Surgical Apparatus for Cutting Tissue

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Technology description

Current State of the Art:
There are several surgical procedures that require the cutting and re-positioning of a membrane in order to access the underlying tissues. These include but are not limited to the dura mater of the brain and spinal cord. To perform these procedures surgeons need surgical grade instruments that allow them to cut a slit in the membrane, hold the membrane up and support and separate the membrane from the underlying tissue, as the surgeon re-positions and continues to cut a sufficient area of the membrane.
Currently available microsurgical tools for this procedure include the specialized arachinoid blades, (Apex Medical Inc., Mizuho) with microsurgical scissors and jewelers forceps as offered through a wide variety of medical device companies.
Disadvantages with the Current Art:
It requires an incredible amount of skill to perform this procedure safely. With standard scissors and forceps, the surgeon’ s skill and both hands are essential for the procedure while assistance may be required from yet another person. While the surgeon is maneuvering the scissors and forceps and supporting the membrane while cutting, damage to the underlying tissue as well as to the dura mater itself can occur. This damage increases the time of healing and recovery for the patient and often can add a level of complication to the surgery with damage or shearing of the dura mater.
Dr. Cargill Alleyn, a Neurosurgeon here at GHSU, has designed a single instrument that can be used to perform the delicate procedures described above. The design for this invention comprises a cutting element in communication with support and separation elements that provide support and stability while the instrument cuts through membranes.

Advantages

·single instrument with support, separation and cutting
·support structure minimizes expended effort
·increases the safety of the procedure
·reduces chance of traumatic injury to the dura mater or underlying tissue

Institution

Augusta University

Inventors

Cargill Alleyne
Professor/Chair
Neurosurgery