

“Galaxy in My Eye”: An Artist’s View of Cataract Surgery from Behind the Crystalline Lens

Dear Editor,

Cataract surgery is the most commonly performed elective surgery in many countries. As a result of advances in surgical and anaesthetic techniques, most cataract surgeries are currently performed under local anaesthesia. Regional techniques such as retrobulbar and peribulbar anaesthesia often only partially block the optic nerve function while topical anaesthesia is not known to have any effect on the optic nerve. Only about 16% to 25% of patients have no light perception after receiving a retrobulbar or peribulbar anaesthetic block.¹⁻⁴ For a very long time, whether patients undergoing cataract surgery with local anaesthesia could see with their operated eye intraoperatively did not receive much attention. This phenomenon is still not discussed in any major ophthalmology or anaesthesia textbook.

In the last decade, a number of clinical studies have documented the visual experiences of patients during cataract surgery under local anaesthesia.³⁻¹³ Recently, I operated on a Singapore artist cum art-dealer who, on the same day following the uneventful surgery, produced a painting entitled “galaxy in my eye” based on her visual experience during phacoemulsification under topical anaesthesia (Fig. 1). In a separate report, I have previously published drawings by 12 different non-artist patients on their visual experiences during cataract surgery under either topical or retrobulbar anaesthesia.¹⁴ A handful of other artists have also documented their intraoperative visual experiences.^{12,15-18} It is obvious from these drawings by artists and non-artist patients that their visual experiences are varied, and the patients’ impression and interpretation are subjective.

Although the artist in this report was not sedated during the surgery, she felt relaxed and calm on the operating table and reported enjoying looking at a “galaxy of colours” in her operated eye. We now know that many patients do find their visual experience pleasant and satisfying¹⁹ although more importantly, up to 16.2% of them may find them frightening.²⁰⁻²² Since vivid images may be perceived by patients operated using local anaesthesia, and patients react differently to these images, it is important for surgeons and their colleagues in the surgical team to counsel their patients preoperatively on what they might expect to see intraoperatively to avoid surprising and frightening them.²³ Although appropriate verbal preoperative counselling is convenient and effective, this may be complemented by showing a variety of pictures such as those published in the literature to illustrate the range of possible images that may

be experienced.¹⁴ Sumich and colleagues^{18,24} had previously suggested using drawings from a single artist for this purpose. However, it is possible that patients shown only one artist’s impression may misinterpret that as the “normal” phenomenon and may become unduly anxious when their personal experience differs from that of the artist.^{14,25}



Fig. 1. “Galaxy in my eye”: a Singapore artist’s rendition of her visual images during phacoemulsification and intraocular lens implantation under topical anaesthesia.

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REFERENCES

1. Talks SJ, Chong NHV, Gibson JM, Francis IR. Visual acuity and pupillary reactions after peribulbar anaesthesia. *Br J Ophthalmol* 1994;78:41-3.
2. Scott RAH, Acharya PA, Jake Man CM, Perry SR. Peribulbar anaesthesia. *Br J Ophthalmol* 1994;78:592.

