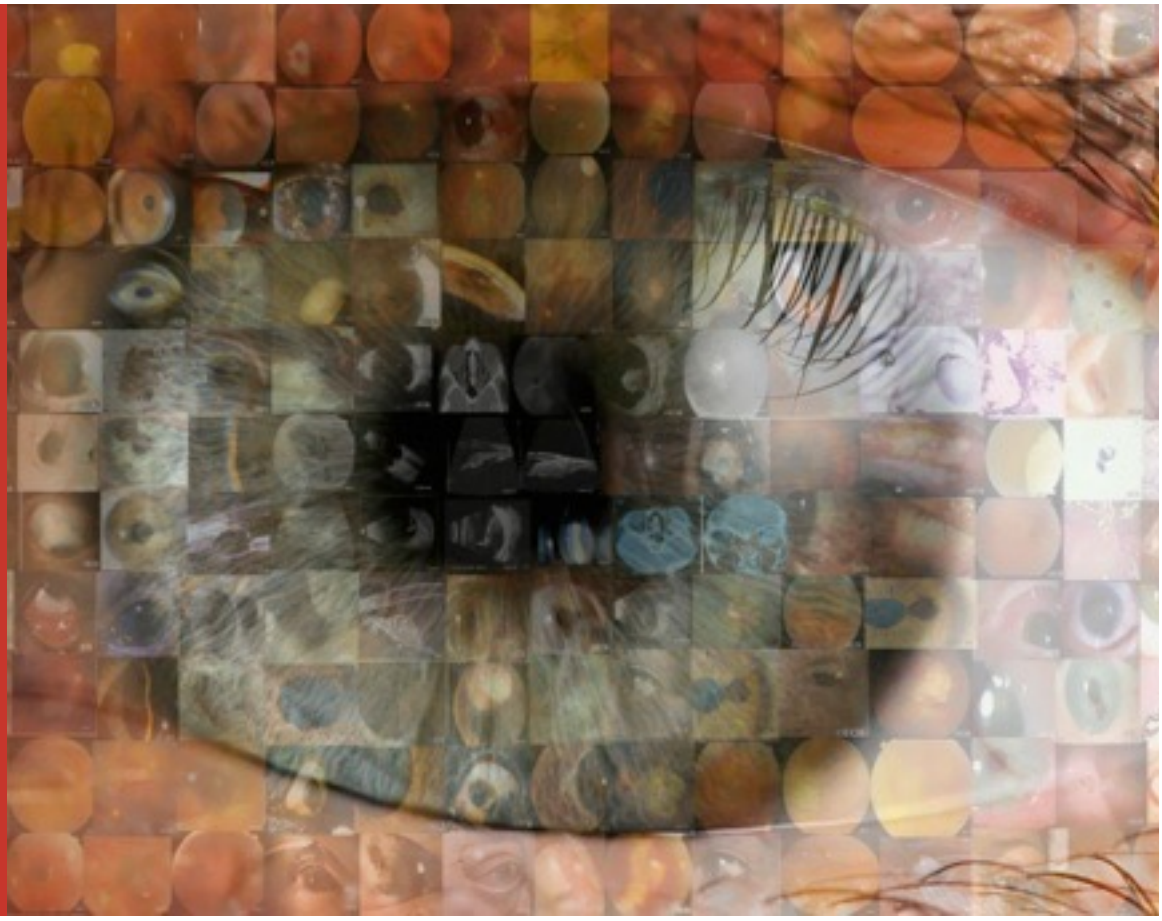
Choroidal MELANOMA

2015 EXCELLENCE THROUGH INNOVATION



Choroidal melanoma can take many forms and shapes. There is posterior choroidal melanoma, ciliary body melanoma and iris melanoma. Together they are called uveal melanomas.

The Most Common Primary Intraocular Tumor: In Adults

The methods of diagnosis and treatment for uveal melanomas have changed over the years. This brochure will explain the basics for patients, their families and eye care specialists.

Though choroidal melanoma is the most common cancer to arise in the adult eye; it is very rare. Yearly, it occurs in 4-6 people per million in the USA and is found in 10-12 per million in Australia, Europe and Russia. More common in people with outdoor occupations, those with blue irises and fair skin, it is reasonable to assume that ultraviolet radiation from the sun plays a role. That's one reason why Dr. Finger says, "think of sunglasses as sun block for your eyes." TM

In 2009, Dr. Finger published* his patient outcomes for 400 cases of intraocular melanoma treated with palladium-103 plaque radiation therapy. It was important to notice that he found a local control rate (rate of killing the tumor in the eye) of 96.7% and that 79% of patients' retained useful vision. These results rank among the highest in the world. It is important because local tumor control improves survival and seeing improves patient quality of life.

