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Central airway stent removal device

A medical device for manipulation and removal of airway stents.

IP Status: US Patent Pending; **Application #:** 16/293,247

Applications

- Tracheo-bronchial stenting
- interventional gastroenterology

Key Benefits & Differentiators

- Device specifically developed for airway stent manipulation and removal
- Device helps removal without damaging surrounding tissues
- Reduces surgery time and improves patient outcome

Overview - Central airway stent removal device

Central Airway stenting (tracheobronchial prostheses) is a viable and important option for the treatment of central airway stenosis arising from complication in lung transplant and lung cancer. However, stent placement can result in complications such as stent migration, ingrown tissue around stent, infection, necrosis, all of which mandate the removal of the stent. Currently, there is no specific tool designed for removing central airway stents. Interventional pulmonologists end up using standard forceps that do not work well with the unique mechanical and geometrical properties of stents. This in turn, results in longer surgery time to capture or destroy the stent in order to remove it. Sometimes the surgery is aborted and the imperfect stent is left implanted.

Researchers at the University of Minnesota have developed a device for placement, repositioning or removal of central airway (i.e., trachea and main bronchi) stents using either a flexible or rigid bronchoscopy. This device uses a stent gripping mechanism with the appropriate range of force required to detach a stent from tracheal/bronchial tissue and to transport across tracheal/bronchial cavity to remove it. This new device was designed to withstand the mechanical and geometrical properties of airway stents to allow for their removal. By having a dedicated tool for removal and simplifying the removal process, the ability to induce less procedural trauma is greatly improved.

Phase of Development

TRL: 5
Researchers have developed a working prototype.

Desired Partnerships

This technology is now available for:

- License
- Sponsored research
- Co-development

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Technology ID
20180250

Category
Engineering & Physical Sciences/Design Specifications
Life Sciences/Medical Devices

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