



Lead Eye Patch (VA Reference No. 11-042)

Novel lead eye shield to reduce radiation exposure to healthcare providers emitted from patients undergoing plaque radiation therapy

Technology

Lead eye shield for patients undergoing plaque radiation therapy

Inventor

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Key Features

- Improved radiation shielding properties
- Increased comfort for the patient
- Cleanable and reusable

Stage of Development

Reduced to practice with prototypes developed

Keywords

Eye patch
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Technology

The Department of Veterans Affairs (VA) has developed a lead eye shield for patients who receive eye plaque radiation therapy. The patch has been formed from a thin layer of lead approximately 1 mm in thickness that is glued to a leather cover on both sides and has been formed to provide a better fit over the patient's face than lead patches currently used.

Opportunity

Approximately 1,500 new cases of choroidal melanoma are diagnosed each year in the United States. The disease leads to tumors that develop in the eye. Choroidal melanoma is the most common primary malignant intraocular tumor and the second most common type of primary malignant melanoma in the body.

Methods of treatment of choroidal melanoma include eye plaque radiation therapy. This procedure entails surgically implanting a number of radioactive seeds into the eye to combat the tumors. Treatments, at the appropriate dose rates and in the proper physical forms, are intended to eliminate tumor cell growth without damage to normal tissue. The radioactive seeds implanted continue to emit radiation after implantation, so a blocking means of some kind is needed to shield healthcare providers from the radiation.

Competitive Advantage

The developed lead eye shield conforms well to the patient's facial anatomy and regions with poor contact, which reduces localized radiation dose rates. In addition, the developed lead eye shield weighs approximately three ounces and the soft leather, which is in direct contact with the patient (lead has no direct contact with the patient's skin) leads to more comfort for the patient. Furthermore, the eye shield is cleanable, reusable, and accommodates post operational bandages. Overall the developed eye shield improves radiation shielding properties and reduces radiation exposure to healthcare providers.

Status

The Department of Veterans Affairs is looking for a partner for further development and commercialization of this technology through a license and the VA inventors are available to collaborate with interested companies through a Cooperative Research and Development Agreement (CRADA).