



Considerations for the management and triage of ocular oncology cases during the COVID-19 pandemic (UPDATED APRIL 5, 2020)

SARS-CoV-2, the virus that causes COVID-19, is a novel pathogen. It is spreading rapidly in the United States and our understanding of its behavior, transmissibility, and best practices to reduce risk for spread remain limited. Rationing of resources is already occurring in response to the COVID-19 pandemic. The purpose of this document is to lay a basic framework for ocular oncology care during the current pandemic. However, it is important to recognize the complexity of ocular oncology care and the need for flexibility within any guidelines. Exceptions will occur. Patients will need to be evaluated on a case-by-case basis.

Treatment of ocular and adnexal malignancies is not considered elective. To the extent possible, ocular oncology surgical cases for malignant tumors and some vision-threatening benign tumors should proceed during the current COVID-19 pandemic. It is important to recognize that there is risk for transmission of SARS-CoV-2 during patient care, even by asymptomatic individuals. Therefore risk to patients, physicians and staff, and the community at large must be balanced with the necessity for urgent care. In some cases the balance may shift to delayed care being more appropriate for safety and conservation of limited resources.

Clinicians faced with making these decisions should consider the severity of a negative outcome (death, loss of an eye, loss of vision) together with the probability of such an outcome. In ocular oncology, particularly with regards to retinoblastoma screening, events may be quite rare, but consequences of delayed care devastating. The balance during a pandemic should favor the value of maximizing benefits to the population [1]. The availability of local resources and perceived risk for COVID-19 exposure associated with care given a region's burden of disease may also factor into decision-making. These decisions will not be simple and in some cases, consultation with medical ethics may help with medical decision making.

In addition to the need to reduce risk for virus transmission and preserve personal protective equipment (PPE), for ocular oncologists there may be competing obligations between patient survival, globe salvage, and vision. At this time, there is no recommendation to alter treatment algorithms to favor enucleation over globe salvage; however, patient survival must be prioritized. Informed consent to include COVID-19 risk is recommended. As the pandemic worsens, it is likely that prioritization of only the most urgent and emergent procedures may be necessary. There is precedent for such prioritization of surgical oncology cases by the American College of Surgeons [2]. In these situations, malignant tumors are prioritized over benign tumors, and the higher grade malignancies expected to more immediately lead to death and/or permanent disability are prioritized over less aggressive malignancies. Lower risk and benign case may be amenable to deferred care via telemedicine. Multi-disciplinary discussions for urgent and semi-urgent cases may facilitate institutional case allocation by OR committees. In some cases, ophthalmic pathology resources may also be limited. Telepathology may be an option in these circumstances.



In March 2020, the authors communicated with numerous experts within the US as well as internationally, in both pandemic hotspots and in regions less impacted, to assist in creating this document. Separately, multiple formal surveys were initiated to gauge current COVID-associated practice patterns that reflect variations in practice focus and location. Preliminary results from one such study, assessing practice patterns among North American ocular oncologist members of the Collaborative Ocular Oncology Group, have recently been made available online [3]. Strong pre-existing research networks and subspecialty societies have aided ocular oncologists in the rapid conduct of research—an often overlooked but critically important component of the public health response. The results of these studies will assist in the development of any future guidelines for ocular oncology care during a similar public health emergency.

Four levels of urgency in Ocular Oncology have been established: emergent, urgent, semi-urgent, and non-urgent.

- **Emergent** cases should be performed within 24 hours OR as soon as possible (ASAP) to preserve life and/or sight.
- **Urgent** cases should be performed within the week, considering the availability of resources.
- **Semi-urgent** cases should be performed within 1-2 months, considering the availability of resources. It is important to note that while retinoblastoma care does not fall into an urgent category due to optimal timing for serial interventions, the continuation of retinoblastoma care including examinations under anesthesia is a critical need and should be prioritized.
- **Non-urgent** cases should be deferred for at least 2-3 months or until improved availability of local and national operating room resources

Some surgical cases are believed to be higher risk for transmission of SARS-CoV-2 [4, 5]. In ocular oncology, these higher risk procedures are primarily in the oculoplastics domain and are indicated with an asterisk below. Special precautions, including pre-surgical COVID-19 testing and use of full PPE, should be considered when performing these surgeries in which aerosolization of virus may be more likely to occur. For these procedures, if COVID testing is positive or unavailable and the case cannot be deferred, full PPE including powered air-purifying respirator (PAPR) is strongly recommended.

Emergent

The following procedures are considered emergent:

- Orbital biopsy for malignancy in a child (suspected rhabdomyosarcoma)
- Enucleation for intractable glaucoma/globe perforation from intraocular tumor (retinoblastoma, uveal melanoma)

Urgent

The following procedures are considered urgent:

- Examination under anesthesia for newly suspected retinoblastoma



- Enucleation for retinoblastoma
- Orbital biopsy for processes causing optic neuropathy and vision loss
- *Orbital decompression for impending visual loss (optic neuropathy or corneal perforation) secondary to orbital tumor

Semi-urgent

The following procedures are considered semi-urgent:

Intraocular tumors

- Examination under anesthesia for children with active retinoblastoma undergoing treatment (intravenous chemotherapy, intra-arterial chemotherapy, intravitreal chemotherapy, plaque radiotherapy, cryotherapy, transpupillary thermotherapy, laser photocoagulation) must continue on necessary schedule to control disease, typically every 3-4 weeks).
- Examination under anesthesia for retinoblastoma evaluation for patients with stable disease, who have received treatment within the past 6 months.
- Examination under anesthesia for children at high risk for retinoblastoma due to family history or known *RB1* mutation.
- Intraocular injection of chemotherapy agents for high grade neoplasia
- Biopsy of suspected intraocular malignancy (fine needle aspiration biopsy or other)
- Excision/drainage of iris cyst with pain or glaucoma
- Plaque insertion and removal for posterior uveal melanoma (choroidal and ciliary body)
- Tantalum clip insertion for posterior uveal melanoma (choroidal and ciliary body)
- Enucleation for uveal melanoma

Eyelid tumors

- Biopsy of suspected eyelid malignancies including melanoma, sebaceous carcinoma, Merkel cell carcinoma, or others
- Excision of suspected malignant eyelid tumor or orbital tumor affecting the better eye in a monocular patient (slow-growing eyelid basal cell carcinoma should be performed on a non-urgent basis)
- Excision of suspected malignant eyelid tumor (particularly squamous cell carcinoma) in an immunosuppressed patient
- Repair of eyelid defect after tumor removal

Conjunctival tumors

- Biopsy of suspected conjunctival malignancy including melanoma and squamous cell carcinoma which could not be managed reasonably with outpatient topical chemotherapy
- Biopsy of suspected conjunctival lymphoma (extended delay may be appropriate under certain circumstances)

Orbital tumor

- Biopsy of suspected orbital malignancy (case by case – rapidly growing may need urgent biopsy; slowly growing suspected lymphoma is semi-urgent)
- Biopsy of suspected orbital lymphoma (extended delay may be appropriate under certain circumstances)



- *Exenteration (case by case: rapidly growing may need urgent biopsy; slow growing could be semi-urgent)

Non-urgent

The following procedures are considered non-urgent:

- Biopsy of suspected benign eyelid tumor
- Biopsy of suspected basal cell carcinoma, unless monocular patient
- Biopsy of suspected benign conjunctival tumor
- Biopsy of suspected benign orbital tumor
- Treatment of select iris melanoma with excision or radiation therapy (some may be urgent, especially if there is rapid growth or secondary glaucoma, at physician discretion)
- Excision/drainage of iris cyst without pain or glaucoma

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