

SPEAKER 1: Prior to the development of these radioactive plaques, we had to remove these eyes. And you'll see here, this is a procedure that saves the eye. And this patient, in particular, actually had 20/20 vision a few months after the surgery.

We start the surgery by opening up the conjunctiva, which is the skin of the eye, which you can see here, with our Westcott scissors. This is a fairly routine conjunctival peritomy that we create, and we do this about 180 degrees around the eye in an effort to isolate the rectus muscles.

And you'll see here, we've now isolated, with silk sutures, the superior, lateral, and inferior rectus muscles. And with our malleable retractor we're able to get extremely good visualization almost back to the macula and optic nerve of the eye. With the eye immobilized like this, we can begin to localize the tumor.

And the way we do that is two different ways. First of all, Lewis Cooper and Michael Ashenafi from radiation oncology, give me coordinates based on their 3-D reconstruction of this patient's tumor that I mark with calipers. Once they're marked with calipers and the marker here that you see I use indirect ophthalmoscopy and transillumination to verify that the marks are in the correct position. So it's an extra safety check.

We then take the custom designed and made dummy plaque. This is a representation of the plaque we're going to use, but this is not radioactive. And this is so that we can see the fit of the plaque. And this allows us to, very precisely, mark exactly where we're going to place this radiation on the eye. We take all these precautions because it's really important to minimize the radioactive dose to the nerve, and to the central vision, and the macula, and maximize the radiation to the tumor.

And the radiation oncology team actually is very, very precise with the customization of these plaques and the radiation, down to the level of microns to make sure that we give the patient the best possible chance of destroying the tumor while saving vision.

You'll see that these-- what we're doing now is placing the suture on the eye. We place the suture in the sclera to hold the plaque at the two rabbit ears, at this superior edge of the plaque. The sclera is extremely thin. It's between 0.3 and 1 millimeter in thickness and we do partial thickness bites here. And you'll see they're sufficient to anchor the plaque in place for the four day duration that we keep the plaque on.

So what we do is, after we've placed the-- after we placed the radioactive plaque, we will admit the patient to our incredible hospital of service here for four days. And then come back and remove the plaque.

Using this treatment we get about 98% control of the tumor locally. And it and we are so far had pretty good results with vision. You'll see here is the placement of the actual plaque. It's a gold plated, circular plaque in this case. And that the bottom side has the radioactive seeds custom inserted by the radiation team.

You'll see that what we did for this patient is we did not dis-insert the lateral rectus muscle. Some people will dis-insert the muscle and put it back later in order to get the plaque in the correct positioning. But we chose to put it underneath the muscle in an effort to decrease the chance of double vision post-operatively. And using this method, we have very good results as far as post-operative diplopia rates. You'll see here, now that the plaque is secured, we just verify one more time that it's in the perfect position that the radiation oncologist like.

And, at this point, we're going to remove the silk sutures and you'll see that we use [INAUDIBLE] micro suture to close the conjunctiva overlying the tumor. The one thing that we do offer our patients that we did not do for this case was genetic testing. And so before I place the plaque I will take a sample of the tumor for genetics. And that's how we treat choroidal melanoma here at the Medical University. Thank you.