

BACKGROUND

Arthrodesis, or spinal fusion, involves fusion of two or more vertebrae. This procedure is indicated to relieve instabilities, neurological injuries, scoliosis or fractures. During spinal fusion operations, solid and rigid implants are used to stabilize the segment to be fused. The high stiffness of these implants, on the other hand, causes the degeneration of the adjacent segments in nearly 30% of the patients.

Commercially available dynamic stabilization systems are generally complex, bulky and subject to recurring mechanical breakdowns.

TECHNOLOGY

The proposed technology is a monolithic implant manufactured using additive technology. It is intended to create a gradual transition from the (instrumented) fusion zone to the intact (non-instrumented) segment. This implant reduces the stress concentrations at the instrumentation ends and thus mitigates the risk of fracture, implant removal and malformations in the adjacent segments of the instrumentation.

The new implant allows movements which greatly simplifies the device from a mechanical point of view. According to ASTM F1717 testing, the prototype is about 10-fold more flexible compared to the standard of care (Figure 1).

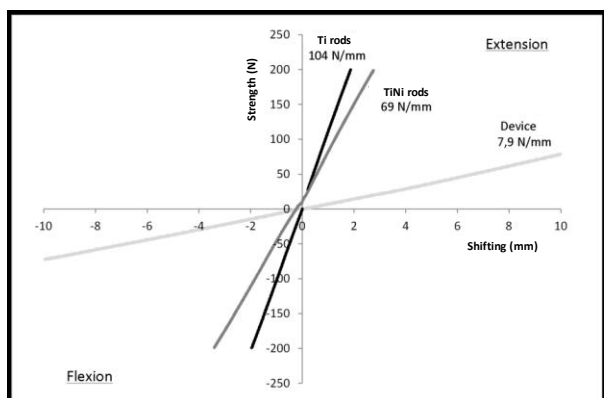


Figure 1: Mechanical behavior of the proposed implant (device) compared to Ti rods and TiNi rods, according to F1717 testing.

COMPETITIVE ADVANTAGES

- High reliability related to monolithic conception.
- Customization related to patient anatomy and required rigidity.
- Compatibility with existing fixation systems.
- Allows a transition between the fusion zone and the intact zone.
- Reduce the risk of wear and adjacent fractures
- Allows natural alignment of the vertebrae, reducing the risk of breakage of instruments or tearing of attachment sites.

APPLICATIONS

Spinal surgery

TECHNOLOGY DEVELOPMENTAL STAGE

Prototype

INTELLECTUAL PROPERTY STATUS

IP is a combination of secret and know-how.

BUSINESS OPPORTUNITY

Looking for co-development partners

FOR INFORMATION PLEASE CONTACT:

Christine Martens, M. Sc.
Director – Business Development
Phone: 514-840-1226 #3008
Cell: 514-434-8033
E-mail: cmartens@aligo.ca