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**MANAGING OPHTHALMIC
NECROBIOTIC XANTHOGRANULOMA:
A MULTIMODALITY APPROACH
COMBINING ANTI-HISTOCYTTIC
CHEMOTHERAPY (CLADRIBINE),
SURGICAL DEBRIDEMENT,
ANTIMICROBIAL AND HYPERBARIC
OXYGEN THERAPY, AND LIMITED
SURGICAL GRAFTING**

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Background: Necrobiotic xanthogranuloma (NXG) is a rare progressive and destructive histocytic disease often associated with paraproteinemia of hematologic and lymphoproliferative disorders. It typically presents with slowly progressive and destructive cutaneous lesions, with a high propensity for periorbital tissues. Treatments that have been reported include surgical excision, local corticosteroid injection, plasmapheresis, chemotherapy or radiotherapy in various combinations all with variable responses. Surgical excision and injections are generally avoided due to the high rate of non-healing extension and local recurrence. Some patients experience rapid ulceration, with severe local destruction that necessitates aggressive surgical debridement and supportive healing measures. We report the successful treatment of a patient with threatened loss of total vision and cranial bone exposure.

Materials and methods: Our patient presented with multiple myeloma and advanced periorbital tissue involvement of NXG with extension into the sclera, complicated by severe exposure keratopathy, infection of the cornea, anterior chamber and periorbital tissues of both eyes with mixed bacteria that included *Pseudomonas aeruginosa* and fungal elements. Initial debridement required enucleation of one eye due to endophthalmitis after corneal perforation. The fellow eye and periorbital tissues responded to aggressive multimodality therapy, which included targeted anti-histocytic chemotherapy (Cladribine), 32

HBOT sessions (100% FiO₂, 2.0 ATA x 90 minutes), systemic periocular and intraocular antibiotic and antifungal therapy, and conjunctival flap procedure.

Results: This synergistic approach resulted in control of the previously advancing destructive process and the rapid production of a healthy granular wound bed that healed by secondary intention. Hand-motion vision was preserved in the surviving eye, with potential for improved vision with a keratoprosthesis in the future.

Conclusions: After failing conservative management, this complicated case of NXG was successfully treated with multiple synergistic therapies and aggressive surgical debridement. Excellent patient outcome was observed with partial vision preservation, rapid wound healing, decreased discomfort and favorable cosmetic appearance.

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**TREATMENT OF CENTRAL RETINAL
ARTERY OCCLUSION(CRAO)
AND BRANCH RETINAL ARTERY
OCCLUSION (BRAO) BY HYPERBARIC
OXYGEN THERAPY(HBO)
— 107 EYES OVER 20 YEARS**

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Background: Although thrombolytic therapy or stellate ganglion block are performed, blindness often ensues in CRAO, while only visual field defect preserving VA may be the feature in BRAO.

Materials and methods: CRAO in 63 eyes (62 total patients ranging 28-86 y/o) was accompanied by no light perception (NLP) in eight cases, light perception (LP) in three, perception of hand motion (HM) in 23, finger-counting (FC) in eight, decreased decimal visual acuity (DVA) 0.01~0.09 in 13, DVA 0.1~0.4 in three, DVA 0.5~1.0 in five.

BRAO in 44 eyes (44 total patients ranging 19-92 y/o) was accompanied by 1 NLP, 1 LP, 10 DVA 0.01~0.09, 8 DVA 0.1~0.4, 24 DVA 0.5~1.5.

VFD was 21 including only four DVA. For treatment of CRAO, HBO was begun on the day of onset (av. 10.6 hours) in 14 eyes, on second, third day in 29 eyes and on av. 8.2th day in 20 eyes.

For treatment of BRAO, HBO was begun the same day (av. 18.6 hrs) in five eyes, on second, third day in 16 eyes and on av. 8.2th day in 23 eyes. HBO at 2.8 ATA for 60 minutes twice daily for the first week, followed thereafter by once daily treatment, was conducted for CRAO av. 22.3 sessions and BRAO av. 11.2.

Results: 30 CRAO eyes (47.6%) improved VA over two lines (otl) by three months. The improvement otl was 38.5% with same-day treatment, 65.2% on the second, third day and 55.5% after fourth day. The more VA was maintained at the onset, the better the improvement, with six of eight NLP and three LP eyes improved otl by emergency HBO. 22 BRAO eyes (50.0%) improved VA otl by three months. 11 VFD improved, mostly with macular edema.

Conclusions: HBO should be conducted without delay especially for CRAO, while even by the third day HBO was still effective to improve VA except impending blindness. In BRAO, persistent HBO may improve VFD.

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DYING TO PLAY VIDEO GAMES: CARBON MONOXIDE POISONING FROM ELECTRICAL GENERATORS FOLLOWING HURRICANE IKE

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Background: Carbon monoxide (CO) poisoning is common following major storms, due to loss of electrical power and subsequent use of alternate fuel sources for heat and electricity. In past epidemics of hurricane-related CO poisoning, the source has typically been gasoline-powered electrical generators. While it is typically believed that generators were used to power air conditioning and refrigeration, this report demonstrates an unsuspected reason for their use.

Materials and methods: Following Hurricane Ike's landfall in September 2008, major power outages were associated with an epidemic of CO poisoning from electrical generators, as expected. Staff at Memorial Hermann Hospital-Texas Medical Center (MHH-TMC) treated or phone-triaged cases from the Houston area and asked the reason for the use of generators.

Results: MHH-TMC staff treated or triaged 37 individuals exposed to CO from gasoline-powered electrical generators in 13 incidents in the first 36 hours following landfall of the hurricane. Notably 54% (20/37) of the patients were under the age of 18. Symptoms ranged from mild to severe, with one child dying at the scene. Eleven patients were treated with hyperbaric oxygen. Among nine incidents in which the reason for generator use was determined, five were due to generators powering video games or televisions to watch movies or programs. These five incidents in which videogames were being powered accounted for 75% (15/20) of the pediatric poisonings.

Conclusions: Generator-related CO poisoning is indeed common during power outages following hurricanes. However, generators are commonly being used to provide electricity to power entertainment devices for children, such as video games. Warning text messages regarding CO were sent out via cell phones during the storm. Additional public education about CO risk is needed, perhaps directed at older children and teens through the schools in regions susceptible to hurricanes.