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SYMPATHETIC OPHTHALMIA: WHAT HAVE WE LEARNED?

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Sympathetic ophthalmia (SO) is a rare bilateral granulomatous uveitis following ocular trauma or surgery to one eye. The eye sustaining the injury is referred to as the inciting eye and the fellow eye is called the sympathizing eye. The etiology of SO has not been completely understood but the underlying pathophysiology is believed to be an autoimmune reaction against the exposed ocular antigens from the inciting eye. The time to development of SO varies from 2 weeks to 50 years with approximately 90% of patients developing the disease within 1 year of injury (1,2,3,4). Since MacKenzie and Fuchs' clinical description of the disease about a century ago enucleation of the inciting eye in an attempt to influence the course of the disease in the sympathizing eye has been a controversial issue. Most cases are diagnosed based on history and presentation, and some are confirmed by the histology (3). SO represents approximately 1-2% of all uveitis cases; the true incidence and prevalence of SO has been hard to establish however a recent prospective study in England and Ireland by Kilmartin et al estimated that SO affects 0.03/100,000 persons per year. Although earlier studies found traumatic SO to be more common Kilmartin et al demonstrated ocular surgery as the most common cause (3,5,6,7,8).

Sympathetic ophthalmia is in itself a sight-threatening disease with a high rate of visual loss; approximately half of patients experience 20/40 or worse vision and one third of patients become legally blind (3). Although improved immunosuppressive therapy may reduce chronic inflammation there is still a risk of visual loss from complications such as chorioretinal scars, macular edema and CNV (9).

In this issue of the Journal, Galor and associates (10) report on the incidence of ocular complications and vision loss in the sympathizing eye of patients with SO. Eighty five patients with either a clinical or histopathologic diagnosis of SO seen at three academic tertiary care centers over the last 3 decades were included in this retrospective study. The median age was 45, there was a slight male predilection which is more in line with older reports. Historically SO was more prevalent in children and males however more recent reports indicated no racial or gender predilection and the age distribution appeared to be changing. This is likely due to injury prevention programs among children and increasing surgical procedures in the aging population. Among the military, where eye trauma is common, rates of SO have decreased. Recent review of ocular injury in military conflicts showed no SO. This may be attributable to timely medical attention, improved surgical techniques and fairly high rates of early enucleation of injured eyes; 39% primary enucleation and 19% secondary enucleation within 2 weeks of trauma (11).

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In the current study trauma was the most common cause and traumatically induced SO appeared to develop sooner after the inciting event compared to surgically induced SO. The length of follow-up was variable and those with any follow-up (74%) appeared to have presented sooner after the onset of SO which may have biased the results. As those who had follow-up are also those who presented early and presumably treated early this may have lead to overestimation of the favorable outcome. Median time to developing SO was 25 months and 41% developed SO within one year of trauma or surgery. Of the inciting eyes, 22% had enucleation and 35% had phthisis at presentation. Median time from SO to enucleation for those who had enucleation during follow-up was 1 month. Female sex was the only significantly associated factor with incident vision loss. It is hard to explain why female gender would be a poor prognostic indicator and the authors rightfully question this association. Given the small sample size and multiple comparisons it is not unreasonable to think this could be chance association. Traumatic etiology, exudative retinal detachment and active inflammation were associated with poor visual outcome. A more severe course with traumatic SO could theoretically be due to high doses of antigenic exposure (12). Patients started on prednisone immediately were more likely to achieve quiescence and appeared to do so quicker. This should not come as a surprise as SO is known to respond to steroids well, at least initially. (3,8,13,14,15,16).

The benefit of primary enucleation, early enucleation (within 2 weeks of injury) or enucleation after the onset of SO has been a long time debate (2,5,13,17). The decision about enucleation needs to be made very carefully as the vision in the inciting eye may eventually be better than the vision in the sympathetic eye in some patients. No benefit of enucleation after the onset of SO has been noted in the study although limited power and the lack of detailed data on the timing of enucleation made it difficult, if not impossible, to make any conclusions to this end. Although the direct effect of treatment on visual outcomes could not be determined in this study because of limited power it would still be useful for the authors to provide more detailed information on the outcomes of and discuss about those patients who received other immunosuppressive medications. The factors most often associated with decreased vision were active intraocular inflammation, cataract, and optic nerve abnormality of which the former two can be reversible. And as expected majority of those with cataract associated vision loss showed improvement following cataract surgery. Taken together approximately 60% maintained 20/40 or better vision while 25% were legally blind in the sympathizing eye. Interestingly visual outcomes of this study are not much different than what has been reported more than a decade ago by our group. This is likely due to inclusion of patients from the past 3 decades going as far back as 1976 when the mainstay of treatment was steroids; while this increases the sample size it also masks any improved outcome associated with the use of modern immunosuppressive agents more recently.

This study emphasizes the significant vision loss associated with SO, and highlights the importance of early diagnosis and prompt aggressive treatment. However important issues regarding early enucleation, the treatment of choice and whether modern immunosuppressives will lead to a better prognosis remain unanswered. Past reports have indicated that risk of SO is 1 in 1152 retinal surgical procedures and that multiple surgeries may have an “additive” effect in inducing SO (5,14). It would be useful for the authors to mention the type of surgeries among surgically induced SO patients. The fact that SO has been reported following various surgical interventions including glaucoma surgery, cataract extraction, vitrectomy as well as “non-invasive” procedures such as cyclophotocoagulation is a stark reminder that as clinicians we need to weigh the benefits of each procedure against its risks every time. In the era of increasing intravitreal injections and intraocular surgeries one wonders if there will be an upward trend in the incidence of SO.

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Biography

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