

## Recurrence and massive extraocular extension of choroidal malignant melanoma after vitrectomy and endoresection

*Mehdi Modarres, Asgari Rezanejad<sup>1</sup>,  
Khalil Ghasemi Falavarjani*

Vitrectomy and endoresection is an alternative to enucleation for the treatment of large malignant choroidal melanoma. We report a rare case of extensive recurrence of choroidal malignant melanoma with extraocular extension 11 years after surgical endoresection without adjuvant treatment.

**Key words:** Choroidal melanoma, endoresection, vitrectomy

Choroidal malignant melanoma (CMM) is the most common primary intraocular malignancy in adults with an incidence of 4-10 cases per million per year.<sup>[1,2]</sup> Increased understanding of tumor characteristics and advances in techniques and

instruments have led to a rapid progression in the management of uveal melanoma. The main treatment options for CMM are enucleation, brachytherapy, charged-particle radiation, and transpupillary thermotherapy.<sup>[2]</sup>

Tumor resection, either transscleral or endoresection, is a very controversial procedure due to concerns regarding intraocular, extraocular, and systemic tumor dissemination.<sup>[2-6]</sup> Although this procedure has been largely replaced by safer and more predictable treatment modalities, it may be performed in some specific conditions.<sup>[7-9]</sup>

We report a rare case of recurrence and extensive extension of choroidal melanoma 11 years after pars plana vitrectomy and endoresection.

### Case Report

A 52-year-old woman was referred to our clinic with left painful eye since 3 months ago. She had a diagnosis of large choroidal melanoma in the left eye 11 years ago. The tumor was described as being 15 disc diameters in width on the nasal side of the fundus accompanied by serous retinal detachment. Enucleation was suggested according

Department of Ophthalmology, <sup>1</sup>Ophthalmologist, Eye Research Center, Rassoul Akram Hospital, Iran University of Medical Sciences, Tehran, Iran

**Correspondence to:** Dr. Khalil Ghasemi Falavarjani, Eye Research Center, Rassoul Akram hospital, Sattarkhan-Niayesh Street, Tehran - 14455-364, Iran. E-mail: drghasemi@yahoo.com

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**Figure 1:** Slit lamp photography shows extension of tumor to the anterior chamber and from sclerotomy sites (top left). Globe is filled by the tumor in ultrasonography (top right). Magnetic resonance imaging shows extensive orbital involvement (bottom)

to the tumor size, but the patient refused. Consequently, she underwent pars plana vitrectomy, endoresection of the tumor, endolaser photocoagulation, and silicon oil injection. Postoperatively, there was no sign of tumor in the eye and the retina remained attached, but the visual acuity stayed at the hand motion perception level. One year later, she underwent phacoemulsification surgery and silicone oil removal. The patient was examined regularly for 5 years without any sign of tumor recurrence and the retina was attached. The patient was lost to follow-up in the past 5 years.

At the recent referral, the right eye was normal. The visual acuity was no light perception in the left eye. On slit lamp examination, there were diffuse conjunctival injection, severe vascular dilation and tortuosity, and three subconjunctival brown masses over vitrectomy sclerotomy sites [Fig. 1, top left]. There were also diffuse corneal edema and iridocorneal adhesion. Anterior chamber was flat and the tumoral mass was evident in papillary space which filled the whole eye. No other fundus details could be detected.

Ultrasonography revealed diffuse intraocular mass [Fig. 1, top right]. Magnetic resonance imaging revealed intraocular homogenous mass and extraocular involvement with extension to the orbital apex without intracranial invasion [Fig. 1, bottom]. No bone involvement was seen in computed tomography scanning. Systemic evaluation was negative for metastatic disease. The patient was referred for exenteration.

## Discussion

Management of choroidal melanoma depends on several factors including the location and size of the tumor. The preferred treatment for large choroidal melanoma is enucleation.<sup>[10]</sup> However, considering devastating psychological consequences of removing an eye, alternative treatment modalities have been proposed. Few authors have performed transretinal endoresection as an alternative treatment for choroidal melanomas.<sup>[2-9]</sup> Although encouraging results were reported by some authors, the surgery is often complicated by local recurrence, extraocular extension, distant metastasis, and significant secondary ocular complications.<sup>[2-9]</sup> Primary

endoresection may be performed in special cases when radiotherapy is unlikely to conserve visual acuity and when the patient understands the controversial nature of the operation.<sup>[11]</sup> As a secondary procedure, endoresection may be useful after radiotherapy, either to remove apparently active tumor or as a treatment for exudative maculopathy or retinal detachment.<sup>[7,8]</sup>

One of the most important concerns after endoresection surgery is the possibility of recurrence. Local tumor recurrence has been proposed to occur in the globe as a result of incomplete excision; in the orbit, because of inadequate photocoagulation and diathermy to the sclera, and in other parts of the eye, secondary to seeding at the time of the operation.<sup>[4]</sup> Several intra- and postoperative measures have been suggested to minimize the risk of recurrence.<sup>[4]</sup> Collaborative Ocular Melanoma Study showed that scleral invasion was present in 55.7% of eyes in histological examination.<sup>[12]</sup> This has led to the recommendation of adjuvant brachytherapy after endoresection to irradiate any remaining tumor cells.<sup>[2]</sup> Our patient underwent endoresection without adjunctive brachytherapy and presented with extensive intra- and extraocular tumor extensions. The tumor was a large melanoma needed either I-125 brachytherapy or proton beam radiation. An alternative approach is to irradiate the tumor with brachytherapy follow it up with excision to decrease the risk of radiation-induced complications. Also in our patient, tumor recurrence was noted 11 years after primary surgery and the patient was free of recurrence up to 6 years after tumor resection. This emphasizes the importance of long-term follow-up after surgical tumor resection.

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