Concise Practice Points

Cataract surgery in patients living with Dementia

The ROYAL COLLEGE of OPHTHALMOLOGISTS

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Introduction

Cataract surgery in patients with dementia is recognised as a complex area of decision-making and peri-operative considerations. In the UK, there are over 850,000 people living with dementia, set to rise to 1.5 million people by 2040[1] and is now a recognised worldwide public health priority[1–4]. Literature review and expert opinion shows the need for a 'sooner rather than later' approach to maximise the cognitive benefits of sight restoration while reducing risk of post-operative cognitive dysfunction (POCD) [5,6,7]. Cataract extraction is significantly associated with lower risk of dementia development[8,9].

All types of dementia may be associated with difficulties with orientation, communication, mobility, mood and behaviour, which may impact on patients' ability to participate in clinical assessments if adjustments are not made to their needs. The PrOVIDe study showed that one third of people with dementia had binocular visual acuity worse than 6/12, of which half would benefit from refractive correction, and at least a quarter would benefit from cataract surgery[10]. Record linkage of matched dementia and reference cohorts showed that three quarters of those who would benefit from cataract surgery have not been treated[11].

Principles to consider in decision-making

1. **Communication difficulties**, e.g. naming objects, processing and retaining information.

2. **Behaviours and lack of co-operation** are often due to unmet needs, such as poor hearing, hunger, thirst, pain or disorientation in an unfamiliar environment.

3. **Visual needs of the individual**, e.g. the ability to self-care, love of reading (near vision), hobbies such as watching television (intermediate to distance vision), in the context of their mobility to evaluate the risk of falls.

ASSESSING THE PATIENT

- Clinical Frailty Scale 8-9: unlikely to benefit from surgery
- Clinical Frailty Score 6-7: require MDT assessment; may benefit from surgery with a personalised plan for their needs
- Clinical Frailty Scale 1-5: likely to benefit from surgery with minimal adjustments to standard processes.

Practice points:

- Use short, simple and kind language
- Engage the patient directly whenever possible
- Determine the need for general anesthesia early in the consultation and plan for safe anaesthethetic input and minimising the risk of cancellation on day of surgery.

ASSESSING THE EYE

Practice points:

- Elucidate any history of trauma or ocular comorbidities
- Simplify vision testing: start with Ishihara colour chart, confrontation fields, and relative afferent pupil reflex testing
- Prioritise diagnostic testing to avoid over-tiredness including biometry, disc and macula OCT imaging
- Follow up consultation planned with close family members and carers is often helpful
- Second eye surgery should not be with-held on the basis of good vision in one eye
- Considerations for refractive outcome: e.g. would the patient tolerate glasses?

ASSESSING THE ENVIRONMENT

- Determine the need for district nursing early on, and adjust post-operative drop regime accordingly
- Local arrangements with domiciliary optometrists with specialist skills, training and accreditation to deliver specialist post-operative care is being explored.

Recommendations

Pre-hospital	**Processes should identify people with cognitive impairment so that management and follow up can be tailored to their needs[12].**	
	Stage	**Recommendations**
	Referral	Develop systems to accurately identify patients with known dementia; ideally book to dedicated cataract pathway where available. Pre-hospital information leaflets/ infographics to be sent in advance. Identify patients who may benefit from an initial video consultation.
Pre-operative assessment	**Cataract care services should take into account the needs of patients living with dementia in the design of services. Time allocated for examination may need to be longer and facilitate assessment in the presence of an advocate.**	
	Outpatient visit	Ideally with surgical team who will operate on the patient. Increase appointment time and quiet spaces in the waiting area[6]. Pre-assessment and Biometry on the same day if possible to allow refractive aim plan.
	Surgery vs no surgery	Risk vs benefit assessment. Clinical frailty score >8.0 are unlikely to benefit from surgery.
	Timing of surgery	Offer cataract surgery as early as possible to patients with a known diagnosis of dementia; do not delay[8,9].
	Operation booking	Offer surgery on an anaesthetist-covered list with the option of GA available if the patient is deemed suitable; re-assess capacity on the day of surgery. Prepare for the intervention (GA available if needed), but hope for the least intervention e.g Topical/ LA if possible.

		Utilise video-based consultations and information delivery where practical, to minimise time in the outpatient department.
	Consent	Assess mental capacity for decision-making using the Mental Capacity Act. Do not presume all patients living with dementia lack mental capacity. Where they lack mental capacity to decide/refuse cataract surgery, consult with their advocate (can be a friend). Clearly establish whether their advocate holds Lasting Power of Attorney for health (i.e. has the legal right to make the decision on their behalf, or is acting as a NOK in a best interests decision). Where someone lacks mental capacity and has no advocate, decision-making (both for or against surgery) requires referral to an Independent Mental Capacity Advocate (IMCA). You cannot do surgery without an IMCA for those with no advocate. An IMCA will be part of the best interests meeting (BIM), which cannot be done without someone representing the patient's view. Their role is not to legally consent on the patient's behalf.
	Anaesthesia	Patient centred approach: anaesthesia should be administered with the aim of minimising peri-operative cognitive changes[12]. MDT approach: MDT discussions between Ophthalmology, Anaesthesia, Care of the Elderly and the General Practitioner are advised for 'high-risk' patients. Local pathways to encourage these discussions are recommended[13]. Where GA is deemed the most suitable option for the patient, consider immediate sequential bilateral cataract surgery to eliminate the need for a

		second anaesthetic, particularly if high refraction to minimise post-op anisometropia. Will need to take account of post-operative care in hospital and at home.
	Refractive aim	Mild myopia (–1D) should be considered in people with severe dementia who may be housebound, as near tasks without spectacles such as feeding are of importance[6]. Multifocal IOLs are not proven to be the best option in these patients[6].
Intra-operative considerations		
	Day of surgery	Avoid early morning time slots. Experienced surgeon, preferably known to the patient. Theatre briefing for all staff including comfort (e.g. hand-holding, blanket) and minimise distraction for patient). For a designated person familiar with the patient, e.g. next of kin, to be prepared to be present in the theatre to accompany the patient, if this helps the individual.
	Role of intracameral dexamethasone	This has been successfully used to reduce the post-operative burden of drops in this patient group and should be considered in medium to high risk cases[14].
	Post-operative review	Consider optometrist-led local follow up.

