



Office of Technology Management

Intraocular Brachytherapy Device

Technology Reference

CU29

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Field

Choroidal pathology

Key Words

Choroid
brachytherapy

Targeted
brachytherapy

Exudative age-related macular degeneration

License Status

Seeking licensing partners

Patent Status

Patent application filed

Overview

Choroidal pathology is associated with non-exudative and exudative age-related macular degeneration and may cause a severe vision worsening or complete loss. Exudative disease occurs in 10 percent of patients with age-related macular degeneration, but it is responsible for 80 to 90 percent of cases of severe vision loss related to the disease. In existing therapies, radiation therapy for choroidal pathology is accomplished using an external beam radiation or an external brachytherapy device placed on the sclera. The drawback of these therapies is that the retina overlying the choroidal pathology is also irradiated.

Technical Summary

Recognizing the need for a novel treatment of choroidal pathologies, UIC researchers have developed a novel device, which can be inserted into the subretinal space and allow the localized brachytherapy to the underlying retinal pigment epithelium and choroid with minimal radiation to the overlying retina. The new device is inserted through the retinotomy, positioned over the underlying choroidal pathology, and expanded to place the radiation source over the area of the choroids. Thus an expanded shield protects the overlying retina. Variations on this design include a balloon catheter system that could be inflated with a liquid source of radiation or with seeds on one side; and a series of tines with radiation sources on one side that could be expanded into the subretinal space; or a combination of the balloon catheter and the tines systems.

Benefits

- Targeted brachytherapy for choroidal pathologies
- Effectiveness in treatment of choroidal pathologies
- Prevention of scar tissue growth
- Irradiation of selected regions

Areas of Application

- Exudative age-related macular degeneration
- Choroidal angiomas
- Choroidal melanomas
- Retinal angiomas
- Potentially applicable to brain, respiratory system, prostate, gastrointestinal and genitourinary tract, and musculoskeletal system

Stage of Development

- Prototype does not exist.