What You Should Know About Retinal Vasoproliferative Tumors

By David J. Browning, MD, PhD

Retinal vasoproliferative tumor is the name for a condition in which a mass of blood vessels grows in front of the retina, the neural lining of the back of the eye. The retina is an extension of the brain, adapted to receive light and turn it into a nerve signal that tracks to the brain via the optic nerve. The normal retina is well supplied with blood vessels as shown in figure 1. For unknown reasons, an unruly mass of blood vessels grows out of the normal vasculature in a retinal vasoproliferative tumor. Most patients have these discovered by an ophthalmologist on a routine examination when the pupil is dilated, but sometimes the retinal vasoproliferative tumor causes leakage under the retina, swelling of the retina, or scar tissue formation on the retinal surface that can produce blurred or distorted vision.

Figure 1. Normal retina

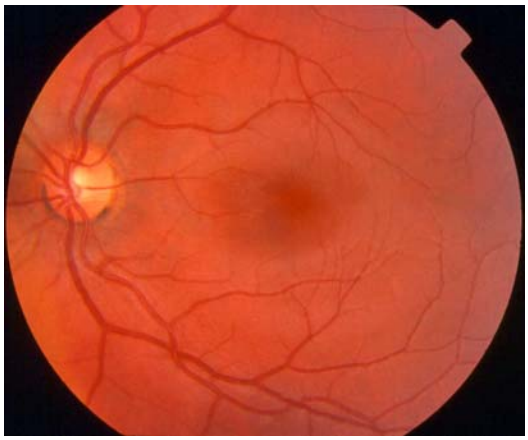
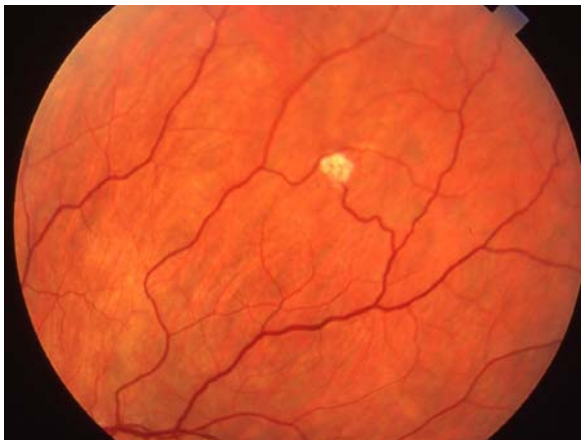


Figure 2. Retinal vasoproliferative tumor



Two Types of Retinal Vasoproliferative Tumors

Most vasoproliferative tumors (approximately 76%) occur for no apparent reason; the eye is otherwise healthy. These usually occur in a middle-aged person in the far peripheral retina usually in the lower outer quadrant. Figure 2 illustrates the typical appearance of such a lesion. The other smaller group (approximately 24%) has retinal vasoproliferative tumors develop in association with another disease, such as intermediate uveitis, previous retinal detachment surgery, toxoplasmosis or toxocara infection, or sickle cell disease. It is thought that the inflammation in these conditions may excite an unwanted growth of scar and vascular tissue producing the vasoproliferative tumor.

Von Hippel – Lindau Disease

By definition, retinal vasoproliferative tumors occur in patients who do not have Von Hippel – Lindau Disease, a genetic disease affecting multiple organ systems including the brain, eyes, adrenal glands, and kidneys. Serious and sometimes fatal

cancers can arise in this disease. The retinal vascular tumors seen in Von Hippel – Lindau Disease are often multiple, and they have extremely dilated feeding and draining retinal vessels in contrast to their absence in retinal vasoproliferative tumor. Often a family history of Von Hippel – Lindau Disease exists, whereas patients with retinal vasoproliferative tumors do not have affected family members as a general rules. In cases where doubt exists, genetic testing or MRI/CT scans of the brain and/or other organs may be obtained to make clearer the diagnosis.

Treatment of Retinal Vasoproliferative Tumors

The majority of retinal vasoproliferative tumors can be observed on a periodic schedule with no intervention necessary. If leakage or swelling become excessive, treatment with freezing (cryotherapy) or laser (either thermal laser or photodynamic therapy) may be recommended to decrease the problem and shrink the tumor. If scar tissue or bleeding develops, an operation called vitrectomy may be needed to remove the scar tissue or blood.

Final Comments

Retinal vasoproliferative tumors are uncommon and usually benign lesions that always require periodic monitoring and sometimes require therapy. Most involve only one eye, so patients almost always can continue to read and drive. After you read this brochure, we encourage you to browse our website, including the Frequently Asked Questions section and the Forums, where patients may share their experiences with one another. If you have a focused question for which you cannot find an answer, we welcome you to ask Dr. Browning at: ask@theretinaexchange.com. Also, an excellent resource for medical literature is Pubmed, on the National Library of Medicine website, accessible via a link on our website, or directly at www.pubmed.com.