

Color Doppler Flow Imaging of Ocular Tumors

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Aim. To analyze the usefulness of color Doppler flow imaging in the differentiation of benign and malign ocular tumors.

Methods. Blood flow in tumor and ocular blood vessels was assessed by color Doppler flow imaging in 20 patients with malignant melanoma of the uvea and 19 patients with cavernous hemangioma. Blood velocity measurements in orbital vessels in these patients were compared with the same measurements in 20 healthy individuals.

Results. Blood flow inside the tumor tissue was observed in all patients, except in a single case of uveal melanoma. Internal blood flow of intraorbital hemangiomas was slower and their resistance index lower than that of melanomas. Patients with a tumor did not differ from the controls in blood flow velocities in the ophthalmic artery, central retinal artery, and posterior ciliary arteries. Only the patients with uveal melanoma had higher maximal blood flow in central retinal artery and posterior ciliary arteries compared to other patients.

Conclusion. Color Doppler flow imaging of blood flow can be a useful method to assess the vascularization of ophthalmological tumors, and to differentiate uveal melanoma from orbital hemangioma.

Key words: angioma, cavernous; blood flow velocity; Doppler ultrasonography, color; eye neoplasms; hemangioma, cavernous; orbital neoplasms; ultrasonography, Doppler, color; uveal neoplasms