

CENTRAL RETINAL VEIN OCCLUSION

ERIC MANN M.D., Ph.D

Introduction

Central retinal vein occlusion (CRVO) involves the obstruction of the major drainage vessel of the retina in the eye. CRVO MAY BE A TOTALLY INDEPENDENT CONDITION. However, certain conditions are often associated with CRVO: glaucoma (high intraocular pressure), diabetes, and circulatory abnormalities. Due to the blockage, blood and fluid are backed up into the retina (nerve sheath) causing blurred vision. Not all eyes with CRVO behave the same. Some will have rapid resolution of the condition on a spontaneous basis. Others will continue to deteriorate. The prominent signs of deterioration include heavy hemorrhage, cotton-wool spots and extensive nonperfusion, lack of adequate blood supply to multiple areas. The latter 2 signs portend the development of rubeosis (abnormal new blood vessels on the iris (structure around the round opening of the eye), or retinal neovascularization (abnormal retinal vessels). Rubeosis can lead to neovascular glaucoma (high pressure in the eye), resulting in severe visual loss. Retinal neovascularization leads to hemorrhage or visual loss.

Panretinal photocoagulation for CRVO: panretinal photocoagulation (PRP) has been found to be useful in preventing or arresting neovascular glaucoma and retinal neovascularization, thus preserving vision in eyes with extensive nonperfusion or cotton-wool spots associated with CRVO. PRP makes use of laser with a certain wavelength (color) to deliver a large number of spots all over the retina (nerve sheath). The laser energy is delivered through a temporary contact lens. It is usually an outpatient office procedure. Pain control can be accomplished by eye drops or injection of anesthetics at the time of the procedure. The potential benefit is the prevention or arrest of the rubeosis, neovascular glaucoma, and retinal neovascularization (see above for definition).

WHAT RP DOES NOT DO:

1. Directly improve the status of the reading center and Cause immediate visual improvement.
2. Guarantee the arrest or prevention of rubeosis, Neovascular glaucoma, retinal neovascularization, and Hemorrhage in all cases.

In spite of treatment, the complications mentioned in 2 will develop or worsen in some cases.

RISKS AND COMPLICATIONS

1. COMMON

- a. Glare
- b. Photophobia
- c. Difficulty to dark adapt
- d. Decrease in peripheral visual field
- e. Decrease in central vision

A certain degree of central visual deterioration occurs in some eyes after treatment. This decrease is only temporary in some cases. CRVO itself without treatment often lead to central visual deterioration because of CME (swelling and fluid collection at the reading center).

- f. Mild to moderate inflammation in the eye can be controlled by medications.
- g. Corneal defect: defect at the first surface of the eye; Usually heals quickly.

2. UNCOMMON

- a. Retinal hole
- b. Retinal detachment: Separation of the nerve sheath from its usual position.
- c. Increased cataract or clouding of the lens.
- d. glaucoma (intraocular pressure rise).

3. Other potential complications and risks not listed here
May be discussed by the doctor.

ALTERNATIVES

Panretinal cryotherapy (PRC) uses cold energy to form lesion on the retina. It is not as commonly used a PRP.

Final visual acuity cannot be guaranteed. It is better, same, or worse than before treatment. The rationale for PRP is to arrest the progress of CRVO. However, **it is not** “foolproof”. It works well in many cases, but some cases do not respond to it.

POST TREATMENT MANAGEMENT

Specific eye drops are usually prescribed after treatment. Usually, no restriction is necessary. However, if blood is present in the vitreous cavity of the eye, the patient is encouraged to sleep with several pillows.

PERIBULBAR & RETROBULBAR ANESTHESIA

Absence of pain (anesthesia) and immobilization of the eye (akinesia) are often necessary to allow effective laser and cryotherapy treatment or intraocular surgery. Both anesthesia and akinesia can be obtained to a variable degree by injection of anesthetic (Lidocaine and/or Marcaine) around and behind the eyeball prior to treatment or surgery.

The following are **common** effects of the anesthetic injection but are usually temporary:

1. Blurring of vision
2. Numbness and swelling around the eye
3. Ptosis (drooping of the eyelid)
4. Diplopia (double vision)

The following are **uncommon** complications of the anesthetic injection:

1. Retrobulbar or periorbital hemorrhage (bleeding behind or around the eyeball)
2. Globe perforation (puncture of the eyeball by the needle used for anesthetic injection)
3. Optic nerve injury or vascular damage (central retinal artery or vein occlusion)
4. Allergic reaction to the anesthetic
5. Seizure
6. Cardiorespiratory arrest (death)
7. Bilateral akinesia

These uncommon complications may result in permanent loss of vision, need for further surgery or treatment, or loss of the globe. Other less common complications may be discussed as well.

Post treatment care may include applying ointment to the eye and wearing a patch for 24 hours.

RECEIPT OF POST-OP INSTRUCTIONS

I _____ have been given postoperative instruction information. I have had the opportunity to read, understand and ask questions regarding my planned surgical procedure(s). Dr. Mann has explained this procedure to me in depth. I have been informed in regard to the potential benefits, complications, risk and alternatives of the procedure. Sufficient time was allowed for me to ask questions and these questions were answered to my satisfaction.

