About Metastasis to the Eye and Orbit
Trends in Diagnosis and Treatment

By Paul T. Finger, MD

Metastases from other cancers to the eye occur in up to 10% of patients with metastatic disease (more than one organ). However, few of these patients ever come for eye examination. This is because most ocular metastases are typically hidden, not in the macula and do not cause loss of vision.

However, some intraocular metastasis can affect the macula, optic nerve or anterior segment (front) of the eye. The former causes vision loss and the latter can induce painful glaucoma. Similarly, orbital metastases can compress the optic nerve or push the eye forward (proptosis) leading to corneal exposure damage. Thus, ocular metastases can be emergencies that require prompt treatment.

The most common sources of ocular metastasis are breast cancer (primarily in women) followed by lung cancer (more commonly in men). However, other less common sources include gastrointestinal, prostate, lymphoid, leukemia, thyroid, kidney and skin (primarily melanoma).

Prompt treatment with external beam radiation therapy typically offers the best chance for retention of vision and the eye, one must first determine the primary source.
The Diagnosis of Metastatic Cancer to the Eye and Orbit

Most patients whose cancer has spread to the eye will present to the eye cancer specialist knowing that they had a prior cancer or already have metastatic disease.

However, when the eye is the first to become symptomatic, when a patient typically notices flashing lights, distortion or loss of vision, we at The New York Eye Cancer Center, diagnose the eye tumor then examine (stage) the entire body with PET/CT imaging.

In 2012, researchers at The New York Eye Cancer Center discovered that PET/CT imaging could be used to find the origin of the non-ocular origin of metastatic tumors. In addition, we found that biopsy of the original and metastatic sites was preferable to biopsy inside the eye.

Other metastatic cancers can be found in the eye and orbit. For example, leukemia and lymphoma also affect the eye and orbit. Typically radiation sensitive, these tumors require relatively little radiation to control these tumors. In contrast, systemic chemotherapy can also be used to treat metastatic tumors to the eye and orbit. However, chemotherapy typically takes longer to work risking vision loss from more longstanding tumor-related retinal detachment.

New techniques involving injection of medications into the eye can be used to temporarily fix or control select intraocular metastatic tumors. However, it is Dr. Finger’s opinion that all new treatments should be compared to standards like radiation therapy.


About Paul T. Finger, MD

Clinical Professor of Ophthalmology, 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 many 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 consults for The American Brachytherapy Society (ABS) and the Association for Physicists in Medicine (AAPM).

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