Since then Dr. Finger has published* that patients plaque-treated for smaller choroidal melanomas are more likely to survive and that the dose to normal tissues within the eye are almost always less if your eye cancer specialist uses a palladium-103 radiation plaque rather than one with iodine-125 seeds.

Dr. Finger has so much experience with radiation of the eye, he was selected by the American Brachytherapy Society to create and published international guidelines for eye plaque radiation therapy of choroidal melanoma and retinoblastoma. *

****individual papers are available on request***

The New York Eye Cancer Center 1212-832-8170 pfinger@eyecancer.com

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The Diagnosis of Choroidal Melanoma
Clinical Diagnosis Versus Biopsy

Your eye cancer specialist should be able to make the diagnosis of choroidal melanoma with more than 99% accuracy ***without a biopsy***.

It can be as simple as Dr. Finger's nemonic ***MOST*** for most cases. **M**elanoma = **O**range pigment lipofuscin, **S**ubretinal fluid and **T**hickness of more than 2 mm. If those three findings are present the tumor is a choroidal melanoma.

While some centers are suggesting biopsy to determine the genetics of each melanoma, Dr. Finger knows of no center that uses that information to change their methods of treatment or follow up. Since there is risk involved with placing a needle or biopsy instrument into the eye, Dr. Finger recommends biopsy when:

1) the clinical diagnosis is uncertain,
2) a patient requires a diagnosis by pathology
3) the intraocular tumor is not a melanoma but thought to be a metastasis from a hidden "occult" primary source.

"Very few patients have to risk an intraocular biopsy in order to determine the diagnosis of choroidal melanoma."

"Current technology analysis employed by an eye cancer specialist allows for 99.6% diagnostic accuracy by clinical examination alone."

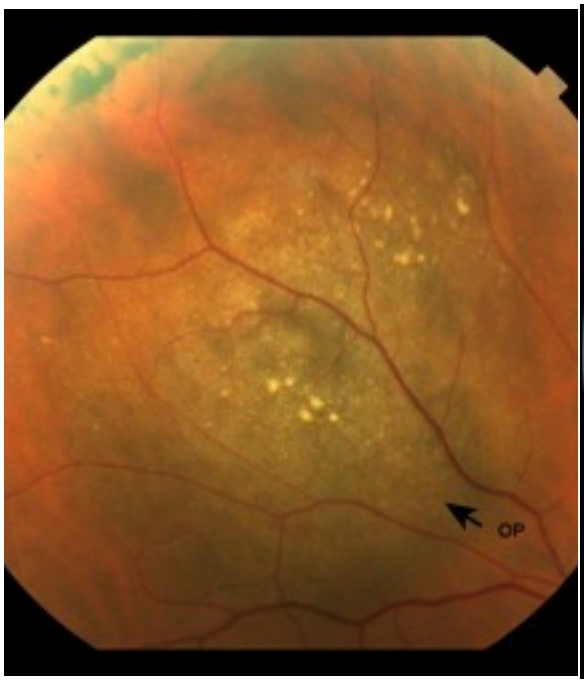
However, there are choroidal melanomas that don't have all the classic **MOST** characteristics. These tumors require special testing such as fundus autofluorescence (FAF) to highlight orange pigment lipofuscin or optical coherence tomography (OCT) to uncover small amounts of leaking fluid and fluorescein angiography to look for intense leakage, tumor blood vessels or microscopic anuerysms. In addition, ultrasound imaging can be crucial for making tumor measurements as well as assessing internal tumor characteristics.

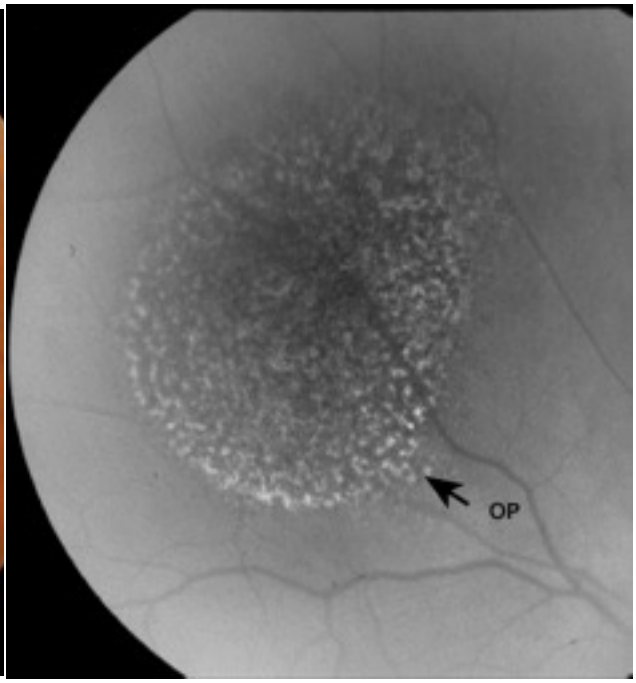
Dr. Finger says, "it never hurts to request a baseline eye cancer specialists analysis for any suspicious choroidal tumor."

