

Glaucoma Surgery: Problems with Circum-Corneal Freezing Probe Cryo-Therapy Intervention for Glaucoma

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Abstract

In this writing, the authors have attempted a cogent review communication that includes legal matters pertaining to a non-penetrating surgical procedure for intractable glaucoma. Cryogenic probe application lowers eye pressure by destruction of the non-pigmented ciliary epithelium and it is effective but harmful. Mostly conducted when eye pressure exceeds about 52 mm Hg, cycloablation lowers internal fluid pressure far too much for sometimes nearly half of any sample of treated eyeballs. Severe hypotony makes for shrinkage of the vitreous body and inward collapse of the choroid. In many cases, disastrous disfigurement (phthisis bulbi) is known to result. Devastating psycho-social consequence to the unwary patient is well known but unregulated and poorly documented. Human rights considerations exceeding in relevance and importance and over-riding the archaic protocols defined by medics, we authors recommend immediate and universal cease and desist: toward freezing applicator for the ocular anterior segment. Alternative treatment methods with adjunctive diagnostic testing need to be explored as the neurology of focusing muscle tension, cellular metabolism of drainage channels, and osmotic factors influencing formation of aqueous fluid begin to be explicated.

Keywords: *Glaucoma Surgery; Circum-Corneal Freezing Probe; Cryo-Therapy Intervention*

Introduction

Pain

The indicated diagnosis [1,2] to which a treatment stratagem of cryo-ablation has hitherto been widely promoted is what is termed uncontrolled glaucomatous elevated eye pressure [3]. Clouding of the cornea might be an apparent sign. Acute eyeball pain is a most terrifying typical symptom. To expect that ailing patients will gain bystander sympathy is hugely optimistic. The textbook claim that pain in fact can be relieved by freezing necrotic lesion to the circum-corneal sclera is but merely a nominal reality. The observed reality is often relegated as anecdote and mostly ignored [4]. The patient must be comfortable while in the care of a physician: with or without the Hippocratic Oath; and with or without financial disbursement mechanisms. But do we really know how aqueous humour formation occurs and how it is regulated?

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Unintended consequence

The assumptions for trans-scleral freezing probe cryo-ablation of the ciliary body ignore the fact that major tissue damage of conjoining adjacent structures of the ocular anatomy is concomitant [5]. Sudden freezing death of the eye focusing muscle necessarily be fraught with neurological consequences aside from the psycho-social. Surgical procedures for chronic glaucoma might suffer almost universally from problems connected to wound healing. Antidotes for inflammation are planned innovations but post-operative side-effect complications are hardly eliminated. We might justifiably speculate that nutrient profile of fast-flowing blood in the uveal choroid tissue vasculature [6] could influence neuron survival. Experimental design for a dietary case-control study is in the planning stage [7].

Dubious record

Despite advancing technology [8], we human beings are persons first and patients second: thereupon our right to choose must necessarily be respected. Traditional surgical options for glaucoma continue to be viable in most cases and safe newer innovations are welcomed. Surgical modality such as peripheral iris hole by laser iridotomy many often times IS indeed a safe intervention. Keeping internal ocular fluid pressure below 45 mm Hg appears to be medically essential and functional psychophysics of the retina might someday answer this. But ANY procedure that has a questionable track record bordering into the territory of dubious necessity coupled with commonly occurring debilitation, must be terminated from medical practice protocol: especially when untreated patients do readily retain their happy [and quirky] interpersonal dynamics. Examples from Technicolor Motion Picture Films such as Love Story [book author Eric Segal] exist in other languages as well.

Untested physiology

Osmotic factors related to oral fluid intake remain open to exploration. Excessive water fluid volume intake by mouth, as frequently ingested beverage, might disturb osmotic balance surrounding the eyeball. Electrolyte balance, such minerals sodium-potassium and magnesium-calcium are primary candidates for designing hypothesis-driven experiments. How can we claim certainty of understanding internal ocular fluid dynamics when advanced methods [9] are not commercially available to the clinician? A conceptual synthesis that began with data presented in year 1996 suggests dire need [10] to include vascular neurology and biophysics of contraction flow dynamics, modulated by neural impulse. Optimal metabolic nourishing and surplus nutrients for regeneration under distressing conditions of environmental ecology might someday be fully elucidated.

Cautionary discretion

Elevation of eye pressure above 52 mm Hg already has retinal nerve conduction consequences after perhaps 48 to 96 hours. But a structurally intact blind eye with normal blinking would be far more acceptable to ANY patient than a shrivelled and recessed blind eye with facial distortion. There are some situations where a physician or surgeon need not claim to know-it- all. State-Licensed surgeons might be hard pressed to study esoteric textbooks on vertebrate physiology [11] that are NOT medical curriculum. We hominid bipeds are more similar to the squirrel than to the rat partly because we live and work in daylight illuminated sustainable ecosystems. Yet however, our common motivation for speedy outcomes brings ecological constraints and we sometimes crumble despite environmental awareness [12].

Post-mortem histology does not represent physiological process and self-regulation [13]. Purpose-oriented biopsychology of a social organism is ignored by genetic chromosome models. Homeostasis has limitations when ergonomic challenge is severe and sustained [14]. Sudden disruption is not limited to the vulnerable: after innovation of quadrant hypotenuse sum-of-squares algebraic math formulation, even Pythagoras was forced to hastily exit his burning hometown.

