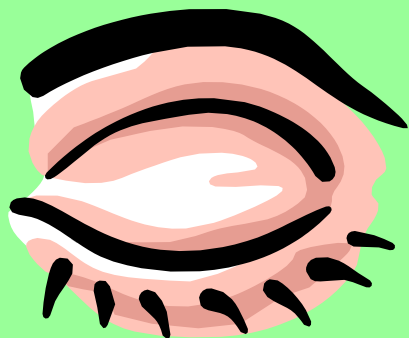


Even the therapy for glaucoma has radically changed over the past few years. The most effective treatment for this disease merely involves the installation of a drop in each eye in the morning and evening, and this is usually all that is needed to control the majority of patients. Occasionally, a person may be resistant to the therapy and surgery may be necessary. In this instance, also, the advent of new microsurgical techniques have vastly improved the surgical treatment of glaucoma.

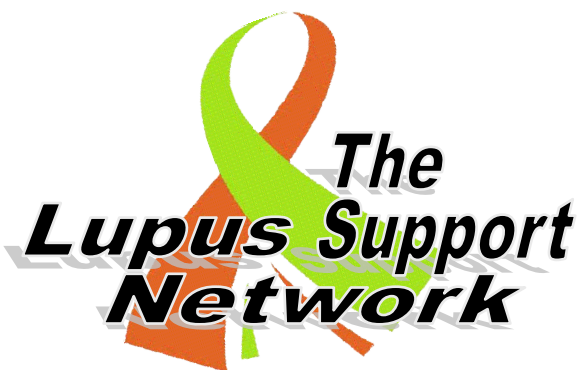
In addition to the above mentioned problems associated with lupus and its treatment, an affected person may also be susceptible to hemorrhages and blood vessel occlusions in the retina of the eye. These developments occur from the disease itself, and not from any of the aforementioned modes of therapy. Retinal hemorrhages are also significant in that they may lead to decreased vision and blindness. However, even in this case, developments within the past few years have greatly improved the prognosis for these patients. The Laser is used quite often in this type of problem to seal the leaking blood vessels, and is one method of performing a surgical operation within the eye itself, without ever making an incision.



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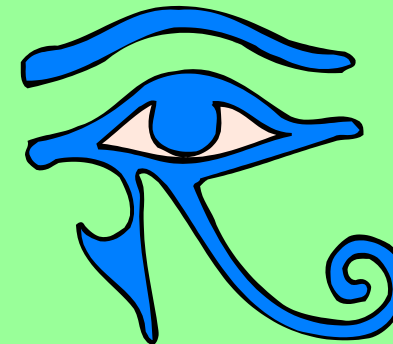
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The Eye and Systemic Lupus Erythematosus

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Systemic Lupus Erythematosus is a wide ranging disease and can affect many organ systems, and the eye is no exception. Involvement of the eyeball itself is much more common than involvement of the orbit, or socket of the eye. However, when there is involvement of the orbit this is most often manifested by the formation of nodules on the conjunctive (the most exterior tissue layer of the eyeball and inner lid). There may also be an accompanying swelling or edema of the lids themselves.

The most common observable ocular finding in lupus is the presence of "cotton wool spots" in the retina, or lining of the eye. These "spots" represent areas of the retina which are edematous due to a decreased blood flow, and hence oxygen supply, to certain areas of the retina. Of great importance to both the patient and the doctor is that these changes in the retina will often parallel exacerbations in the general disease state. Although the presence of a "cotton wool spot" is not specific to lupus, the presence of one in a young to middle aged patient should suggest lupus. There are other less common changes which may develop in the retina, and these include the deposition of fat cells in the retina, narrowing the arteriolar blood supply, and occlusion of the main blood vessels to the eye, which could result in a significant loss of visual acuity.

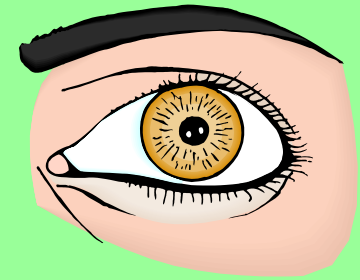
Keratoconjunctivitis sicca, or the dry eye syndrome, is another problem which is often encountered in lupus patients. This is manifested by gritty sensations in the eye, decreased tears, burning and itching. Of interest is that paradoxical watering of the eyes may occur, due to the increased irritation of the eyes. This is a most annoying condition which can be helped symptomatically in a large number of patients with the proper medication. The occurrence of Keratoconjunctivitis sicca, with symptoms of dry

mouth and arthritis is the symptom complex referred to as Sjogren's Syndrome. Involvement of the brain, or central nervous system, may produce blindness, atrophy of the optic nerve, nystagmus (which is rocking of the eye), or even palsies of the various muscles which control the movement of the eyes. The therapy of lupus and its ocular complications is oriented toward the site of the prominent disease activity. The use of rest, salicylates (aspirin), antimalarials (such as chloroquine- aralen, resochin or plaquenil) and steroids (cortisone) may all be quite beneficial to the lupus patient. The use of certain immunosuppressive medications is still under investigation.

Prolonged therapy with chloroquine may result in pathologic changes in either the cornea of the eye, the retina, or both. The effects on the cornea (chloroquine keratopathy) are manifested by whorl-like deposits in the cornea itself. These will usually appear early in the course of treatment, but disappear on discontinuing the drug. Much more important are the effects of chloroquine on the retina (which contains the visual rods and cones). Concentration of the drug in certain layers of the retina lead to its disruption and may result in a condition referred to as maculopathy. With this development a permanent and irreversible decrease of visual acuity may result and even continue after discontinuing the drug. It should be noted, however, the risk of retinal involvement is greatest after two years of treatment and in patients over 60 years of age. Should retinopathy develop, there is no countertherapy. However, a thorough ophthalmologic examination including photographs of the retina is recommended prior to starting chloroquine therapy and then every three to six months, depending on the dosage.

Steroid (or cortisone) drugs are also frequently used in the treatment of lupus. This medication

may be taken either by mouth, or used in drop form directly on the eye to treat the ocular disorders. Cataract formation may be the result with either route of administration, and, in fact, 40% of those on long term steroids will develop a cataract. Dosages of 15 mg of prednisone daily for more than one year will markedly increase the chances of one developing a cataract.



The Human Eye

Increased intra-ocular pressure (or glaucoma) may also result from the long-term use of cortisones, especially in those patients who have a family history of glaucoma. Glaucoma is an especially treacherous disease since it generally has no symptoms and can lead to blindness. Although the development of cataracts and glaucoma may occur during the course of treatment of a patient with lupus, this does not mean the patient will be blind. With modern surgical techniques a cataract may be removed with an instrument which enables the surgeon to remove the cataract through an incision in the eye of only three mm. Following the removal of the cataract, normal vision may be obtained by the implantation of a new plastic lens directly within the eye itself; or by the wearing of an extended wear contact lens which needs to be removed from the eye, by either the patient or the doctor, every three to six months. Hence, the development of a cataract should not be regarded as an overwhelming problem by the lupus patient.