As the risk of surgical complications has decreased with improved techniques and instrumentation, the threshold for performing surgery has lowered.[3] A substantial number of patients do not develop clinically significant cataracts until they are "very elderly," defined as aged ≥ 85 years by the World Health Organization and National Institute of Aging.[4]

Should the general approach to cataract evaluation and surgery differ in this subset of patients? Advanced age is associated with a variety of systemic and ocular comorbidities that theoretically increase the risk of cataract surgery and reduce the potential visual benefit it might yield. However, the impact of age on the outcomes of cataract surgery differs even among the very elderly. There are no universally acknowledged guidelines that address the perioperative evaluation and management of cataracts in the very elderly, whose systemic and ocular health have greater variability than those of their younger counterparts. For very elderly patients who are found to have visually significant cataracts by their ophthalmologists, input from the primary care provider (PCP), who has insight into a patient's health and well-being, is vital for formulating a management plan. Herein, we provide a framework for PCPs to assist very elderly patients and their ophthalmologists in making an informed decision regarding cataract surgery and in planning for perioperative care.

CATARACT SURGERY

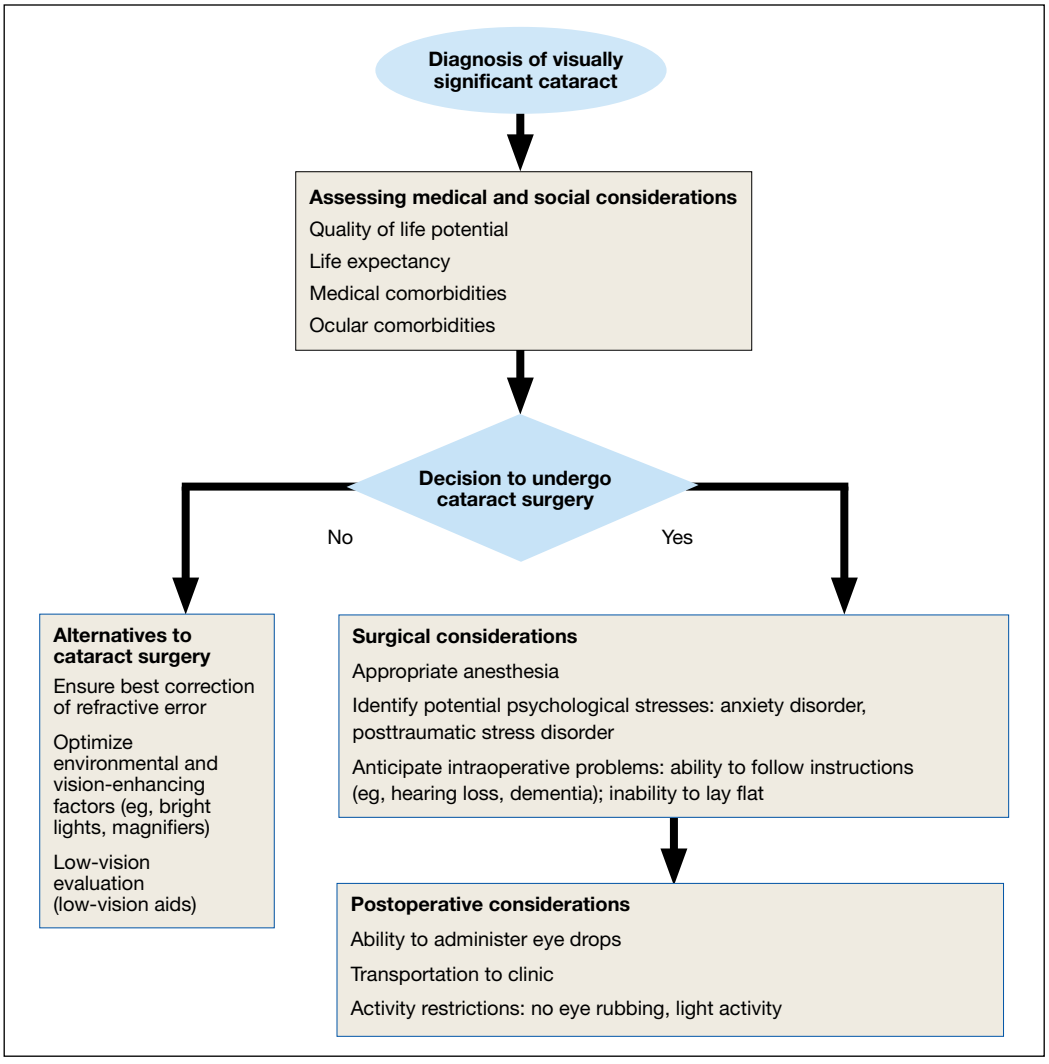
Cataract surgeons recommend surgical extraction when there is a clinically significant lens opacity that imposes functional impairment, such as inability to read, perform near work, watch television, or drive.[4] The standard of care for a clinically significant cataract is surgical removal of the crystalline lens and replacement with an artificial intraocular lens (IOL). At times, the onset of vision loss from a cataract is insidious such that patients may not be aware of their declining vision or the deterioration in quality of life (QOL) that it causes.