Discussion

Disproportionate uncorrected visual morbidity has been demonstrated in people living with dementia, attributed to low rates of self-reporting and detection, low referral rates to specialist ophthalmic care, hindrances to hospital access as well as failure of eye care professionals to identify the visual morbidity or to attribute this to the dementia rather than the visual pathway6,13,14. People with cognitive impairment should receive the same standards of, and access to, healthcare as people without cognitive impairment[12].

The overall recommendation in patients living with dementia presenting to cataract services, is that surgery should be considered 'sooner rather than later' to ensure windows of opportunity to intervene are not missed. Cataracts usually progress slowly and patients may not complain of worsening of vision they may not be undergoing regular eye screening. Healthcare professionals should take any opportunity to actively screen for cataract and offer intervention. Patients with an obscured visual axis (due to cataract), are less likely be aware of and hence less likely to report changes in vision such as new distortion secondary to wet ARMD; this is another important reason to intervene early in patients living with dementia.

Adaptation of existing pathways for cataract surgery are recommended to allow time and quiet space for decision making, particularly the identification of those patients with dementia in a busy clinic. It may be difficult to accurately assess visual acuity pre- and post-surgery and thus traditional "outcomes"; this requires more time to discuss visual behaviour changes with patients and their carers.

There is a role for integrated models of eye care for care-home residents, utilising a multi-disciplinary setup for domiciliary optometrists to discuss residents with ophthalmologists/MDT members, to enable personalised patient-centred decision-making for cataract surgery, which has undergone successful regional pilot studies.

Areas for future research are the development of a widely standardised eye care pathway for people with dementia, assessment of the benefits of early cataract surgery and further research into the feasibility of specialist optometrists for older people[10].

Appendix 1: Key Papers

Author	Methodology	Key Message	Strengths	Limitations
Bowen et al, 2016[10]	**Stage 1** Cross-sectional prevalence study. **Stage 2** Qualitative research exploring participant, carer and professional perspectives of eye care.	The prevalence of visual impairment (VI) is disproportionately higher in people living with dementia in care homes. Almost 50% of presenting VI is correctable with spectacles, and more with cataract surgery.	The sample is broadly representative of the overall dementia population aged ≥60 years in England, encompassing a wide age range and people living both at home and in care homes.	Sampling bias.
Zhu et al[8]	Prospective cohort study to investigate the relationship between visual impairment (VI) and dementia in the UK Biobank Study.	Visual impairment (VI) was associated with increased risk of dementia, with a progressively greater risk among those with worse visual acuity. VI is suggested as a modifiable risk factor for dementia and highlighted the potential value of VI elimination to delay the manifestation of dementia.	Volunteer-based study with participants free of dementia at baseline.	The incident dementia was based on electronically linked hospital inpatient and death records.

Author	Methodology	Key Message	Strengths	Limitations
Chandra et al, 2021[6]	Individual groups of authors discussions on recurring themes during cataract surgery, including dementia.	In patients with dementia, cataract surgery should be considered 'sooner rather than later' as progression may prevent individuals presenting for surgery. This should be planned after discussion of patients' best interests with any carers; multifocal IOLs are not proven to be the best option in these patients.	Expert opinions.	None identified.
Lee et al[9]	Prospective cohort study to investigate the relationship between visual impairment (VI) and dementia in the UK Biobank Study.	Cataract extraction is significantly associated with lower risk of dementia development. If validated in future studies, cataract surgery may have clinical relevance in older adults at risk of developing dementia.	Individuals were dementia free at recruitments and systematically followed up until dementia development.	Cataract diagnosis and surgery were based on diagnosis and procedure codes available from electronic medical records, and we did not have ophthalmic clinical data, such as visual acuity or cataract severity.

Author	Methodology	Key Message	Strengths	Limitations
Jefferis et al[7]	Literature review: Cataract and cognitive impairment.	Highlights the need for awareness by ophthalmologists of the potential for cognitive impairment to cause visual symptoms and need for a multidisciplinary approach.	Identification of areas in need of further development	More descriptive review than critical.
Jefferis et al[5]	Qualitative study using semi structured interviews with senior cataract surgeons from two centres in England.	This study highlights the differing practices of cataract surgeons when making anaesthetic choices for people with dementia and the challenges they face. In order to avoid the situation of a patient with dementia becoming distressed during awake surgery, increased time at preassessment and anaesthetic support may be beneficial.	In depth exploration of clinician's attitudes and experiences.	Not statistically representative.

Author	Methodology	Key Message	Strengths	Limitations
Newman et al[15]	Systematic review on the research into postoperative cognitive dysfunction (POCD) in noncardiac surgery.	Occurrences of POCD in cataract surgery are usually attributable to age>85 years rather than dementia. For this reason, we should not refuse general anaesthesia for people living with dementia requiring cataract surgery due to the risks of POCD. POCD should be explained in the consent process with the patient, their carers and the anaesthetic team looking after them.	Previous large studies had been done in cardiac patients and so less directly relevant to cataract surgery	Majority of the included studies were underpowered to detect an association between surgery and post-operative cognitive dysfunction.

Appendix 2: References

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