Anorectal Tonometer for Neurological Testing

**Invention:**

Cauda Equina Syndrome (CES) occurs when the Cauda Equina nerve fibers become irritated by pressure or inflammation. The treatment for Cauda Equina is immediate surgical intervention. The absence or reduction of rectal tone is used in the diagnosis of several neurological conditions including CES. This invention describes an anorectal tonometer, intended to measure rectal tone in adults and newborns caused by CES.

**Patent Landscape:**

The proposed device can be used in emergency rooms for assessing spinal cord injuries, as well as intra-operatively during spinal cord surgeries to monitor neural control of the sphincter.

**Applications:**

As CES is not the only thing that can affect the spinal cord, this invention can also be used for a variety of other conditions. Any spinal condition that affects the involuntary nervous system could affect rectal tone and it is therefore widely applicable. In addition, rectal tone is often changed in pregnancies and the return of normal function can be studied and monitored to better help women recover from child birth. Some other applications include:

- Emergency assessment
- Routine diagnostic tool
- Research database
- Intra-operative monitor
- Childbirth recovery

**Competing Technologies**

- Rectal silicon pressure sensor
- Digital (finger) rectal examination
- MRI examination

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Advantages:

- Allows quantitative measurement of rectal tone
- This innovative device frees up the time of radiologist and neurosurgeons as nurses could easily perform examinations.
- Designed to keep doctor away from anus, in order to work in other areas
- The sensor is very small (comparable or smaller than the human finger)

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