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Case series

Clinical characteristics of uveal melanoma: a case series from a secondary level hospital

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Summary

Introduction. Uveal melanoma is the most common primary malignant intraocular tumor in adults, characterized by a high risk of haematogenous metastasis, particularly to the liver. The clinical presentation varies considerably, from asymptomatic lesions discovered incidentally to severe visual impairment. Early diagnosis and multidisciplinary management are essential to optimize functional and oncological outcomes. This study presents the clinical characteristics and diagnostictherapeutic management of patients with uveal melanoma treated at a secondarycare hospital.

Case series. Three patients with different clinical presentations of uveal melanoma were evaluated. A 53-year-old man presented for routine presbyopic correction without any visual complaints. Fundus examination revealed serous retinal detachment associated with a pigmented choroidal lesion. B-scan ultrasound confirmed an intraocular tumor, and enucleation was performed after multidisciplinary assessment. Histopathology confirmed choroidal melanoma. A 63-year-old woman presented with floaters in the left eye. Ophthalmic examination identified a pigmented superotemporal choroidal lesion; subsequent diagnostic workup confirmed melanoma. She underwent brachytherapy and maintained good visual acuity without metastases during followup. A 58-year-old man with progressive visual decline had been previously treated for chronic uveitis and cataract. Initial B-scan findings were inconclusive; however, intraoperative suspicion of a ciliary body melanoma during cataract surgery prompted ultrasound biomicroscopy, which confirmed the tumor. Iridocyclectomy was subsequently performed, with a postoperative uncorrected visual acuity of 0.6.

Conclusion. Uveal melanoma can present with diverse and subtle clinical manifestations, underscoring the importance of a detailed fundus examination even in asymptomatic patients. Diagnostic challenges are particularly evident in ciliary body melanoma, where standard ultrasonography may be inconclusive.

Key words: uveal melanoma, choroidal neoplasms, ciliary body, ultrasonography, optical coherence tomography

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Introduction

Uveal melanoma is the most common primary malignant intraocular tumor in adults, arising from melanocytes located in the uveal tract of the eye, which comprises the iris, ciliary body and choroid [1, 3]. It is most often localized in the choroid, while melanomas of the ciliary body and iris are rarer [2]. Although the incidence of uveal melanoma is significantly lower than that of cutaneous melanoma, its clinical importance derives from its high potential for haematogenous metastasis, particularly to the liver [5, 12, 14].

The clinical presentation of uveal melanoma depends on tumor size and location. Smaller tumors often remain asymptomatic and are discovered incidentally during routine fundus examination, whereas advanced lesions may cause decreased visual acuity, photopsia, metamorphopsia, floaters or visual field defects [2, 4]. Ciliary body melanomas present a particular diagnostic challenge because of their hidden anatomical location and often late detection [10, 18].

Diagnosis is based on a detailed ophthalmic examination together with additional diagnostic methods such as ocular ultrasonography (B-scan), optical coherence tomography (OCT), fluorescein angiography and ultrasound biomicroscopy (UBM) [4, 10]. The therapeutic approach depends on tumor size and location, as well as on the patient's general condition, and includes brachytherapy, local tumor resection and enucleation [6, 7, 11].

Given the limited number of case reports from secondarylevel healthcare institutions, this paper aims to present the different clinical presentations of uveal melanoma, diagnostic challenges and therapeutic options through a series of cases from everyday clinical practice.

Case Reports

Case 1

A 53-year-old patient presented for a routine ophthalmological examination for reading vision correction. He denied any subjective symptoms, including visual decline, photopsia or floaters. Fundus examination of the right eye revealed serous retinal detachment in the superior nasal quadrant, associated with a protruding pigmented lesion highly suspicious for choroidal melanoma.

Ocular ultrasonography (B-scan) confirmed the presence of an intraocular tumor measuring 8 mm × 5 mm, characteristic of uveal melanoma. After multidisciplinary board assessment, the decision was made to perform enucleation of the affected eye. Histopathological analysis confirmed the diagnosis of choroidal melanoma. The patient is followed up every six months, with no signs of disease progression to the liver.

Case 2

A 63-year-old female patient presented because of floaters in the left eye. Fundus examination revealed a pigmented protruding lesion localized in the superior temporal quadrant, approximately two optic disc diameters in size.

Further diagnostic workup, including ocular ultrasonography, confirmed the diagnosis of a protruding choroidal melanoma measuring 4 mm × 3 mm. After multidisciplinary board assessment, the patient was referred to brachytherapy. During subsequent follow-up, good visual acuity was preserved, with no signs of local disease progression and no distant metastases verified by abdominal ultrasonography.

Case 3

A 58-year-old patient presented because of a gradual decline in visual acuity in the right eye over a prolonged period. During previous treatment, he had been managed under the diagnoses of chronic uveitis and cataract. Ocular ultrasonography (B-scan) showed no pathological changes.

During cataract surgery, while placing the retractor, an intraoperative lesion highly suspicious of ciliary body melanoma was observed. The surgical procedure was completed, and postoperatively an uncorrected visual acuity of 1.0 was achieved. After surgery, ultrasound biomicroscopy (UBM) clearly demonstrated a ciliary body tumor measuring 4.10 mm × 5.5 mm, following which iridocyclectomy was performed. In the postoperative course, the patient achieved an uncorrected visual acuity of 0.6. He was regularly followed up every six months, with no signs of disease progression in other organs and normal laboratory values.

Discussion

Uveal melanoma is a rare but clinically significant malignancy because of its aggressiveness and pronounced potential for haematogenous metastasis, particularly to the liver [3, 5]. Despite advances in diagnostic and therapeutic methods, overall survival of patients with metastatic disease remains limited, making early tumor detection of crucial importance [5, 8, 12, 14]. The presented cases illustrate the considerable heterogeneity of clinical presentation of uveal melanoma and confirm that the disease may be detected in both completely asymptomatic patients and those with nonspecific ophthalmic complaints.

