

Vitrectomy in Uveitis

A Patient Education Monograph prepared for the American Uveitis Society **March 2003**
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NOTE: The opinions expressed in this monograph are those of the author(s) and not necessarily those of the membership of the American Uveitis Society, its leadership, or the Editorial Board of UveitisSociety.org. All medical decisions should be made in consultation with one's personal physician.

Introduction

The vitreous is a gel-like substance located behind the lens of the eye. Normally clear, the vitreous can become cloudy from inflammation inside the eye. This cloudiness, combined with inflammatory cells in the vitreous can obscure vision.

Vitrectomy is a surgical procedure that removes the vitreous and replaces it with a clear fluid that normally fills the front portion of the eye (this fluid is similar to salt water in composition). Your eye does not need the vitreous, so there are no problems with removing it, if necessary.

Reasons Vitrectomy Surgery May be Performed

Commonly accepted reasons to consider a vitrectomy in a patient with uveitis include:

1. Treating complications of uveitis such as vitreous opacification (clouding), vitreous hemorrhage (bleeding inside the eye), retinal detachment, epiretinal membranes (abnormal proliferation of scar tissue on the surface of the retina), scar tissue pulling on the ciliary body (fluid producing portion of the eye) leading to excessively low eye pressure, macular edema (swelling of the retina), and dense haze of the membrane holding a lens implant in place. Removing vitreous opacifications also allows your ophthalmologist to see into the back of the eye, which may provide clues to the origin of one's uveitis and/or allows the doctor to monitor the status of the condition.
2. To obtain a sample of the vitreous to aid in diagnosing suspected infections or cancer. Removing the vitreous from an infected eye permits culture and identification of the infectious germs to guide antibiotic treatment. Vitrectomy also decreases the number of infectious organisms and inflammatory cells in the eye, and allows a more thorough distribution of antibiotics within the eye.

3. **Treatment of the uveitis.** While not yet proven, in some forms of uveitis vitrectomy may speed recovery and reduce the need for corticosteroids and immunosuppressant medications.

History of Vitrectomy for Uveitis

The first human vitrectomy was performed in the early 1970s. Vitrectomy for uveitis began in the late 1970s for diagnostic purposes and for treating infections. Over the years, numerous technical advancements, such as smaller instruments and better systems for viewing inside the eye during surgery, have dramatically improved eye surgery success rates and treatment options. Vitrectomy is now a common procedure for treating many eye diseases.

Timing of Surgery

The appropriate time to consider vitrectomy for uveitis depends on 1) the cause of the uveitis, 2) treatment options already attempted, and 3) the course of the disease. Possible scenarios follow: :

1. Vitrectomy may be considered early for diagnostic purposes in the course of the disease for diagnosis if the cause of the uveitis is uncertain but suspected of having an infectious or cancerous cause.
2. Vitrectomy may be considered when uveitis does not respond to treatment with steroids and/or other immunosuppressants.
3. Vitrectomy may be considered after uveitis has become inactive but the eye is left with a densely opacified vitreous, an epiretinal membrane, or a densely opacified posterior lens capsule.

Technical Description

Two to three small openings are made in the eye wall to allow the insertion of small instruments inside the eye. One opening is attached to a small tube that supplies a sterile, clear fluid into the eye to maintain its pressure. A second opening is used for a light source to illuminate the eye's interior. A third instrument is inserted to cut and aspirate (which literally means to suck out) the vitreous. Dissolving stitches are used to close the eye wall openings at the end of surgery.

If vitrectomy is being performed to assist in determining the cause of uveitis, then the removed vitreous is submitted to a laboratory for diagnostic testing. These tests may include cultures for germs, examination of the material under a microscope for evidence of cancer, and measurements of various substances found with different forms of uveitis. Many results are known within a day but some specialized test may take up to one week or more depending on the test used and whether tests are performed locally.

What To Expect on the Day of Surgery

Before vitreous surgery, a history, physical exam, and diagnostic tests are performed to assess the patients overall health and address special considerations associated with surgery.

A vitrectomy is performed under sterile conditions in the operating room. Depending on the patient's situation, the estimated length of the procedure, and the surgeon's preference, various forms of anesthesia may be used. The surgeon and anesthesiologist will discuss these issues with

the patient. An injection of local anesthetic (numbing medication) may be given behind the eye to reduce pain and limit eye movements during surgery.

Nothing should be eaten nor drunk after midnight the night before surgery. If the patient is on any daily medications, it is a good idea to ask the doctor if these should be taken before surgery.

An intravenous line will be placed prior to surgery. Eye drops will be used to dilate the pupil of the eye. The patient's face will be cleaned with an antibacterial solution and then covered by a sterile sheet with an opening to expose the eye. The eye will be kept open by a metal lid speculum. Depending on the difficulty of the case, vitrectomy surgery generally takes one to two hours to complete. At the end of surgery, the operated eye will be covered with a gauze patch. Patients generally go home the same day of surgery. Discomfort is usually minimal after vitrectomy surgery. Over-the-counter pain medications such as Tylenol are often all that is required.

What to Expect after the Surgery

The patient will return to the clinic the next day for a follow-up examination. The eye patch will be removed and eye drop medication started. Eye drops commonly include corticosteroids to minimize inflammation, antibiotics to prevent infection, and a dilating solution to provide comfort and prevent adhesion of the pupil to the lens. Eye drops to lower eye pressure are also sometimes necessary.

If inflammation due to uveitis continues or worsens, the use of pill or eye drop corticosteroids may be necessary for several weeks to months. The operated eye will feel scratchy and will be watery for several days after surgery. This is generally due to the stitches used during surgery. Stitches are absorbed by the body and will dissolve within a week or two.

The frequency of follow-up examinations depends on the pre-existing eye condition and the status of the eye after surgery. Normal daily activities can be resumed within a few days to a couple of weeks after surgery.

The vision may or may not improve after surgery. In some cases, surgery is performed to prevent further loss of vision and no improvement is expected. In other cases, surgery is performed to improve vision. All patients should discuss with their doctor the exact goals of the surgery to be performed.

Possible Complications

Complications from vitrectomy uncommon, but possible. Due to the underlying disease process, complications after vitrectomy for uveitis can be more frequent than after vitrectomy for other diseases. Surgical complications can be mild or severe and include:

1. Bleeding
2. Cataract
3. Glaucoma
4. Infection
5. Retinal detachment
6. Blindness

Patients with uveitis that has been well controlled tend to have less surgical complications. Regardless of the degree of control before surgery, however, uveitis may reactivate after surgery. As with attacks of uveitis at any time, aggressive use of medications such as corticosteroids may be required to control the disease.

Conclusion

The use vitrectomy for uveitis continues to evolve. Eye surgery is a delicate procedure and complications can develop. Patients should clearly understand and discuss with their doctor the need for surgery, its benefits and goals, and possible complications that might result.

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