Guidewire Torque Device for Interventional Medical Procedures

VANDERBILT UNIVERSITY
CTTC Center for Technology Transfer & Commercialization

Summary

Vanderbilt University researchers have created a torque device that allows surgeons to apply better torque and grip to guide wires used in interventional medical procedures.

Addressed Need

Guidewire manipulation is essential in interventional medical procedures such as angioplasty, stenting, pacemaker insertion, electrophysiology studies, atherectomy, thrombolysis, and endourology and therapeutic endoscopy of the gastrointestinal system. In these procedures, medical professionals use a device to apply torque to the guidewire while advancing it to the desired point in the patient's anatomy. Most current torque devices are end-loading and require the use of both hands to reposition them as the wire advances in the body of the patient, a process that may be repeated many times during the placement of the guidewire. This lengthens the amount of time and increases the degree of difficulty necessary to complete the guidewire placement procedure. These devices can require specialized training to facilitate proper usage and can still result in inadvertent misuse of the device during the course of the procedure.

Technology Description

The torque device designed by the Vanderbilt team can be loaded onto the side of the guidewire. It allows for one-handed operability, improved gripping, and it avoids improper usage and/or damage to the guidewire. It works with all currently used medical wire sizes without requiring any adjustments. The device passively grips the guidewire and eliminates the use of a vigorous twisting motion to apply grip to the wire. These features allow the operator to easily apply torque to the guidewire and guide it to the desired point in the patient's anatomy. In addition, the Vanderbilt torque device can be easily transferred from one guidewire to an other, as is often required during a procedure.

Technology Features

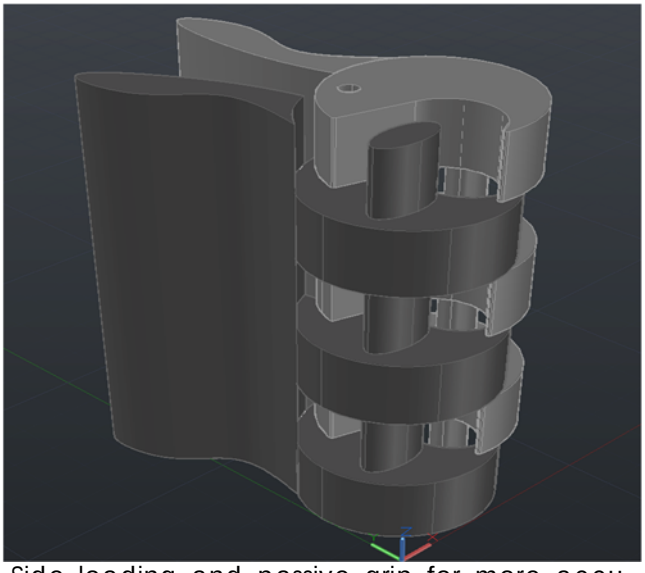
- Side-loading
- Passive grip
- Single-hand operability
- Spring loaded force (used to grip)
- Additional gripping force allowed
- Elimination of screwing/twisting motion for grip

Technology Status

Several prototypes have been constructed and tested.

Intellectual Property Status

A patent application has been filed.



Side loading and passive grip for more accurate torque and ease of use during procedures.

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