

# METASTATIC TUMORS

2016 - Excellence Through Innovation

Dr Finger says, "Think of Sunglasses as Sunblock for your Eyes." These tumors are related to ultraviolet (UV) exposure.



## 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

**“The most common sources of ocular metastasis are breast in women and lung in men. Dr. Finger says, “In my experience, early treatment offers the best chance for preservation of vision.”**

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.

[Whole-body 18F FDG positron emission tomography/computed tomography evaluation of patients with uveal metastasis. American Journal of Ophthalmology 2012;153\(4\):661-8.](#)

[Choroidal metastasis fundus autofluorescence imaging: correlation to clinical, OCT and Fluorescein angiographic findings. Ophthalmic Surgery, Lasers and Imaging 2010;41\(4\):406-12.](#)

[Visual Recovery after radiation therapy for bilateral subfoveal acute myelogenous leukemia \(AML\). American Journal of Ophthalmology 2004;138\(4\):659-62.](#)

[Visual recovery after radiation therapy for orbital lymphoma. American Journal of Ophthalmology 1992;114\(5\):645-6](#)

## Biopsy of Metastatic Tumors to the Eye and Orbit

In 2012, Dr. Finger invented a new micro-incision orbital tumor biopsy technique called, “FACT.”

He found it works best for metastatic tumors to the orbit.

FACT allows for biopsy through a self-sealing 3 mm orbital incision.

Fact allows for a faster recovery compared to typical anterior orbital surgery.



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### SURGICAL TECHNIQUE

## Minimally invasive anterior orbitotomy biopsy: Finger’s aspiration cutter technique (FACT)

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**Purpose:** To evaluate aspiration cutter-assisted small-incision anterior orbitotomy. **Methods:** Three patients with orbital adnexal tumors underwent orbital biopsy through a 3-mm incision in the eyelid skin (n=2) or conjunctival fornix (n=1). Standard aspiration cutters were introduced into anterior and posterior orbital tumors utilizing a bimanual technique. Multiple passes were made into the tumor. Fresh specimens were analyzed for adequacy prior to the end of surgery. **Cytopathology, histopathology, and immunohistochemical analysis** were performed.

**Results:** Aspiration cutter technique biopsies were diagnostic in 2 of 3 cases. Diagnoses were orbital lymphoma, metastatic endometrial adenocarcinoma, and metastatic prostate cancer. The 20-G aspiration cutter yielded the most tissue. No sutures were required for the small incisions.

**Conclusions:** Sutureless, aspiration cutter biopsy offered benefits commonly associated with fine needle aspiration biopsy, controlled aspiration, and enclosed mechanical cutting.

**Key Words:** Anterior, Aspiration, Biopsy, Cutter, Orbit, Technique

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## 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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