

Brachytherapy for Malignancy of the Eye Information Sheet

General indications for the proposed procedure/treatment:

This procedure is done in an effort to treat a malignancy (tumor) involving the middle layer of the back half of the eye. This middle layer of the eye is called the choroid and is found between the sclera of the eye (the white outer covering of the eye) and the retina (the inner layer of the eye that is sensitive to light and enables vision). This procedure is most commonly done to treat choroidal melanoma, a malignant tumor that starts in the eye in the choroid layer. When this procedure is done for choroidal melanoma there is a very high cure rate (over 90%).

Description of the proposed procedure/treatment:

“Brachytherapy” is a term that means placing something radioactive on or in part of the body for some period of time. The purpose is to treat a tumor that is near the source of radioactivity. For choroidal melanoma, this is done by placing a small metal plaque containing tiny seeds of radioactive iodine (I^{125}) over the sclera of the eye. The plaque is placed on the sclera exactly next to where the tumor is located in the choroid. The procedure is done in the operating room under local anesthesia by the ophthalmologist. The plaque containing the radioactive seeds is sewn in place and left there for several days (usually about 5-6 days; that is, roughly 120-144 hours). Having the plaque in place is mildly uncomfortable or not uncomfortable at all. When the plaque is in place the eye continues to work.

Generally, after the plaque is in place and the patient has awakened fully from anesthesia, the patient is allowed to go home. When the time arrives for the ophthalmologist to remove the plaque, the patient returns to the medical center to have the plaque removed under local anesthesia. Generally, the patient returns home the same day .

Material risks and benefits of the procedure:

The risks of the procedure relate to the procedure itself and to the use of radioactivity on and around the eye and body.

There are risks associated with doing this surgery and these will be explained by the ophthalmologist.

The use of radioactivity around the outside of the side and back of the eye may be associated with mild discomfort or mild double vision while the plaque is in place and for a short period of time after it is removed. Months or years after the use of the radioactivity there is a chance of developing a cloudiness of the lens of the eye from having had radioactivity near the lens. The radioactivity can also damage normal retina that is near the tumor. This damage may or may not cause a noticeable decrease of vision in the treated eye depending mostly on where the tumor was in the eye. If the tumor is close to the most visually important part of the eye (the macula) then visual loss is much

more likely to occur. The ophthalmologist will inform the patient of the chances of having cataract or visual loss.

While the plaque is in place, a small amount of radioactivity escapes into the space immediately around the person “wearing” the plaque. This amount is small enough on a minute by minute and hour by hour basis that he or she is safe to go home without posing an unacceptable risk to family who live in the same household and to visitors to the household. In spite of this, just to be on the safe side, it is recommended that while the plaque is in place the patient should sleep alone in bed. Also, because small children and babies forming inside of their mothers may be unusually sensitive to the effects of radioactivity, it is recommended that the patient not be visited by pregnant women and/or people under the age of 25 while the plaque is in place. When the plaque is removed the patient is no longer radioactive and these restrictions/ suggestions no longer apply.

Material coming from the person’s body is not radioactive, including sweat, saliva, tears and liquid and solid body wastes. This is true both when the plaque is in place and after the plaque has been removed.

Procedure alternatives, if any:

There are only two accepted alternative treatments for choroidal melanoma. One possibility is to treat the eye with a special type of radiation made from a beam of protons. Proton radiotherapy is not generally available at this time and is technically more difficult. The chances of success or undesired side effects are not better than with brachytherapy. The other alternative treatment is to have the entire eye removed surgically. This is just as effective as brachytherapy for treating the tumor but results in immediate loss of the eye, including complete loss of vision from removing the eye and the cosmetic effects of having one eye missing.

Probable consequences of refusing the recommended procedure:

If the tumor is not treated in some way the tumor will continue to grow. Over time this may cause loss of vision in the involved eye and other local problems in and around the eye, including pain. This also increases the chance that the tumor will spread to other parts of the body and eventually cause death.

Persons providing the procedure/ treatment

Eye Doctor (Ophthalmologist)
Radiation Doctor
Radiation Physicist

The Eye Doctor (Ophthalmologist) is a member of the medical staff at Rush University Medical Center and is the physician who will identify and diagnose the choroidal melanoma and recommend the use of brachytherapy. This person will also do the actual surgical placement and removal of the plaque. The Ophthalmologist may work with resident physicians who are in training to learn Ophthalmology. Resident physicians are licensed physicians in an approved residency program. Their level of participation varies with their level of training and ability.

The Radiation Doctor, also a member of the medical staff at Rush University Medical Center, works in partnership the Ophthalmologist to make sure that all aspects of this procedure that are specifically related to the use of radiation are done as desired. Often a resident physician participates under the supervision of the Radiation Attending. Resident physicians are licensed physicians in an approved residency program. Their level of participation varies with their level of training and ability.

Radiation Physicists are Ph.D. or Masters level physicists who have taken special training in Medical Physics. Medical Physics is the discipline that supports the use of radiation for treating patients.

All of the senior physicians and staff are fully trained and either Board Certified or in the process of becoming Board Certified. In many cases certification requires both some years of experience after training as well as passing difficult certification exams.