Despite the higher burden of ocular comorbidity (eg, age-related macular degeneration, glaucoma) relative to their younger counterparts, most very elderly patients obtain functionally important improvement in their vision, QOL, and cognitive function after surgery.[5-16] Cataract surgery can also reduce the risk of dementia and the risk of falls and hip fractures.[6,9,12-14,16-18] Ophthalmic complications of cataract surgery in the very elderly include posterior capsule tear (< 1%-9%), vitreous loss (< 1%-8%), zonular rupture (2%-5%), and retained lens fragments (≤ 1%).[5,8-11,17,19-21] There is no evidence from well-controlled studies that suggests that very elderly cataract surgery patients are at higher risk of ocular complications relative to that of their younger counterparts.[22]

Surgery Alternatives

In some very elderly patients, cataract surgery may not be the best option, and PCPs can aid in establishing an alternative plan. Such patients include those with a limited life expectancy, incapacitating anxiety over surgery, or those in whom the potential for visual improvement is marginal because of ocular or systemic comorbidities—eg, vision-limiting glaucoma or age-related macular degeneration, history of stroke to

FIGURE Cataract Management Algorithm for Very Elderly Patients



the visual pathway, or restriction to bed. Alternatives to cataract surgery in these instances include changing environmental conditions to improve visual function, such as enhanced lighting and contrast, and/or use of low-vision aids (referring patients to low-vision professionals often improves QOL).[23] Low-vision specialists also have a variety of nonvisual aids that can expand functional capabilities: large-print and talking versions of reading materials, telephones, remote controls, clocks, scales, calculators, and glucose monitors; glare-free lights for stairs, floors, and counters; and specialty glasses that use light-emitting diode screens and live video streams to magnify sight.[23-25]

Medical Evaluation

For patients who decide to proceed with surgery, it can be helpful to have a medical evaluation by their PCPs to minimize potential complications during surgery. The very elderly may be at increased risk of intraoperative transient hypertension, restlessness, and electrocardiogram abnormalities.[5,7,17] Systemic comorbidities that become more prevalent with age, such as diabetes mellitus (DM), hypertension, heart disease, chronic obstructive pulmonary disease, and dementia, may adversely impact the risk of sedation and/or general anesthesia. In the VHA, providers also must be aware of combat-related disorders that can confound cataract surgery, such as posttraumatic stress disorder

(PTSD), anxiety, and claustrophobia.[26,27]

Anesthesia in cataract surgery ranges from topical to general, and the selection largely rests on patient physical and psychological comfort and cooperation. Often, intracameral (inside the anterior eye) anesthetic is used with topical anesthesia to provide additional comfort.[27] Patients who have high levels of anxiety about surgery may not tolerate topical anesthesia alone.[28] In these cases, retrobulbar anesthesia may be performed to block all sensation and motility of the eye. IV sedation is performed prior to the retrobulbar injection to calm patients. Although cataract surgery is typically performed with topical or retrobulbar anesthesia (reducing the potential for systemic complications), there are cases in which general anesthesia may be considered.[27] Very elderly patients may become confused or disoriented in the operating room (OR), leading to surgical complications and less than optimal outcomes.[5] A higher rate of intraoperative "restlessness," which occurred in patients who had comorbid dementia, and transient hypertension were found in a study on cataract surgery in the very elderly, but well-controlled studies are lacking.[5] Dementia can impose problems with intraoperative cooperation, which is vital for successful surgery in patients who undergo topical or local anesthesia. If these potential problems are thought likely preoperatively, light sedation or general anesthesia—in conjunction with input from the patient's PCP—are options to minimize disruptive behavior in the OR.

