



Cystic Fibrosis Research News

Title:

Tracheal diverticula in cystic fibrosis – a potentially important underreported finding on chest CT

Authors:

Gabriela Gayer, MD¹, Ifat Sarouk, MD², Nayrouz Kanaany, MD¹, Ori Efrati, MD²

Affiliations:

¹Department of Diagnostic Imaging

²Department of Pulmonology

Sheba Medical Center, Ramat-Gan, Sackler Faculty of Medicine, Tel Aviv University, Israel

What was your research question?

We aimed to assess how common it is to find pouches developing from the sides of the windpipe (tracheal diverticula) in people with cystic fibrosis (CF) as seen on computerized tomography (CT) of the chest.

Why is this important?

Radiologists who interpret CT studies of the chest usually focus on what they can see in the lower airways and lungs. Study reports often do not mention any pouches on the wall of the windpipe and previously these have not been stated to be more common in people with CF. However, these pouches are likely to be a reservoir for infections and might therefore serve as source for continued risk of infection.

What did you do?

We assessed all available (a total of 92) chest CT scans of 175 CF patients treated in the division of pulmonary medicine in our medical center between 2001 and 2013. We recorded the presence, number, size and location of tracheal diverticula. In addition, we scored other findings in the lungs, such as bronchiectasis (a long-term condition where the airways of the lungs become abnormally widened, leading to a build-up of excess mucus that can make the lungs more vulnerable to infection) and mucus plugging in terms of severity and extent. We reviewed the patients' medical files and recorded how often they had experienced a flare up of respiratory symptoms, how many incidents of coughing up blood there had been, how often they had been colonised with particular bugs and the results of their pulmonary function tests over the last 5 years.

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cfresearchnews@gmail.com

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What did you find?

Twenty six (28%) of these 92 patients had one or more tracheal diverticula. The pouches ranged in size from 2 mm to 32 mm and all of them located in the right aspect of trachea. Patients with diverticula had worse pulmonary function tests at the first measurement and these values declined more severely in this group of patients over a 4-year period. We found no great difference in how often symptoms flared up, how often patients coughed up blood and bacterial colonization between patients with and without these pouches.

What does this mean and reasons for caution?

Tracheal diverticula appear to be much more common among patients with CF (28% in our study, compared to 2-8% in the general population).

The infectious contents within the diverticula may have a considerable impact on patients with CF, particularly in patients who undergo lung transplant. This study is the first to document the higher frequency of tracheal diverticula among CF patients but it was based in just one single center. It is worth conducting more studies to investigate the effects of these pouches.

What's next?

Further studies should be conducted to investigate whether patients with tracheal diverticula are at a greater risk for recurrent infections in the lungs and lower airways compared to those without diverticula. Of special interest is the concern whether these diverticula may have a harmful effect on patients undergoing lung transplant.

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