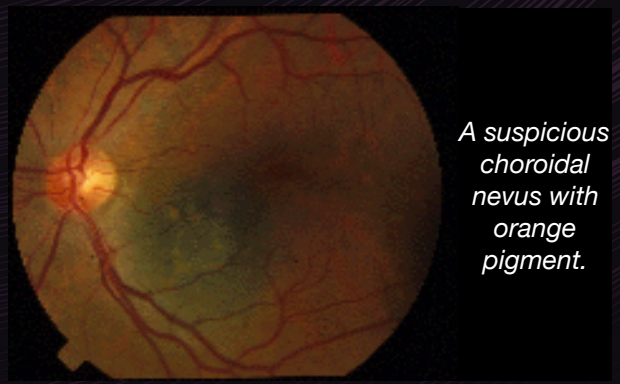
Diagnosing Small Choroidal Melanomas

Modern diagnostic techniques have improved our ability to detect smaller and smaller intraocular melanomas as well as more and more subtle changes in tumor size and patterns of tumor leakage. These include: ultrasound measurements, intraocular angiograms (FA) and laser-assisted 3D retinal imaging (OCT).

Tumor-specific characteristics have been found to carry diagnostic value. For example, a choroidal tumor with orange pigment on its surface (best seen with fundus autofluorescent imaging (FAF), thickness of greater than 2 mm (best measured by ultrasound imaging), *and* subretinal fluid (best seen by OCT is almost certainly a small malignant choroidal melanoma. That is why Dr. Finger invented his mnemonic **M.O.S.T.**

Melanoma = **O**range Pigment, **S**ubretinal Fluid and **T**hickness > 2mm

However, there are tumors with some or none of these diagnostic features. With those, documented tumor growth or change is commonly used to differentiate between a *suspicious choroidal nevus and* a small *choroidal melanoma*.



A suspicious choroidal nevus with orange pigment.

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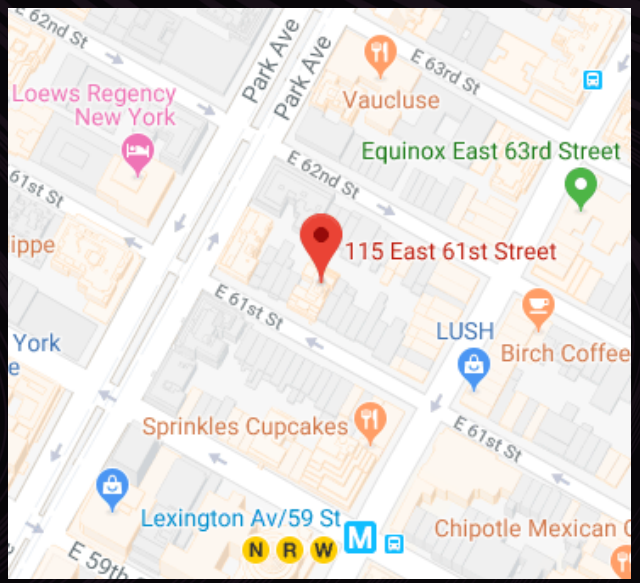