Additional features of the VHA population may influence the selection of anesthesia. The VHA has an important educational mission, and retrobulbar anesthesia may be preferred to minimize unpredictable intraoperative behavior in cases where resident surgeons are performing surgery under attending supervision.[27,29,30] The prevalence of PTSD among veterans also may impact the selection of anesthesia. Patients with PTSD have displayed greater levels of anxiety and more discomfort, requiring more sedation and longer surgical times compared with that of a control group.[28] Ophthalmic comorbidities prevalent among the predominantly older male population in the VHA include the use of α-1 antagonist prostate medications, such as tamsulosin and terazosin. These medications are associated with intraoperative floppy iris syndrome, which can increase case difficulty and prolong operative time.[29]

Surgery Preparation

Cataract surgery induces minimal physiologic stress since most surgeries are performed under local or topical anesthesia. Unless the preoperative medical history or physical examination detects an active or unattended medical condition that needs to be addressed, preoperative laboratory testing is generally not required.[31-33] Current general guidelines for preoperative testing for cataract surgery exist but do not address specific issues facing very elderly patients. The American Academy of Ophthalmology advises against preoperative medical tests for eye surgery unless there are medical indications: an electrocardiogram for patients with a history of heart disease, a blood glucose test for those with DM, and a potassium test for patients who are on diuretics.[31] The direct correlation of age with these comorbidities may translate into higher rates of preoperative testing among very elderly patients. In the VHA, 45% of ophthalmology services studied routinely performed preoperative electrocardiography, chemical analysis, and complete blood counts prior to performing cataract surgery.[27] Patients who live with chronic bacterial colonization from indwelling catheters, ostomies, or bed sores need to be given instructions for proper hygienic practices to minimize risks of postoperative infection.[34]

Some patients undergoing cataract surgery may not be candidates for topical or local anesthesia alone. Sedation is often used to reduce anxiety and discomfort of surgery, but very elderly patients have narrower margins of therapeutic safety because of advanced aged or medical comorbidities. Since patients need to follow basic commands in the OR for ideal surgical execution, general anesthesia may need to be considered for those with dementia, deafness, anxiety attacks, or language barriers. Although there are no published investigations on the risks of general anesthesia in patients undergoing cataract surgery, a procedure with minimal blood loss and relatively short surgical time, age alone is not a contraindication for general anesthesia.[35] Communication among eye surgeons, PCPs, and

anesthesiologists is needed to weigh the risk of surgery with the level of sedation (or anesthesia) required to guarantee a controlled OR environment.[31]

Postsurgical Care

Although cataract surgery is a less invasive procedure than it was in the past, full postoperative recovery regularly spans a month. During this time, proper healing relies on the regular administration of eye drops and a refrain from heavy lifting, straining, and eye rubbing. Very elderly patients may need varying degrees of assistance with postsurgical care. For example, adherence to the regimen of eye drops can be complicated by decreased dexterity from arthritis and difficulty remembering the administration schedule in some patients. Reliable transportation also is an important factor as patients are routinely scheduled for postoperative visits at the 1- day, 1-week, and 1-month mark. PCPs can assist in ensuring patients have prearranged assistance for eye care and transportation to and from appointments. Additionally, very elderly patients with a history of constipation may benefit from stool softeners and/or laxatives to help prevent straining.

CONCLUSION

The limited literature on clinical outcomes of cataract surgery in the very elderly indicates that most have successful surgery and improved postoperative QOL.[22] Much of the benefits derived from cataract surgery in the very elderly can be ascribed to thoughtful preoperative evaluation and planning with the PCP. A summary of pertinent considerations is presented in an algorithm showing the interdisciplinary flow of decision making and management of very elderly patients with significant cataracts (Figure). This collaboration includes but is not limited to the decision to proceed with surgery, a discussion of alternative options, medical optimization prior to surgery, selection of appropriate anesthesia, and ensuring sufficient support for postoperative care.

Author disclosures

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