Patient signature

Date

Witness signature

Date

**INSTRUCTIONS FOLLOWING LASER/CRYOTHERAPY
TREATMENT**

1. You may resume all of your normal activities immediately except for heavy lifting, exercise or physical exertion which you may resume in 3 to 4 weeks.
2. You may have discomfort or a headache following laser/cryotherapy treatment. Please take Tylenol but **NO** aspirin, Ibuprofen (Advil), indomethacin (Indocin) or other NSAIDS for pain unless your medical doctor recommends you take an aspirin a day for your heart or to “thin” your blood.
3. Due to intense brightness of the laser beam, there is a light-induced “dazzling” or “flashbulb” effect, and consequently your vision may be slightly decreased after the laser treatment. It may require a few hours to recover from this glare effect.
4. Please take pain pills as instructed and call immediately if you have persistent pain or sudden, new onset decreased vision at office phone number listed below or 866-856-7882 (after hours).
5. If you received retrobulbar anesthesia, keep the treated eye patched for 24 hours.
6. If you received eye drop prescriptions, please follow directions on the bottle.

**317 Salem Place Ste. 150
Fairview Hgts., IL 62208
Phone: (618) 632-8100
Fax: (618) 632-8101**

**533 Couch Ave., Ste 255
Kirkwood, MO 63122
Phone: (314) 835-9400
Fax: (314) 835-9401**

INFORMED CONSENT

I, _____ have been given the brochure(s) on Central Retinal Vein Occlusion and peribulbar & retrobulbar anesthesia. I have had the opportunity to read, understand and ask questions regarding this procedure(s).

Dr. Mann has explained this procedure to me in depth. I have been informed in regard to the potential benefits, complications, risks and alternatives of the procedure. Sufficient time was allowed for me to ask questions and these questions were answered to my satisfaction.

Patient signature

date

Witness signature

time

CONSENT SPECIAL/INFORMED TO SURGERY OR OTHER PROCEDURE

Name: _____

Date: _____

Medical record number /SS# _____

1. I hereby authorize Dr. Mann and / or such assistants, associates, or other health care providers that may be selected by him, to perform the following procedure (s)
Panretinal Photocoagulation _for vein occlusion
_____eye
2. Dr. Mann has discussed with me the procedure(s) listed above and the items of information that are briefly summarized below:
 - a. The nature and purpose of the proposed procedure(s): Panretinal photocoagulation treatment potentially arrests the progress of the vascular growth, thus indirectly leads to visual improvement or stabilization.
 - b. The risks and possible consequences of the proposed procedure(s), including the risk that treatment may not accomplish the desired objective(s) and including, but not limited to: Glare and light sensitivity, ocular irritation, decreased peripheral vision with narrowed visual field, decreased accommodation, decreased dark adaptation, choroidal neovascularization, retinal breaks or detachment, hemorrhage, inflammation, acute intraocular pressure rise, corneal abrasion or laser burns, cataract, loss of vision, or need for further surgery.
 - c. All reasonable alternative treatment, including risks, probable effectiveness of each and consequences if this proposed treatment is not received:
Alternative treatment.: panretinal cryotherapy
3. I am aware that, in addition to the risk specifically described in Item 2 above, there are other risks, such as severe loss of blood, infection, cardiopulmonary arrest, respiratory difficulties, injury to proximate/adjacent blood vessels, nerves, organs or structures, unanticipated allergic reaction to substances, pressure/position related injuries and other risks related to the performance of any surgical procedure.
4. I acknowledge that no guarantees have been made to me as to the results of the procedure(s) and am also aware that complications and risks may occur despite precautions.
5. I consent to the performance of unforeseen operation(s) and procedure(s) in addition to or different from those now contemplated and describe herein that the named doctor and his associates or assistants may deem necessary or advisable during the course of the presently authorized procedure(s).
6. I consent to the administration of such anesthetics as may be considered appropriate by the physician responsible for anesthesia administration or such assistants or associates as may be selected by him. I understand that this procedure is to be performed using **retrobulbar/topical** anesthesia. I understand that all types of anesthesia involve some risk. I further understand that if a regional, spinal or epidural anesthesia is planned, it may be necessary to also administer a general anesthetic. I understand that the risk of a general, spinal, epidural or regional anesthesia include, but are not limited to, mouth and/or throat pain or injury, cardiopulmonary arrest, cardiac arrhythmias, heart attack, respiratory difficulties, stroke, brain damage, headache, backache and other sensory, nerve, focal and systemic injuries.

7. I also consent to the administration of blood or blood components, drugs, medicines and other substances considered advisable by the physician(s) responsible for this procedure and the use of x-rays or other diagnostic testing, procedures and devices, which the above-named physician or his associates, consultants or assistants may consider useful.
8. I hereby authorize The Retina Group Ltd. Dr. Eric Mann or staff to preserve for scientific or teaching purposes or to otherwise dispose of any tissues, parts, organs, or implants removed during this procedure.
9. For teaching or educational purposes, I consent to the admittance of students, staff or other observers to the operating and procedure rooms, and to the taking of any videos or photographs deemed appropriate or necessary by the physician in the course of the procedure(s). I also consent to the taking of photographs or videos for the purpose of documenting the condition or procedure in the medical record. I understand that if data, photographs, videos or other information are used for teaching/educational purposes or for scientific publication, that my (the patient's) identity will remain confidential unless otherwise authorized by the undersigned.
10. I certify that I have read or have had the above information read to me and that I understand the above consent to operation or diagnostic procedure, that the explanations referred to were made to my satisfaction and I hereby give my informed and voluntary consent to the proposed procedure(s) or operation(s).

Signature of patient:

If the patient is unable to give informed consent because of physical or mental incapacity or mental incapacity or is a minor (under 18 and unemancipated), complete the following:
 Patient is unable to give consent because _____

:

Witness to signature

I certify that I have explained to the above individual the nature, purpose, risk and potential benefits of the above procedure and have answered any questions that have been raised.

Signature of Physician