Symphonic scalpel - Nerve detecting laparoscopic clamp (BioDesign) (Hadasit)

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Need:

Trauma inflicted by surgical intervention could result in nerve damage and devastating impact on patients' quality of life. Symptoms include sensory and motor dysfunction resulting in complete paralysis, intractable neuropathic and chronic pain.
Nerves are fragile and can be damaged by pressure, stretching, or cutting. Causes of nerve damage during surgery include the scalpel, bruises, inflammation of tissue, forces caused by patient positioning and prolonged contact with rigid surgical equipment.

NERVE-DAMAGE INCIDENCE 4M cases per year (globally)

- 234M major surgical procedures per year
- 1.6M suffer permanent nerve damage
- 2.4M suffer temporary nerve damage for up to one year post surgery
- Pelvic nerve surgery causes 20-40% urinary / sexual dysfunction

Innovation:

Bipolar myelin-detecting clamp based on real-time spectroscopy. Nerves are wrapped in Myelin: a fatty isolative substance detectable with tailored spectral analysis. We add this feature to current laparoscopic clamps to achieve drastically nerve-sparing operations.

Indication / Application:

Urology / GYN / General surgery

Competitive advantages:

- No electric stimulation of the nerve is needed
- Minimal change in surgical technique

Development stage:

Proof of concept achieved in ex vivo model

This project is part of our BioDesign program.

Learn more about the program: http://www.biodesignisrael.com/

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