Rib Fracture Fixation Device and Methods for Use Thereof

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Technology description

Rib fracture repair system

Background

Rib fractures are one of the most common injuries associated with traumatic injury, with symptoms as dire as severe pain, difficulty breathing, long recovery periods, and high morbidity and mortality in the most severe complex fractures. Recent clinical trials have shown that surgical fixation of ribs improves patient outcomes, however, the devices to fixate these ribs are still in early development and relatively invasive and sometimes lengthy procedures. Currently, a surgeon uses a mixture of CT and palpation of the ribs to determine fractures and then creates a large access hole to address these fractures.

Technology Overview

This new technology serves as a catheter-based delivery system for components used to fix the ribs. A catheter-based access to the medullary canal of the rib is considerably less invasive while allowing better access to rib fractures under the scapula. The new invention allows the surgeon to create a catheter access hole and then insert a self-expanding member under fluoroscopy to address the fractures. In the case of rib fractures beneath the scapula, this technology has considerable advantage, as the current procedure dictates lifting up the scapula to access the sites.

Opportunity

Sanford Health is looking for a development partner in orthopedic surgery. The ideal partner will have the ability to manufacture medical devices and will have access to the capital to do so. Together there is an opportunity to create a minimally invasive procedure which may make rib fixation available to more trauma patients.

Application area

Applications

- Rib fixation

Advantages

- Allows the surgeon to relatively non-invasively address rib fractures.
- Access sites the size of catheters could improve procedure times and reduce recovery time.

• Fractures under scapula could be repaired without lifting the scapula.

Institution

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