Iris and Ciliary Body Melanoma

Standards, Innovations and Future Directions

What you need to know!

The methods for diagnosis of patients with iris, iridociliary and anterior uveal tumors have changed. Herein, these changes are described along with why they are important for your patients.

Page 3

Iris and Ciliary Body Tumor Resection: Surgeries of the Past for Melanoma?

Dr. Finger rarely performs a surgical iridectomy or iridocyclectomy for an iris or iridociliary melanoma. As compared to external application of plaque radiation therapy, intraocular surgeries carry greater risk of intraocular infection, hemorrhage, retinal detachment and cataract. In addition, removal of the iris typically results in a large "key-hole" pupil and symptoms of glare.

In contrast, plaque radiation therapy offers preservation of the iris and its function. Eye cancer specialists used to worry about radiation retinopathy or corneal opacity. However, with over 18-years experience with this technique, it appears that cataract is the primary complication of therapy. These lens opacities are easily repaired with standard cataract surgery. The risk of radiation retinopathy and optic neuropathy is minimal.

Continued on Page 4

Iris Tumor Types

Cysts	Most cysts are located at the iris root and cause bulging of the iris stroma
Nevi	These tumors are common and should be differentiated from melanoma
Melanoma	Both vision and life threatening, these tumors can now be safely treated
Metastasis	Most patients will present with a history of systemic metastases.
Others	Many different tumors occur in the anterior segment and can be differentiated.

High frequency ultrasound imaging (UBM) can be used to monitor for tumor growth and regression after ophthalmic plaque radiation therapy.

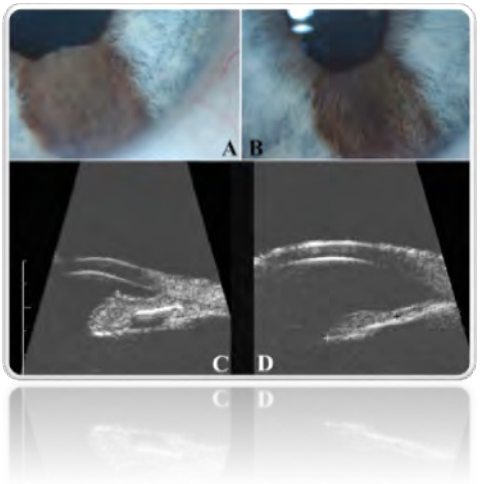
High-frequency Ultrasound Imaging for Anterior Segment Tumors

The advent of high-frequency ultrasound imaging (also known as UBM) has revolutionized the practice of ophthalmology and ophthalmic oncology. We can now visualize and measure eyelid, conjunctival, iris, iridociliary and anterior uveal tumors.

Many patients sent to The New York Eye Cancer Center are noted to have a bulging iris stroma. UBM typically reveals a cystic mass just posterior to the iris root that induces focal angle closure. Complete examination of the anterior segment may reveal multiple additional neuro-epithelial iris cysts. However, sometimes it can be the advancing edge of a malignancy, an iris pigment epithelial cyst or the result of ocular inflammatory disease. Clearly, UBM has allowed us to "see" in previously obscure parts of the eye.

Researchers at The New York Eye Cancer Center originally described its use for measurement of anterior melanomas before and after plaque radiation therapy.

High-Frequency Ultrasound Characteristics of 24 Iris and Iridociliary Melanomas: Before and After Plaque Brachytherapy. Finger PT, Reddy S, Chin K. Arch Ophthalmol 2007;125(8):1051-1058.



Melanoma of the Iris Before Plaque and 14 months later

We use slit lamp photography and high frequency ultrasound imaging to assess and document tumor regression. Note that the cornea is clear despite radiation. We have found the cornea to be particularly resistant to radiation. Note preservation of the iris and pupil.

This is an image of a gold eye plaque surgically attached to the eye wall above a malignant melanoma of the iris and ciliary body prior to closure (being covered with a Gunderson flap for comfort).

Eye Plaque Irradiation

This photograph demonstrates how an eye plaque can be placed onto the cornea as to treat a portion of the iris. Based on high-frequency ultrasound imaging (UBM) we calculate how deep the radiation needs to penetrate in order to destroy the underlying malignancy.

Dr. Finger originally described this technique in 2001. At that time he had followed patients for almost 10 years with more than 90% keeping within 2 lines of their original vision and no significant corneal damage.

He now has 18 years of experience with this technique and has found it to be a both a safe and effective method to destroy iris and iridociliary melanomas.

The Finger Iridectomy "tumor-biopsy" Technique

Iris tumor biopsy gives the doctor and patient pathology confirmation of the clinical diagnosis.

With the advent of 25-gauge aspiration cutters, Dr. Finger realized that safer, well-controlled biopsies could be performed.

"Only the Finger Iridectomy Technique allows for a partial thickness iris biopsy through a sub millimeter self-sealing corneal incision."

Tumors can form in the iris and extend from the ciliary body into the front of the eye (anterior segment). When they are documented to grow, are large and causing problems or are suspected of being malignant your eye cancer specialist may suggest a biopsy. Though an examination can be very accurate to make a clinical diagnosis, having a pathologist look at a piece (biopsy specimen) can help make sure.

In the past, a sharp needle has been inserted through the cornea as to pierce the tumor and aspirate cells. This is called fine-needle aspiration biopsy (FNAB). Though one center has reported 100% success with this technique, most centers do not.

Recently, Dr. Finger has introduced a newer, safer and more efficient technique using a small rounded needle-shaped device called an "aspiration-cutter" to biopsy anterior segment tumors. This device has a small window on one side that is used to draw-in and slice off little bits of tumor. This not only provides cells for the pathologist, but also offers little pieces that can be examined with special immunopathology techniques. It is called the "Finger Iridectomy Technique - FIT."