Human rights

Scientific legitimization can be fiscally motivated and justified by illusory arguments [such as binary logical fallacies] with repeated news media interviews touting partial truths. Many forms of cruel and unjust punishing intervention have examples in the archives of clinical and experimental psychology [15]. For any ethically committed professional, exercising caution in the face of impending disfigurement of the client far outweighs fast-track short-term profits claimed under the guise of medical necessity. As we all can recognize, lawyers and political representatives are not exempt. Human rights are universal [aka Eleanor Roosevelt] and extend beyond legislated geography. Government officials of the civil service must not fear ridicule if they were to enable veritable interventions with informed consent [16,17]. Did the French government in 2001 unilaterally enforce iodine tablets on the populace after declaring leaks of radioactive nucleotide from thermal atomic fission reactor engines?

Legal regulation

The medical physiology underpinnings for cryo-ablation that permitted regulatory approval years ago are today untenable. This age-old procedure destroys much more than the layer of cells at which aqueous emerges into the circum-lenticular region at the anterior anatomical region of the peripheral retina; behind the iris aperture diaphragm so responsively constricting to flashing light and near focusing stimulus. To stop performing ocular anterior segment cryo-ablation would be the sensible thing: given its huge potential for disability and disfigurement of the client-patient. Doctors, clinics and hospitals can herein exercise the necessary professionalism with legal guidance and jurisprudence from the Helsinki Declaration of 1964.

Damage valuation

The medico-legal underpinnings for cryo-ablation cyclo-destruction, that permitted regulatory approval many years ago are today untenable. This age-old procedure destroys much more than the layer of cells at which aqueous humour emerges into the circum-lenticular spaces near the anterior limits of the peripheral sensory biological retina. Basic humane sensibility dictates that ophthalmic surgeons must not beguile vulnerable patients when a significant and frequent unintended consequence is facial disfigurement. Persuasive tactics [18] by medics and hospital administrators are no substitute for consumer-enabled informed consent. Human rights violation by solo practitioners, clinics, hospitals, non-profits and government agencies: must necessarily serve legal retribution [and financial responsibility] under the Helsinki Declaration of 1964 with the assistance of damage valuation assessments.

Closing Remarks

Surgical lowering of eye pressure when the pressure measuring tonometer reads higher than 45 mm Hg appears to be a medical necessity: Think Again; It Is NOT. Natural means for neuro-protection might suffice [19] but carefully designed instrumentation for documenting anatomical density and neural impulse at the ciliary muscle [20] could vastly enhance ophthalmology clinic efficiency. Cryo-surgery must NOT be mandated in the face of impending physical disability. When doctors are fully aware that severe disruption of eyeball integrity from hypotony widely occurs [far more usually greater than 25 percent] such procedure must NOT be a medical standard-of-care. Any such similar procedure when mandated without informed choice is for certain a gross violation of consumer and citizenship rights: even if insurance reimburses under ICD coding for medical treatment.

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Bibliography

1. Yanoff M. "Ophthalmology diagnosis and treatment". Butterworths-Heinemann (1997).
2. Leitman MW. "Eye examination and diagnosis: Ninth Edition". WILEY Blackwell: Hoboken New Jersey (2017).
3. Shields MB. "Cyclo-destructive surgery for glaucoma: past, present, and future". *Transactions of the American Ophthalmological Society* 83 (1985): 285-303.
4. Marks E. Glaucoma from the patient's perspective (2010).
5. Ghose S. "Personal communication with Aggarwala". [Dr. RP Centre for Ophthalmic Sciences, AIIMS (2002)].
6. Wentzek LA, *et al.* "Choroid tissue supports the survival of ciliary ganglion neurons in vitro". *The Journal of Neuroscience* 13.7 (1993): 3143-3154.
7. Lane BC. "Personal communication [NJ-NY] with Aggarwala" (2020).
8. Eagleman D and Brandt A. "Our runaway species: How human creativity remakes the world". Catapult New York (2017).
9. Bartels SP. "Aqueous humor flow measured with fluoro-photometry in timolol-treated primates". *Investigative Ophthalmology and Visual Science* 29.10 (1988): 1498-1504.
10. Aggarwala KRG. "Ocular Accommodation, Intraocular Pressure, Development of Myopia and Glaucoma: Role of Ciliary Muscle, Choroid and Metabolism: Medical hypothesis, discovery and innovation". *Ophthalmology Journal* 9.1 (2020): 66-70.
11. McNab BK. "Physiological ecology of vertebrates: View from energetics. Comstock Publishing Associates, Ithaca NY (2002).
12. Aggarwala KRG. "Ecological thinking and reciprocal altruism may promote world peace, creative collaboration and sustainable development". *International Journal of Information Research and Review* 07.09 (2020): 7076-7080.
13. Rothman S. Lessons from the living cell. McGraw-Hill Publishers. New York (2002).
14. Lane BC and Aggarwala KRG. "Limits of homeostasis: ocular focusing biology". *In Preparation*.
15. Sheehy N. "Fifty Key Thinkers in Psychology". Taylor and Francis, Routledge (2004).
16. Doyal L and Tobias JS. "Informed consent in medical research". BMJ Publishing Group (2001).
17. Slomanson WR. "Fundamental perspectives on International Law: Fifth edition, Thomson-Wadsworth (2007).
18. Banuazizi A and Weiner M. "State, religion, and ethnic politics". Syracuse University Press (1986).
19. Stevens MJ, *et al.* "Effects of DL-alpha-lipoic acid on peripheral nerve conduction, blood flow, energy metabolism, and oxidative stress in experimental diabetic neuropathy". *Diabetes* 49.6 (2000): 1006-1015.
20. Swegmark G. "Studies with impedance cyclography on human ocular accommodation at different ages". *Acta Ophthalmologica* 47.5 (1969): 1186-1206.

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