Manual Cataract Division Instrument

Published date: Jan. 3, 2018

Technology description

INNOVATION
Researchers at the University of Missouri-Columbia have developed a new surgical tool useful for manual small incision cataract surgery (MSICS). Unlike alternate tools, this improved surgical tool requires only a single, small incision, and enables the surgeon to fragment and remove cataracts more simply and effectively, while minimizing trauma to the eye. Ophthalmologists can use this device to improve MSICS patient outcomes when phacoemulsification is not an option or when it has failed. Additionally this instrument can be used in cases where MSICS is the primary method of care (e.g. developing countries and veterinary applications). This instrument offers clear improvements over standard MCICS care, and fits seamlessly into the standard MCICS workflow.
BACKGROUND
Cataract removal is the most common human surgical procedure performed in the world, with an estimated 30 million procedures expected to be performed annually by 2020. The current standard of care in developed countries utilizes ultrasonic vibrations to fracture a cataract and aspirate the fragments through a small incision in the eye, a procedure called phacoemulsification. However, phacoemulsification is not always a safe option, especially when cataracts have become very dense. In these cases, surgeons must manually divide and remove cataract fragments through a small incision in the eye, a process known as MSICS. As MSICS is as safe and is more affordable than phacoemulsification, developing countries and veterinary hospitals tend to rely on it as their primary method of cataract removal. The main drawback with MSICS is the increased rate of post-surgical astigmatism due to the requirement for larger incisions. Our novel surgical instrument enables improvements in MSICS through ease of use, reduced incision size requirements, and improved design to reduce unnecessary forces applied to the eye during lens manipulation.

Application area

- Manual small incision cataract surgery
- Human and veterinary procedures
- Inexpensive device for developing countries

Advantages

• Reduced post-surgical complications
• Fragment and remove cataract fragments during surgical procedures
• Minimal incision required for use
• Use with one hand

Institution

University of Missouri, Columbia

Inventors

John Jarstad
Josh Lewis
Brandon Thornberry
Katie Wehmeyer

联系我们

叶先生

电 话：021-65679356
手 机：13414935137
邮 箱：yeyingsheng@zf-ym.com