Mediastinal Needle Biopsy

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Technology description

UT Health San Antonio researchers have developed a novel cutting biopsy needle designed to cut and remove intact tissue samples suspected of being cancerous or diseased within a patient through an endoscope or other instrument. This needle will collect cytology and histology samples from the mediastinum with more precision, reliability, and ease-of-use than the currently predominant needle on the market.

Background:

Biopsy samples are currently obtained through invasive surgical procedures or less invasive percutaneous biopsies performed with a needle like instrument. There are areas of the patient which are not easily sampled with either of the aforementioned methods and require a guiding instrument such as an endoscope, conduit, or other medical device. The needle can be inserted repeatedly to obtain the sample in the needle’ s hollow center.

The current invention is an improvement on the basic mediastinal needle model in that it includes an actuator for movement/control, a sample needle with a hollow center plus vacuum for collection of the tissue, and a thread-ably adjustable sheath to separate the needle and cutter from the tissue when desired. Additionally, the needle will allow some flexibility for curved movement and better placement of the cutter within the patient.

Application area

This invention has the potential to increase the use of mediastinal needle biopsies and to replace the current needle on the market because of the increased reliability in sampling and ease-of-use. Existing needle biopsy on the market is difficult to use, unreliable in obtaining tissues (obtains tissue in 50% of patient procedures), and inaccurate in obtaining the correct diagnostic material (obtains diagnostic material in 25-30% of patients).

Advantages

Flexible true cut system in the tip

Easier to use by endoscopist

More reliable in obtaining tissue
Increases diagnostic yield from currently available needles

Institution

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Inventors

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