Safer, Pulsation-Canceling Delivery System for Spinal Cord Injection

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BACKGROUND

Dorso-ventral spinal cord pulsation often increases the risk of spinal injections because it leads to a likelihood of local tissue injury and bleeding. Further, delivery of agents into a pulsating spinal cord may result in less than optimal quantities of dug being delivered. Therefore, there is an unmet need for a safer and more efficient method to perform spinal injections.

TECHNOLOGY DESCRIPTION

UCSD researchers have developed a spinal injection device that utilizes a spring effect that syncs with the pulsation of the spinal cord, thereby reducing the risk of injury and ensures complete delivery of agents to the target site.

APPLICATIONS

This technology can be applied to spinal cord injection of various kinds, such as injection of cells or therapeutic agents. The device itself can be easily integrated into any existing manipulator and be utilized immediately for injections.

STATE OF DEVELOPMENT

A functional prototype has been developed and successfully tested in minipigs (teacup pig).

RELATED MATERIALS

- Riley JP, Raore B, Taub JS, Federici T, Boulis NM. “Platform and cannula design improvements for spinal cord therapeutics delivery”. Neurosurgery. 2011 Dec;69(2 Suppl Operative):ons147-54; discussion ons155. - 12/01/2011

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OTHER INFORMATION

KEYWORDS

spinal cord, injection, pulsation, injury prevention

CATEGORIZED AS

- **Medical**
  - Delivery Systems
  - Devices

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