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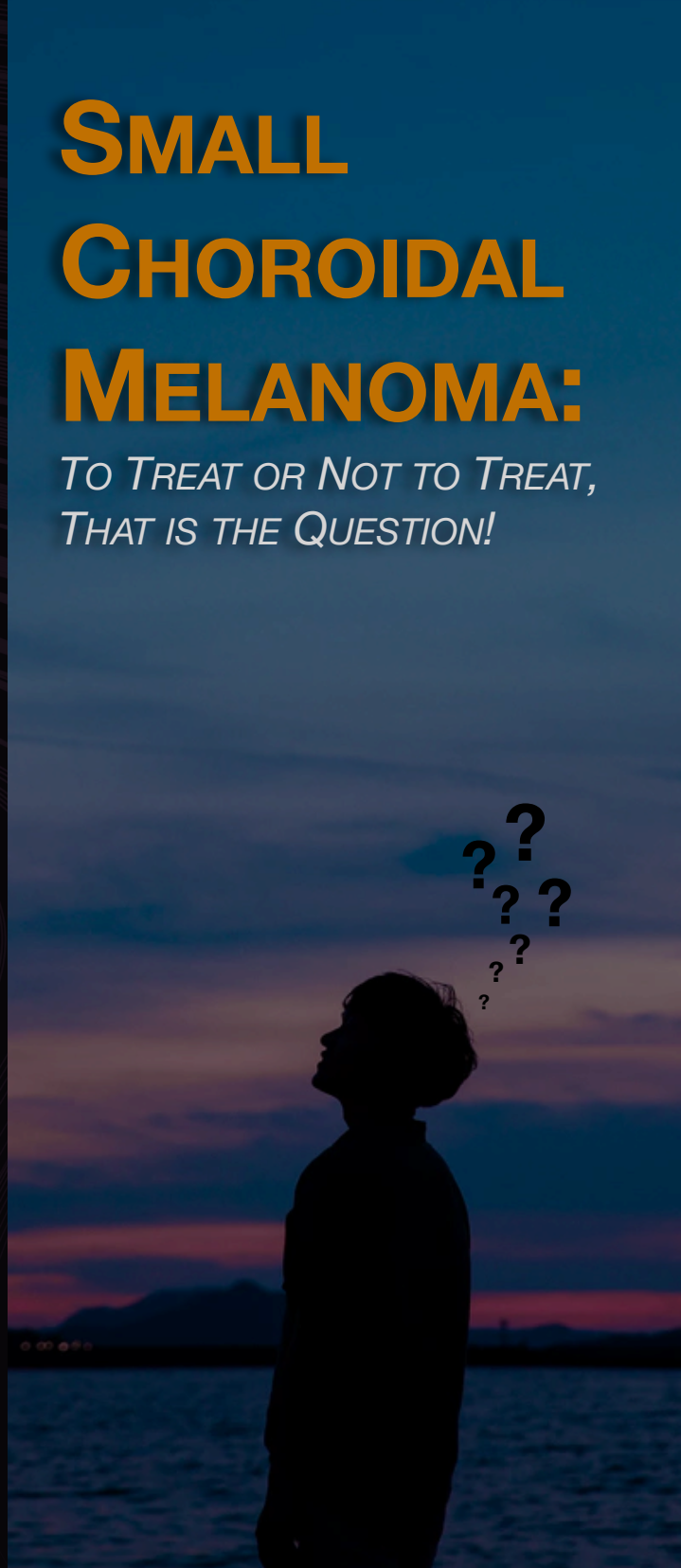
Small Choroidal Melanoma:

To Treat or Not to Treat, That is the Question!



The Case for "Observation as Treatment"

Many eye cancer specialists watch small choroidal melanomas for evidence of tumor-growth prior to treatment. This is because small choroidal melanomas carry a low risk (6-10%) for metastases and all current treatments risk severe vision loss.

Observation of small choroidal melanomas is also justified by the concept that "tumor-growth demonstrates malignancy." In practice, documented tumor growth confirms that the tumor is malignant and that treatment is necessary. Specifically, the risk of treatment-related vision loss is greatly offset by a reduction in the probability of metastasis and tumor-induced vision loss.

For our patients, the case for observation of small melanoma growth has been governed by the potential benefit of vision preservation.

Continued Observation After Documented Growth

Few eye cancer specialists would recommend continued observation once growth has been documented. Documented rapid (e.g. months) tumor enlargement indicates that a suspicious choroidal nevus is actually a malignant choroidal melanoma with potential to cause loss of vision and for spread to other parts of the body. Once a small choroidal melanoma has grown, treatment offers the best chance for preservation of both life and vision.

The Case for Immediate Treatment

Once an eye cancer specialist is convinced that a tumor is a malignant (albeit small) choroidal melanoma, it has the potential to spread to other parts of the body and treatment (tumor destruction) becomes the most reasonable choice.

Many studies have shown (e.g. Collaborative Ocular Melanoma Study, AJCC, OOG and others) that increased tumor size was associated with an increased risk of metastasis.

Therefore, it is reasonable to assume that waiting for documentation of minimal melanoma growth, also minimally increases a patient's risk for metastatic tumor spread.

In discussion with your eye cancer specialist, the patient should weigh that risk against treatment-related loss of vision.

Plaque Radiation Therapy using gold plaques (above) is a common technique used to treat choroidal melanoma.

Doing the Least Harm

Physicians will determine the patient's ability to understand what has been presented and recommend an acceptable approach to do the "least" harm. It should be noted, however, that one of the biggest reasons that deters the decision for treatment is radiation-related vision loss. That risk has been greatly reduced since 2006, when Dr. Finger discovered the use of anti-VEGF medications to preserve vision in eyes affected by radiation maculopathy and optic neuropathy. Radiation related loss of vision can be slowed by periodic intravitreal drug therapy. This discovery has changed the radiation risk profile and thus the balance between observation and treatment.

Until better methods of differentiation are available, "**Observation as Treatment**" will continue to be the standard of care for benign and suspicious choroidal nevi, as well as most small indeterminate choroidal tumors. Treatment will be recommended for small malignant choroidal melanomas; particularly for those tumors that are