METHOD FOR THE MEASUREMENT OF INTRAOCULAR PRESSURE

Ref-No: TA-PVA21191

BACKGROUND

An elevated intraocular pressure presents the main risk factor as well as the most common cause for the development of glaucoma, an ocular disorder relating to different causes, which results in a loss of nerve fibers. In consequence, this may lead to severe damage in the affected eye ranging from characteristic visual field loss to total blindness.

PROBLEM

Established medical procedures such as Impression tonometrie (Schiötz) meet the requirements for measurement accuracy. However, tonometric procedures are associated with a direct contact of the cornea and may only be performed by ophthalmologists as a local anesthetic is required. In addition, these procedures carry the risk of infection and related studies indicate on unreliable results.

SOLUTION

The present invention describes a measuring device that allows for the accurate determination of intraocular pressure by attaching a measuring body to the closed eyelid. The measuring principle is based on the subjective intraocular pressure estimation by the palpating finger and will be implemented in an objective measuring method by the device described herein.

The existing development is based on an approximation of the contour of the indented eye which flattens the enveloping tissue and simultaneously adapts to the contour of the eye’s surface. In the broadest sense it is as an adaptation of covering eyelid tissue to an expanded surface of the eye. The device basically consists of two pressure units made from silicone, which are independently and resiliently mounted from another. The pressure of the first membrane is applied via a structurally designed spring and serves to smooth the upper eyelid and the indirect fixation of the eyeball. The pressure of the second membrane is applied via two springs and is continuously increased towards measurement point when no further flattening of the second membrane is visible. Consequently, the pressure characteristics of the eye are transferred from the first membrane to the second membrane. The flattening is monitored by an LED light reflex and the...

PVA Mecklenburg-Vorpommern AG

Christian Tholen
+49 381 497474-38
c.tholen@pva-mv.de
www.pva-mv.de

DEVELOPMENT STATUS

Feasibility

PATENT SITUATION

DE 10 2014 105 979 granted
WO 00 2015 165 728 pending

CATEGORIES

Diagnostics //Medical devices
maximum value can thus be easily determined. The present invention is of particular advantage for measurements of intraocular pressure in patients with an injured or diseased cornea.

ADVANTAGES

- Transpalpebral, objective determination of intraocular pressure
- Minimal risk of infection
- No need for anaesthesia

SCOPE OF APPLICATION

- Sensor technology
- Medicine
- Medical technology
- Ophthalmology

SERVICE

- Disposition
- Concession agreement
- Development cooperation