Body Cavity Evacuator

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Brief Description

Device for draining highly viscous fluids from the pleural space

Problem

The pleural space lies between the two layers of the pleura, the thin covering that protects and cushions the lungs. A pleural effusion is a buildup of fluid in the pleural space. One kind of pleural effusion is pleural empyema. Pleural empyema is a collection of pus in the pleural cavity caused by microorganisms, usually bacteria. Often pleural empyema happens in the context of pneumonia, injury, or chest surgery with ~ 32,000 cases per year the United States. Empyema is associated with elevated morbidity and mortality, around 20% to 30% of patients affected will either die or required further surgery in the first year after developing empyema. Early intervention is crucial in the management of empyema removing the pus from the pleural space in order to control or eliminate the infection.

Existing methods of removing fluid from body cavities are ineffective or, in the case of pleural empyema, overly cumbersome due to the viscous nature of the pus, requiring the simultaneous use of two separated entry points into the body. Accordingly, improved systems and methods for draining highly viscous fluids from the pleural space are needed.

Solution

In response, the inventors developed the Body Cavity Evacuator (BCE) a device that effectively perfuse and removes viscous fluid from a body cavity using **only one entry point** into the cavity.

Technology

Drs. Shersher and Abouzgheib identified a need for a more effective and less invasive way to drain body cavities, particularly the pleural space during surgery. They designed a system which simultaneously maximizes perfusion and drainage using a novel opposing pigtail catheter design in which one catheter, with an independent lumen, perfuse and the other drains. The catheters are in a single tear-away sheath allowing for a single point of entry and ease of use.

Advantages

- Single point of entry for simultaneous combined perfusion/drainage system.
- Opposed pigtail catheter design allows for maximal coverage of body cavity.

Stage of Development

Design stage

Partnerships

Co-Development, Licensing

Intellectual Property

US Utility Patent Application
European Patent Application

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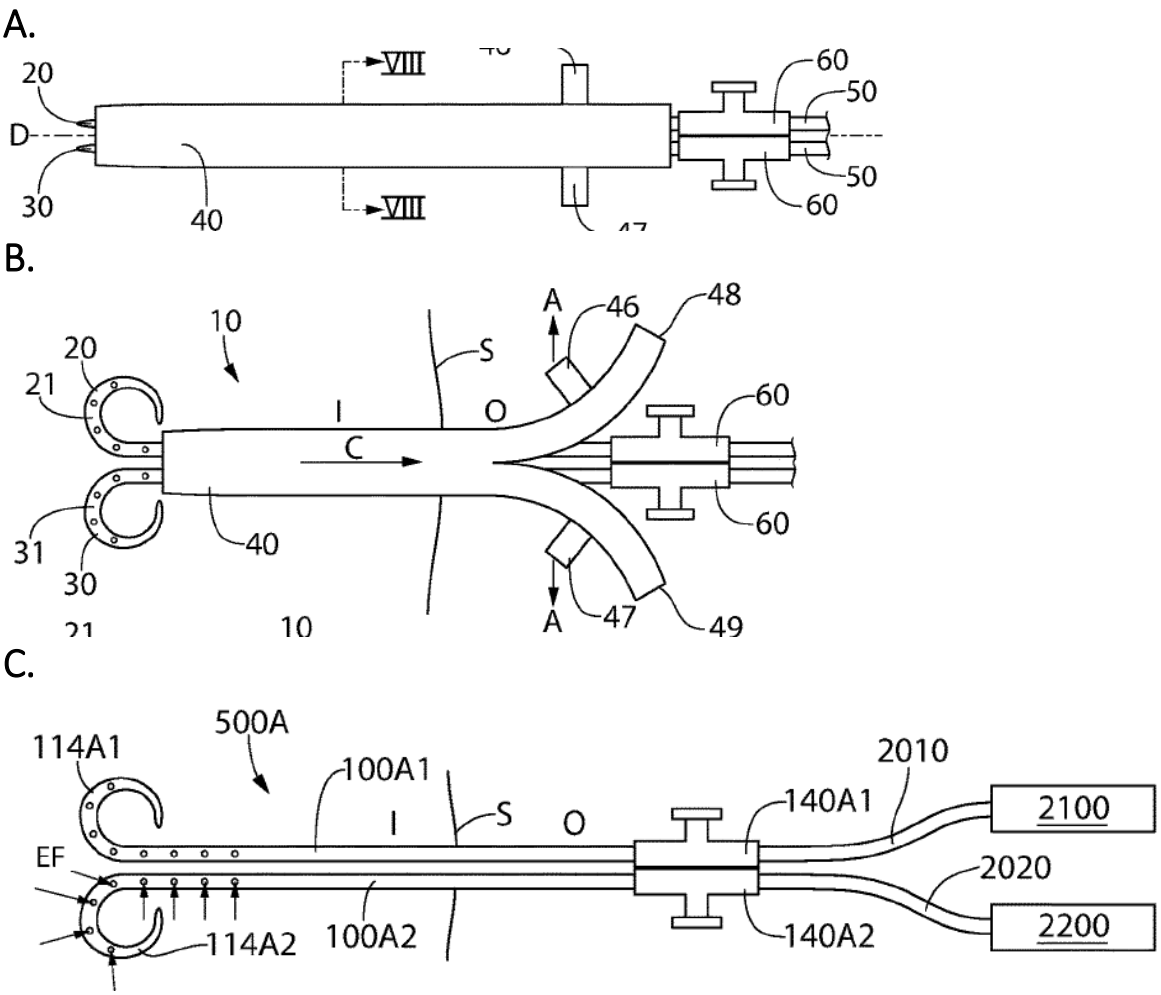
Figure:



Side view of the Body Cavity Evacuator (BCE) device with spatially opposed pigtail catheters, each with separate lumen, **A.** encapsulated within a tear-away sheath, **B.** in the process of having the sheath removed and catheter being deployed and **C.** catheter fully deployed. The separate lumen of the pigtail catheters allow for independent and simultaneous perfusion and suction from the body cavity.
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