Wilderness Medicine Meeting 12/1/15: Snow Blindness Article Outline

***Atkinson, E.L. Snow Blindness: its causes, effects, changes, prevention and treatment.The British Journal of Ophthalmology. Feb 1921***

Type: Perspective, Commentary or Opinion Article

Background: This article is a perspective piece written by Dr Atkinson who was the surgeon on board the Terra Nova at the height of Arctic exploration. The article was written as commentary of their observations at these never before explored conditions. During  expeditions to the Arctic he made observation of conjunctivitis, eye pain and difficulty vision after prolonged exposure to sunlight when surrounded by snow. At this time these symptoms along with scotoma and edema in more serious or prolonged exposures were called “Snow Blindness”. These olden day scientists figured out that the UV light and increased reflections from miles and miles of white glistening snow (quite similar to injuries of industrial revolution welders who wore no eye protection); were causing these symptoms thus hatching the plan to further document the condition for layman and begin to try to find ways to prevent the affliction.

Methods and Results

The article describes comparison of development of symptoms after exposure to unprotected sunlight in the glacier during day marching to pinnacle vs symptoms development when the group marched at night. They found that more symptoms were observed during day marching and more specifically on clear sunny days over cloudy days and that the severity of injuries proportionate duration of exposure as well as the higher the altitude.

The group then took it a step further and decided to perform an experiment using different colored glass(red, blue and orange) as eye protection. With the goal of determining which colored glass would provide the best protection against UV light. They found that red and orange glass provided the best protection and protected subjects from developing snow blindness.

Conclusions

Today we still similar injuries in welders and skiers with inadequate eye protection and we call this condition PhotoKeratitis. Very few advances have occurred in further elucidating the affliction that weren't already discovered in the early 1900s. Care is still supportive with analgesia being the mainstay while the eyes recover. Preventions still remains key with amber eye protection being the best for UV light

Take Home Points

* Feels like grit in eye, conjunctivitis, edema, mucopurulent secretions, scotoma(worst)
* Adequate (UV light specific) eye protection when welding or skiing
* PE: check for corneal abrasion or foreign body
* Treatment: supportive, limited light exposure, cycloplegics, lacrilube
* Eye protection, Eye Protection, Eye Protection