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COMPARISON OF THE EFFECTS OF ENUCLEATION AND ORBITAL RECONSTRUCTION USING DERMIS FAT GRAFTS AND POROUS POLYETHYLENE (MEDPORE™) IMPLANTS IN INFANT RABBITS

Dilip Thomas, M.D., Eugene Smith, M.D., Robert Dryden, M.D., Geoffrey Tabin, M.D.,
King To, M.D., R Jeffrey Hofmann, M.D.

Twenty-nine infant rabbits from four litters were randomly assigned to three groups. No surgery was performed on left eyes. All right eyes were enucleated. Group 1, the control group, had no right socket reconstruction. Group 2 had reconstructing using a dermis/fat graft, Group 3 had reconstruction using a porous polyethylene (Medpore™) implant. Upon attaining adult size, rabbits were euthanized, decapitated and prepared for orbital volume measurements. Orbital volume measurements were performed twice and orbital entrance areas were determined once.

No significant differences were noted between first and second measurements or orbital volume on either side. Right orbital volumes were significantly smaller than left orbits in all groups except for the second measurement in the polyethylene group. Right orbital entrance areas were significantly smaller than left areas in the control and the dermis/fat graft groups. Right orbital entrance areas of the polyethylene group were not significantly smaller than their corresponding left orbital entrance areas.

The use of dermis fat grafts for orbital reconstruction in the anophthalmic infant rabbit did not significantly stimulate orbital bone growth. The polyethylene implants did reveal more orbital growth in the trial and orbital entrance areas that were not significantly smaller than controls.

Key words: Enucleation, orbit, anophthalmos, polyethylene, dermis fat graft, orbital bone growth
Purpose: Ocular injury induced by lightning is a rare but dramatic experience with very severe consequences to the patient. We want to report a case of a patient who developed bilateral cataracts, full-thickness macular hole, optic neuropathy, and retinal detachment after being injured by lightning.

Methods: Potential acuity meter, fluorescein angiography, and ophthalmoscopic examination.

Results: Bilateral cataracts, maculopathy due to macula edema and full-thickness hole, retinal detachment and optic neuropathy were seen; all these responsible for poor vision.

Conclusions: Lightning-induced ocular injury is a well-known condition of decreased vision. In most of the cases previously reported, the vision improved significantly with treatment. The presence of full-thickness macula hole and retinal detachment may be responsible for a profound visual loss without hopes for much visual improvement. Prompt diagnosis and treatment may make a dramatic difference in prognosis.

Key words: Retinal detachment, ocular trauma, lightning, cataract, macular hole
CAPNOCYTOPHAGA DACRYOCYSTITIS CAUSING ORBITAL ABSCESS AND VISUAL LOSS

Francis Figueroa, M.D., King To, M.D., Michael Migliori, M.D.

Capnocytophaga is a rare cause of ocular infections including conjunctivitis, keratitis, dacryocystitis and endophthalmitis. It is usually seen in previously diseased or traumatized eyes or in immunocompromised patients. We describe a relatively healthy patient who suffered from an acute dacryocystitis secondary to capnocytophaga, which led to a compressive optic neuropathy and permanent visual loss.
Purpose: To determine the optimal wavelength for suture lysis.

Methods: 130 black monofilament 10-0 sutures were sewn subconjunctivally into the bare sclera of enucleated rabbit globes. The lowest energy levels facilitating suture lysis were determined for each of the three laser wavelengths. Absorption spectroscopy was performed on the suture material using the Perkin Elmer UV/VIS Lambda 2 spectrometer.

Results: Krypton red produced the fewest bottonhole defects, and it was also the most efficient energy source for suture lysis (p=0.0001). Suture absorbance spectra revealed peak absorbance at 628 nm.

Conclusions: Based on animal and absorption spectroscopy studies, krypton red (647 nm) appears to be the safest and most efficient wavelength for subconjunctival suture lysis.
WELDING-ARC INJURY WITH SECONDARY SUBRETINAL NEOVASCULARIZATION

Gregory Kozielec, M.D., Caldwell Smith, M.D.

Purpose: to report the occurrence of a subretinal neovascular membrane associated with a welding-arc retinal injury.

Methods: We examined a 46-year-old man with an extensive welding history who presented with a two-week history of blurred vision in the left eye.

Results: Fundus examination and fluorescein angiogram revealed symmetrical scarring inferior to the macular bilaterally with secondary subretinal neovascularization of the left eye.

Conclusion: welding-arc injury to the retina is a rare event. Typically, retinal edema with formation of a macular hole follows. Fluorescein angiogram is usually normal. We believe an association of welding-arc injury and subretinal neovascularization has not been reported. Welding-arc injury should be added to the risk factors for subretinal neovascularization.