

Correspondance

Evaluating elective surgery

Charles Wright and colleagues¹ are to be commended for the model of health outcome measures that they have developed for examining the appropriateness of elective surgical procedures. However, we have some concerns about the tool used to assess cataract surgery. The VF-14 index is very sensitive when used appropriately, but it was not designed to determine who needs surgery. Previous studies of preoperative visual function have obtained findings similar to those of the Wright study, that is, that about 20% to 30% of people have a high score on the visual function test.² However, such results do not necessarily mean that these patients do not need surgery. The VF-14 index is a composite measure for reading, driving, playing sports, watching television and other activities, and as such it does not clearly identify people with a significant deficit in just one of these domains who would benefit from surgery.

Ocular comorbidity, which was present in up to 50% of all cataract patients in the cohort studied (Ken Bassett, Associate Professor, Department of Ophthalmology, University of British Columbia: personal communication, 2003), predicts poor outcomes. So does old age. Such comorbidity does not mean that surgery is inappropriate, but the VF-14 index does not capture patient satisfaction after surgery in such cases.

Finally, the authors did not emphasize that ophthalmologists have reported visual improvement in 92.4% (786/851) of patients at the University of British Columbia Eye Care Centre (essentially the same patients as were included in the Regional Evaluation of Surgical Indications and Outcomes study), whereas in 4.9% they reported no change in visual acuity (Ken Bassett: personal communication, 2003). Similarly, Wright and colleagues were not able to report the level of satisfaction that could have been determined by asking "Do you think this surgery was helpful and has it added to the quality of your life?" We are disappointed that these issues were not fully addressed in the Interpretation section of this paper,

nor, apparently, was such a discussion requested by the peer reviewers.

Raymond P. LeBlanc

Chair

National Coalition on Vision Health
Toronto, Ont.

References

1. Wright CJ, Chambers GK, Robens-Paradis Y. Evaluation of indications for and outcomes of elective surgery. *CMAJ* 2002;167(5):461-6.
2. Steinberg EP, Tielsch JM, Schein OD, Javitt JC, Sharkey P, Cassard SD, et al. The VF-14. An index of functional impairment in patients with cataract. *Arch Ophthalmol* 1994;112:630-8.

Charles Wright and colleagues¹ concluded that indications for and outcomes of elective surgery can be evaluated systematically at reasonable cost. Their analysis focused on 6 procedures, including cataract surgery. For patients who had undergone this procedure, the authors highlighted the finding that "32%, 15% and 4% [of patients] had a preoperative visual function score of greater than 90, greater than 95 and 100 respectively (on a scale of 100)." They concluded that "the threshold indications for cataract surgery are now very low." On the surface, this seems a reasonable claim if the measurement tool accurately quantifies visual impairment. However, the measurement tool used by Wright and colleagues,¹ the VF-14 (which was originally described in a report of the Patient Outcomes Research Trial [PORT]), only partly reflects visual impairment.² This tool is widely used because it correlates "more strongly with [patients'] overall self-rating of the amount of trouble they have with vision and of their satisfaction with vision than do any of several measures of their visual acuity."² However, the correlation value (Spearman correlation coefficient) was only -0.45, which indicates that more than half of patients' trouble with vision was not accounted for by this measure. This led the PORT authors to conclude that "vision-related functional status measures, in conjunction with the global ratings by patients of their vision and visual acuity, will likely prove to be better indicators of the need for and outcome of cataract surgery than will visual acuity or a

general measurement of functional status alone."² By basing their assessment of visual difficulty on the Visual Function Assessment alone, Wright and colleagues¹ underestimated the magnitude of patients' vision problems.

The article also highlighted that 27% of patients had worse Visual Function Assessment scores after surgery than before. This result might lead one to wonder how much inappropriate surgery is being undertaken. Not surprisingly, the press has picked up on these concerns.^{3,4} The explanation for this worrisome finding can be found in the more detailed report of this study (the Regional Evaluation of Surgical Indications and Outcomes [RESIO] project),⁵ which stated that "these data are for operations on the first eye even if both were eventually done." The results of the original PORT study, which defined the VF-14 index, also indicate that the VF-14 score may progressively decline after cataract surgery if it is performed on only one eye.⁶ However, dramatic gains in functional status were seen for patients who were rechecked after the second eye was treated. The PORT authors stated that "patients who underwent surgery in both eyes demonstrated a 1.6-fold greater improvement in VF-14, were 2.1 times as likely to report no trouble with their vision, and 2.7 times more likely to be satisfied with their vision than patients who underwent surgery in only one eye. The magnitude of the difference in improvement in VF-14 between one- and two-eye surgery appears to be attributable to both the direct effect of second-eye surgery and to a decline in VF-14 between 4 and 12 months in the one-eye surgery group."⁶

In summary, Wright and colleagues have used a tool not designed or appropriate for determining surgical thresholds to argue that thresholds for surgery are inappropriate. They have also suggested that inappropriate surgery is being done, while omitting the obvious explanation for the results, which was hinted at in the initial study report.⁵ The authors may be correct that these kinds of evaluations can be done at a reasonable cost, but given the interpretation offered,

I am not at all surprised that they found a lack of enthusiasm among surgeons.

Lorne Bellan

Misericordia General Hospital
Winnipeg, Man.

