A tool designated for cutting through dura during brain surgery

Duke LICENSING & VENTURES

Unmet Need

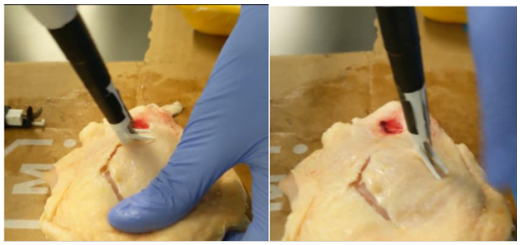
Dura mater is the protective layer of the membrane surrounding the brain and spinal cord. For procedures requiring access to the brain, surgeons must create an opening in the dura. Due to the dura's thickness and proximity to the cerebral cortex, it can be difficult to safely separate the dura from the surface of the brain while opening it. This creates an avoidable risk for brain injury each time the dura is opened. There are limited tools designed specifically for cutting the dura, and they are not widely adapted, potentially due to suboptimal design. Currently surgeons rely on a variety of tools not designed specifically for cutting the dura, leading to a lack of appropriate safeguards against accidental brain injury. There is a need for improved tools designed expressly for opening the dura that will facilitate operation while minimizing risk of injury.

Technology

Duke inventors have reported a tool designated for cutting through the dura. This is intended to reduce unnecessary lacerative risks to the brain during surgery while applying cleaner cuts to the membrane to allow visibility while operating and cleaner repair when suturing the dura. The single-use, disposable tool is held similarly to a pencil. Tension is created in the dura matter by the device to permit countertension that facilitates cutting. The dura is then sliced with only 2 mm of exposed motorized cutting blade. A working prototype has been developed and tested on *ex vivo* animal skin.

Advantages

- Cuts dura without exposing the brain to accidental damage like current methods
- Avoids tissue bunching at the blade suffered by other dural cutting tools
- Offers a minimally exposed motorized blade that can reduce unintentional cuts



Duke File (IDF)

T-006886

Inventor(s)

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Links

- A project from Duke FastTrack

College

School of Medicine (SOM)

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