3. Au Eong KG, Lee HM, Lim ATH, Voon LW, Yong VSH. Subjective visual experience during extracapsular cataract extraction and intraocular lens implantation under retrobulbar anaesthesia. *Eye* 1999;13:325-8.
4. Au Eong KG, Lim TH, Lee HM, Yong VSH. Subjective visual experience during phacoemulsification and intraocular lens implantation using retrobulbar anaesthesia. *J Cataract Refract Surg* 2000;26:842-6.
5. Au Eong KG, Low CH, Heng WJ, Aung T, Lim TH, Ho SH, et al. Subjective visual experience during phacoemulsification and intraocular lens implantation under topical anaesthesia. *Ophthalmology* 2000;107:248-50.
6. Rengaraj V, Radhakrishnan M, Au Eong KG, Saw SM, Srinivasan A, Mathew J, et al. Visual experience during phacoemulsification under topical versus retrobulbar anaesthesia: results of a prospective, randomised, controlled, trial. *Am J Ophthalmol* 2004;138:782-7.
7. Newman DK. Visual experience during phacoemulsification cataract surgery under topical anaesthesia. *Br J Ophthalmol* 2000;84:13-5.
8. Prasad N, Kumar CM, Patil BB, Dowd TC. Subjective visual experience during phacoemulsification cataract surgery under sub-Tenon's block. *Eye* 2003;17:407-9.
9. Wickremasinghe SS, Tranos PG, Sinclair N, Andreou PS, Harris ML, Little BC. Visual perception during phacoemulsification cataract surgery under subtenons anaesthesia. *Eye* 2003;17:501-5.
10. Tranos PG, Wickremasinghe SS, Sinclair N, Foster PJ, Asaria R, Harris ML, et al. Visual perception during phacoemulsification surgery under topical and regional anaesthesia. *Acta Ophthalmol Scand* 2003;81:118-22.
11. Yaylali V, Yildirim C, Tatlipinar S, Demirlenk I, Arik S, Ozden S. Subjective visual experience and pain level during phacoemulsification and intraocular lens implantation under topical anaesthesia. *Ophthalmologica* 2003;217:413-6.
12. Murdoch IE, Sze P. Visual experience during cataract surgery. *Eye* 1994;8:666-7.
13. Chung CF, Lai JSM, Lam DSC. Visual sensation during phacoemulsification and intraocular lens implantation using topical and regional anaesthesia. *J Cataract Refract Surg* 2004;30:444-8.
14. Au Eong KG. 6th Yahya Cohen Lecture: visual experience during cataract surgery. *Ann Acad Med Singapore* 2002;31:666-74.
15. Hu K, Scotcher S. Seen from the other side: visual experiences during cataract surgery under topical anaesthesia. *BMJ* 2005;331:1511.
16. Verma D. Retained visual sensation during cataract surgery [letter]. *Ophthalmology* 2001;108:1004.
17. Zia R, Schlichtenbrede FC, Greaves B, Saeed MU. "Only rarely seen in dreams" – visual experiences during cataract surgery. *Br J Ophthalmol* 2005;89:247-8.
18. Sumich PM, Francis IC, Kappagoda MB, Alexander SL. Artist's impression of endocapsular phacoemulsification surgery. *J Cataract Refract Surg* 1998;24:1525-8.
19. Au Eong KG, Tan CSH, Ang CL, Lee SSG, Venkatesh R, Muralikrishnan R, et al. Intraoperative visual experiences of cataract patients can be both pleasant and unpleasant. *Br J Ophthalmol* 2005;89:1386.
20. Tan CSH, Au Eong KG, Kumar CM. Visual experiences during cataract surgery: what anaesthesia providers should know. *Eur J Anaesthesiol* 2005;22:413-9.
21. Tan CSH, Au Eong KG, Kumar CM, Rengaraj V, Radhakrishnan M. Fear caused by intraoperative visual sensations during cataract surgery. *Acta Ophthalmol Scand* 2005;83:631-2.
22. Tan CSH, Au Eong KG, Kumar CM, Rengaraj V, Radhakrishnan M. Fear from visual experiences during cataract surgery. *Ophthalmologica* 2005;219:416.
23. Voon LW, Au Eong KG, Saw SM, Verma D, Laude A. Effect of preoperative counselling on patient fear from the visual experience during phacoemulsification under topical anaesthesia: multicentre randomised clinical trial. *J Cataract Refract Surg* 2005;31:1966-9.
24. Sumich PM, Francis IC, Kappagoda MB, Alexander SL. Retained visual sensation during cataract surgery [letter]. *Ophthalmology* 2001;108:1003.
25. Au Eong KG, Low CH, Heng WJ, Aung T, Lim ATH, Ho SH, et al. Retained visual sensation during cataract surgery [letter]. *Ophthalmology* 2001;108:1003-5.

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