References

1. Wright CJ, Chambers GK, Robens-Paradis Y. Evaluation of indications for and outcomes of elective surgery. *CMAJ* 2002;167(5):461-6.
2. Steinberg EP, Tielsch JM, Schein OD, Javitt JC, Sharkey P, Cassard SD, et al. The VF-14. An index of functional impairment in patients with cataract. *Arch Ophthalmol* 1994;112:630-8.
3. Fayerman P. Elective surgery benefits most patients: study. *Vancouver Sun* 2001 May 29;Sect B:1-2.
4. Picard A. Do your homework, study urges doctors. *Globe and Mail* [Toronto] 2001 May 29;Sect A:1-6.
5. Wright CJ, Robens-Paradis Y. *Evaluation of indications and outcomes in elective surgery: a feasibility study in the acute care hospitals of the Vancouver/Richmond Health Region*. Vancouver: RESIO; 2001 May. Available: www.resio.org/FINAL_RESIO_Report.pdf (accessed 2002 Dec 16).
6. Javitt JC, Steinberg EP, Sharkey P, Schein OD, Tielsch JM, Diener M, et al. Cataract surgery in one eye or both. A billion dollar per year issue. *Ophthalmology* 1995;10:1583-92.

Charles Wright and colleagues¹ reported highlights of the RESIO study, including information about patients undergoing cataract surgery. The comprehensive report of that study² states that 10% of the patients had preoperative vision better than 20/50 and therefore might not have met the cataract surgical guidelines. Wright and colleagues have suggested that these patients might have undergone unnecessary surgery.¹ In fact, the policy manual of the College of Physicians and Surgeons of British Columbia states that patients with vision better than 20/50 but significant functional visual impairment are suitable candidates for cataract surgery.³ For example, bus drivers, police officers and airline pilots need vision that is considerably better than the 20/50 level to function in their jobs.

Wright and colleagues claimed that the outcome of cataract surgery was poor.¹ In the RESIO study, the average visual function score before cataract surgery was 79 out of 100, and this score rose to 88 after the surgery.² I suspect that the 9-point improvement in patient-reported visual function was interpreted as a very small improvement and therefore a poor outcome. However, given that 100 represents absolutely no visual disability, a score of 88 is in fact an excel-

lent outcome, and this score was higher than the postoperative scores for any of the other surgical procedures in the study.

In the routine cataract assessment program at the University of British Columbia, 94% of the patients have better visual acuity, 3% have the same visual acuity, and 3% have worse visual acuity after cataract surgery.⁴ The RESIO study measured objective visual acuity before but not after surgery. It would have been helpful to have objective postoperative data to determine why, if only 3% had worse vision, 26% scored worse on their visual function form. We are currently re-examining the RESIO data to try to answer some of these questions.

Duncan P. Anderson

President, Canadian Ophthalmological Society
Ottawa, Ont.

References

1. Wright CJ, Chambers GK, Robens-Paradis Y. Evaluation of indications for and outcomes of elective surgery. *CMAJ* 2002;167(5):461-6.
2. Wright CJ, Robens-Paradis Y. *Evaluation of indications and outcomes in elective surgery: a feasibility study in the acute care hospitals of the Vancouver/Richmond Health Region*. Vancouver: RESIO; 2001 May. Available: www.resio.org/FINAL_RESIO_Report.pdf (accessed 2002 Dec 16).
3. Guidelines for the management of cataract in adults. In: *Policy manual College of Physicians and Surgeons of British Columbia*. Vancouver: The College; 1996 Mar. Available: www.cpsbc.ca/policymanual/guidelines/cataracts.htm (accessed 2002 Dec 16).
4. Mildon D, Noertjojo K, Rollins D, Blicker J, Law F, Courtright P, et al. Cataract at the Vancouver Eye Care Centre: Do patient indications meet provincial clinical practice guidelines? *Can J Ophthalmol*. In press.

[One of the authors responds:]

LeBlanc and Bellan both take issue with our conclusion,¹ based on VF-14 questionnaire results, that cataract surgery is currently being performed for doubtful indications in a substantial proportion of patients. There is no perfect instrument to measure visual function, but the VF-14 was developed by ophthalmologists for their use in assessing cataract patients and is apparently acknowledged as the best tool there is. Anderson also acknowledges that on the VF-14 “a score of 88 is in fact an excellent outcome” and that “100 represents absolutely no visual disability.” It is

therefore difficult to understand the decision to operate in the 15% of patients who scored above 95, and especially in the 4% of patients with the astonishing score of 100, at the time of preoperative assessment in our study. In choosing the VF-14 for our study we relied on the ophthalmology literature, the epidemiologists working in the University of British Columbia Department of Ophthalmology and the advice of the ophthalmologists associated with the project. The consensus remains (as quoted by Bellan himself) that the subjective VF-14 score correlates more strongly with visual function than any objective measurement of visual acuity made by the surgeon. Anderson’s last paragraph seems to deny this accepted conclusion from cataract outcomes research, and he returns to suggesting that measured visual acuity, rather than the VF-14, is the most appropriate measure of outcome.

In claiming that the ophthalmologists involved in the project have reported “visual improvement” in 92.4% of patients, LeBlanc perpetuates the misapprehension that visual acuity as reported by the surgeon is a better measure of visual function than the VF-14 as reported by the patient and as used in our study. We agree that the question he suggests for determining patient satisfaction would be a good one in any evaluation of elective surgical outcomes. For example, it could be added as a final question in the postoperative application of the VF-14 questionnaire.

The reported results were restricted to patients undergoing first-eye surgery because the steering committee was uncertain how to deal with the 1-eye or 2-eye issue raised by Bellan, and current practice varies widely in relation to indications for and timing of surgery on the second eye. Bellan seems to be arguing for routinely operating on both eyes, but we must leave this question (for patients with or without mild cataract in the second eye or postoperative anisometropia) to be answered by ophthalmologists on the basis of research evidence.

Finally, we did not suggest that the VF-14 should be used with some kind of absolute threshold as the sole criterion of the need for surgery. As with any operation, the recommendation to proceed