In the first patient, choroidal melanoma was discovered incidentally during a routine examination. Such findings are not uncommon, given that smaller or peripherally located tumors may remain clinically silent for a long time [2, 4]. The presence of serous retinal detachment represented an important clinical sign that further increased suspicion of malignancy. In this case, enucleation was the optimal therapeutic choice because of tumor size and characteristics. Although current trends favor eyepreserving treatment whenever possible, enucleation still has an important place in the management of advanced intraocular melanomas [6, 11].

The second case presents a patient with relatively mild symptoms (floaters), in whom timely diagnosis allowed more conservative treatment with brachytherapy. Brachytherapy today is a standard treatment option for mediumsized choroidal melanomas, offering good local disease control and the possibility of preserving functional vision [7, 11]. The absence of metastases during followup in this patient underscores the importance of early detection and an adequate therapeutic approach.

The third case is particularly significant because of the diagnostic challenges posed by ciliary body melanomas. These tumors often remain unrecognized because of their anatomical location and can mimic other chronic ophthalmic conditions, including uveitis or complicated cataract [10, 18]. In the presented patient, standard B-scan examination did not indicate the presence of a tumor, whereas a definitive suspicion was raised only intraoperatively. Subsequent ultrasound biomicroscopy (UBM) enabled precise visualization of the ciliary body lesion. This case confirms the importance of UBM diagnostics when anterior segment tumors are suspected, especially when standard methods do not provide sufficient information [10].

B-scan ultrasonography is the basic diagnostic modality for assessing intraocular tumors because of its availability and high sensitivity for detecting protruding lesions [4]. However, for tumors located in the ciliary body or peripheral parts of the uvea, UBM can provide significant additional diagnostic value

[10]. The combination of clinical examination and modern imaging methods enables timely diagnosis and adequate treatment planning [4, 10, 16].

The therapeutic approach to uveal melanoma depends on tumor size and location, as well as on preservation of visual function and the patient's general condition [6]. In recent decades, treatment options that allow eye preservation, including brachytherapy and local surgical procedures, have developed considerably. Nevertheless, enucleation remains an indispensable treatment modality for large tumors, secondary glaucoma, pronounced pain or when eye preservation is not possible [4, 6, 11].

This case series highlights the importance of a detailed ophthalmological examination in everyday clinical practice, even in secondarylevel healthcare institutions. Timely recognition of suspicious lesions and a multidisciplinary approach enable appropriate treatment selection and better functional and oncological outcomes for patients.

Conclusion

Uveal melanoma can have a very diverse clinical presentation and is often asymptomatic. A detailed ophthalmological examination and a high degree of clinical suspicion are crucial for timely diagnosis. Ciliary body melanomas represent a particular diagnostic challenge, for which standard diagnostic methods may be insufficient. Timely diagnostics, appropriate use of additional imaging methods and a multidisciplinary approach enable optimal treatment selection and better functional and oncological outcomes for patients [6, 18–20].

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Kliničke karakteristike melanoma uvee: serija slučajeva iz bolnice sekundarnog nivoa

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Uvod. Uvealni melanom je najčešći primarni maligni intraokularni tumor kod odraslih, karakterisan visokim rizikom od hematogenih metastaza, posebno u jetru. Klinička slika se značajno razlikuje, od asimptomatskih lezija otkrivenih slučajno do teškog oštećenja vida. Rana dijagnoza i multidisciplinarno liječenje su neophodni za optimizaciju funkcionalnih i onkoloških ishoda. Ova studija predstavlja kliničke karakteristike i dijagnostičko-terapeutsko liječenje pacijenata sa uvealnim melanomom liječenih u bolnici sekundarne zdravstvene zaštite.

Prikaz bolesnika. Procijenjena su tri pacijenta sa različitim kliničkim slikama uvealnog melanoma. Muškarac star 53 godine javio se na rutinsku korekciju presbiopije bez vizuelnih tegoba. Pregled fundusa otkrio je serozno odvajanje mrežnjače povezano sa pigmentiranom horoidalnom lezijom. B-sken ultrazvuk potvrdio je intraokularni tumor, a enukleacija je izvršena nakon multidisciplinarne procjene. Histopatologija je potvrdila horoidalni melanom. Žena stara 63 godine javila se zbog „mušica" u lijevom oku. Oftalmološkim pregledom identifikovana je pigmentirana superotemporalna horoidalna lezija, a naknadna dijagnostička obrada potvrdila je melanom. Podvrgnuta je brahiterapiji, održavajući dobru oštrinu vida bez metastaza tokom praćenja. Pedesetosmogodišnji muškarac sa progresivnim opadanjem vida prethodno je liječen od hroničnog uveitisa i katarakte. Početni nalazi B-skeniranja bili su neubjedljivi; međutim, intraoperativna sumnja na melanom cilijarnog tijela tokom operacije katarakte podstakla je ultrazvučnu biomikroskopiju, koja je potvrdila tumor. Naknadno je izvršena iridociklektomija, sa postoperativnom oštrinom vida od 0,6 bez korekcije.

Zaključak. Uvealni melanom može se javiti sa različitim i suptilnim kliničkim manifestacijama, što naglašava važnost detaljnog pregleda fundusa čak i kod asimptomatskih pacijenata. Dijagnostički izazovi su posebno očigledni kod melanoma cilijarnog tijela, gdje standardna ultrasonografija može biti neubjedljiva.

Ključne riječi: melanom uvee, neoplazme horioidee, cilijarno tijelo, ultrasonografija, optička koherentna tomografija