Side Effects / Complications

There is always a chance of infection, hemorrhage, cataract or other side effect associated with an intraocular procedure. However, with small incision surgery these risks are low. The actual percentage risk associated with these procedures is not known.

Post Treatment Care

Post-operative care depends on the type of surgery performed. The small incision techniques typically require corneal wounds so small that they do not require stitches (sutures). However, we prescribe antibiotic, pressure lowering, steroid and relaxing (cycloplegic) medications to maximize your comfort and minimize your risks of infection and inflammation.

The Finger Iridectomy Technique: Small Incision Biopsy of Anterior Segment Tumors.
Finger PT, Latkany P, Kurli M, Iacob C
The British Journal of Ophthalmology 2005;89:946-949

Small Incision Surgical Iridotomy and Iridectomy.
Finger PT. Graefes Arch Clin Exp Ophthalmol. 2006;244:399-400.

The Finger Iridectomy Technique for Glaucoma.
Finger PT British Journal of Ophthalmology 2007;91:1089-1090.

Continued from page 1

We currently use palladium-103 ophthalmic plaque radiation therapy for most cases of iris and iridociliary melanoma. This is because pre-operative comparative radiation dosimetry typically reveals that the selection of palladium-103 will offer a dose reduction of 30-40% to the macula and optic disc.

The gold of the eye plaque absorbs over 99.75% of the radiation directed out and to the sides of the plaque. Therefore, there is less dry eye and no eyelash loss.

Dr. Finger makes very effort to minimize irradiation of normal tissue. This is why he has designed custom-shaped plaques. Depending on the size and shape of the tumor, plaques are selected to treat the tumor plus a margin of normal appearing tissue to prevent a miss.

In 2009, a review of the last 400 cases of palladium-103 ophthalmic plaque radiation therapy was published in the scientific journal, OPHTHALMOLOGY. We found a local control rate (rate of killing the tumor in the eye) of 96.7% and that 79% of patients retained useful vision. This track record was better than most all published series.

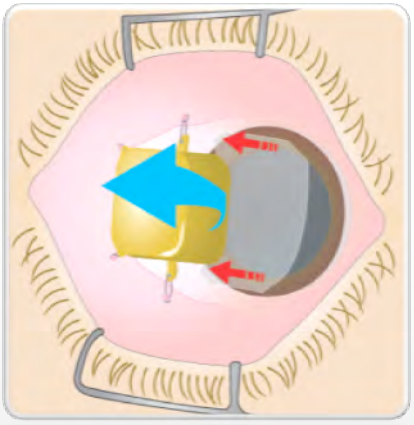
Palladium-103 Ophthalmic Plaque Radiation Therapy for Choroidal Melanoma: 400 Treated Patients.
Finger PT, Chin KJ, Duvall G et al. Ophthalmology 2009;116:790-6.

Tumour Location Affects the Incidence of Cataract and Retinopathy after Ophthalmic Plaque Radiation Therapy.
Finger PT. Br J Ophthalmol 2000;84:1068-70

Plaque Radiation Therapy for Malignant Melanoma of the Iris and Ciliary Body.
Finger, PT Am J Ophthalmol 2001;32:328-35.

Anterior Segment Tumors: Current Concepts and Innovations.
Marigo FA, Finger PT Surv Ophthalmol. 2003 Nov-Dec;48(6):569-93.

Notes:



Finger's Amniotic Membrane Buffer Technique

In 1991, Dr. Finger published his findings on radioactive eye plaque therapy for iris and iridociliary melanomas. With up to 10-years follow up, he found that this treatment offered excellent local control with preservation of the iris and long-term clarity of the irradiated cornea.

In contrast to surgical removal, plaque therapy was done on the outside of the eye, did not risk intraocular hemorrhage or infection and preserved the normal iris function. Unlike intraocular surgical resection, larger margins could be treated.

Unfortunately, having a gold-metal plaque sewn to the cornea for 5-7 days was very uncomfortable.

This is why Dr. Finger immediately recognized that sliding a paper-thin piece of donor amniotic membrane between the plaque and the cornea would improve patient comfort. In addition, since this is human tissue, it does not affect the radiation therapy.

Finger's Amniotic Membrane Buffer Technique. *Finger PT Arch Ophthalmol 2008;126(4):531-4.*

About Paul T. Finger, MD

In his efforts to save life, conserve eyes and vision; Dr. Finger has pioneered the use of palladium-103 plaque radiation for choroidal melanoma, the use of 3D and high-frequency ultrasound imaging for intraocular tumors, and has created world-renowned web site (e.g. http://eyecancer.com).

Dr. Finger has developed new methods for the diagnosis and treatment of many ocular tumors, holds several patents and has written hundreds of scientific publications. Dr. Finger lectures frequently at local, national and international meetings.

Dr. Finger is board certified by "The American Board of Ophthalmology" and is a Fellow of both the American College of Surgeons and the American Academy of Ophthalmology and cares for patients from all over the world.

Dr. Finger is a Clinical Professor of Ophthalmology at New York University School of Medicine and Director of Ocular Tumor Services at The New York Eye Cancer Center, The New York Eye and Ear Infirmary, Manhattan Eye, Ear and Throat Hospital and NYU-Affiliated Hospitals

The New York Eye Cancer Center

115 East 61st Street – Suite 5B
New York, NY 10065

1212-832-8170 and http://paultfingermd.com

[Recipient]

Address Line 1
Address Line 2
Address Line 3
Address Line 4