Innovative imaging and surgery treats lymph condition in adults
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Researchers who developed a safe and effective procedure to remove thick clogs in children's airways are now reporting similar success in adult patients. In this rare condition, called plastic bronchitis, patients develop thick, caulk-like casts that form in the branching paths of their airways.

The researchers developed new imaging tools and a minimally invasive catheterization technique to treat a form of plastic bronchitis caused when abnormally circulating lymphatic fluid dries into solid casts. "In some cases, the cause of this condition is unknown, but this new study suggests that most adult patients with plastic bronchitis have abnormal pulmonary flow of lymphatic fluid that we can safely treat," said study leader Maxim G. Itkin, MD, a radiologist at Children's Hospital of Philadelphia (CHOP) and the Perelman School of Medicine at the University of Pennsylvania.

Itkin and his co-author Yoav Dori, MD, a pediatric cardiologist at CHOP and Penn Medicine, co-lead a specialized team at the Center for Lymphatic Imaging and Interventions jointly operated by CHOP and Penn. They collaborated on the current study with pulmonologist Francis X. McCormack, MD, of the University of Cincinnati, in a paper in the October 2016 issue of the Annals of the American Thoracic Society.

Earlier this year, Itkin and Dori reported a retrospective case study of 18 children who had plastic bronchitis as a complication of palliative surgery for single-ventricle heart disease. While rare, plastic bronchitis can cause life-threatening respiratory distress in children. In adults, the condition may go undiagnosed for years in patients who may initially be diagnosed with asthma or chronic cough. Plastic bronchitis has a long medical pedigree—the Greek physician Galen described a form of it in the second century.

"This was a small study, and a first report of this treatment in adults with lymphatic plastic bronchitis," said Dori. "Longer follow-up will be needed to confirm the long-term risks and benefits of this procedure."

The Center for Lymphatic Imaging and Intervention is one of CHOP's inaugural Frontier Programs. Frontier Programs embody the connection between research breakthroughs and extraordinary clinical care, and are a novel way to bring research more quickly to the bedside.


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