Clinical Images:

Left, a choroidal melanoma with orange pigment lipofuscin, retinal fluid and thickness more than 2 mm.

Right, fundus auto-fluorescent imaging is used to highlight "white dots" the presence of the orange pigment lipofuscin.





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Melanomas Near or Touching the Optic Nerve

In order to better treat melanomas that touch, surround or cover the optic nerve, Dr. Finger developed special "slotted" plaques. Finger's slots are not old-fashioned notches. Based on the orbital optic nerve sheath diameter, Dr. Finger created special 8-mm wide variable depth slots in standard gold plaques. This breakthrough technique is currently the only way to normalize the plaque's position to treat these tumors.

In 2013, Dr. Finger published* his 5-year results using slotted plaque radiation therapy. This normalization of the plaque position beneath the tumor improved local control and prevented metastasis.

Finger PT, Chin KJ, Tena LB. A Five-Year Study of Slotted Eye Plaque Radiation Therapy for Choroidal Melanoma: Near, Touching or Surrounding the Optic Nerve. Ophthalmology 2012:119:415-22.

Anti-VEGF Therapy Discovered to Preserve Vision after Radiation Therapy

In 2005, Dr. Finger discovered that repeated intraocular injections of anti-VEGF medication preserved vision previously lost due to radiation retinopathy and radiation optic neuropathy.

He soon published this work in the American Journal of Ophthalmology and the Archives of Ophthalmology. In 2009, the United States Government awarded him a patent for "Anti-VEGF Treatment for Radiation-induced Vasculopathy."

He is working on guidelines for others to use this successful therapy.

"Most patients with melanoma patients should be able to retain useful vision for up to 10-years after radiation treatment."

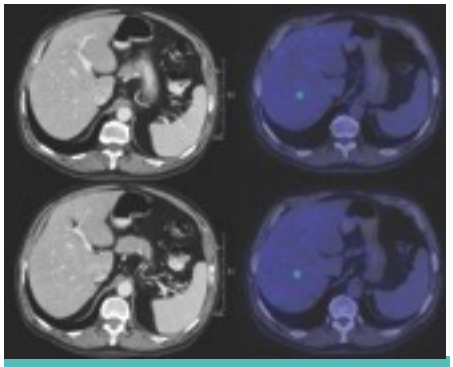
Clinical Guidelines Established for Plaque Radiation of Choroidal Melanoma

Headed by Dr. Finger, the American Brachytherapy Society Ophthalmic Oncology Task Force published guidelines for plaque radiation treatment of choroidal melanoma.

The task force committee was composed of 47 eye cancer specialists from 10 countries. Each recommendation was graded by level of consensus.

They found that tumors of the iris, ciliary body and choroid could be treated. However, patients with blind and painful eyes should not. Criteria for tumor size and methods of plaque treatment were specified.

"At The New York Eye Cancer Center, 93% of patients are treated with eye and vision sparing plaque radiation therapy."



CT alone Vs. PET/CT Imaging
In this case, the PET enhancedCT revealed a solitary metastatic focus that was not seen on standard CT or MRI

PET/CT Imaging
Whole Body Scanning for Uveal Melanoma

333 patients with uveal melanoma treated at The New York Eye Cancer Center were screened for metastasis prior to treatment. PET/CT improved our ability to detect metastases because it is very sensitive for finding liver metastasis and was the only method that evaluated other possible sites (e.g. bone, lung, skin).

PET/CT offers the most complete methods of screening for metastatic choroidal melanoma.

PEARLS:

1) Only larger T-staged tumors exhibited metastasis.
2) Second cancers were found irrespective of melanoma size.
3) Liver involvement was found in all patients with metastasis.

Freton, Chin, Raut, Tena, Kivela, Finger European Journal of Ophthalmology 2012;22:236-43

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About Paul T. Finger, MD

Dr. Finger is a specialist in ocular tumors, orbital diseases and ophthalmic radiation therapy. He 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 is invited to lecture frequently at local, national and international meetings. He is founding Director of The New York Eye Cancer Center and The Ocular Tumor Services of The New York Eye and Ear Infirmary and NYU School of Medicine.

Dr. Finger is the Chair of the (AJCC) American Joint Committee on Cancer's Ophthalmic Oncology Task Force and a member of the Committee on Cancer (COC) of the American College of Surgeons. Further, he has consulted for The American Brachytherapy Society (ABS) and the Association for Physicists in Medicine (AAPM).

For more information visit his web site:
http://paultfingermd.com

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