

Study: Radio waves erase pre-cancer cells in esophagus

May 28 2009, By Sarah Avery

Heat generated by radio waves erases most pre-cancerous cells associated with chronic acid reflux, providing an alternative to surgery or the current wait-and-see approach.

The ablation technology works on the same principle as freezing warts off skin, but uses high frequency [radio waves](#) shot through a catheter to target [abnormal cells](#) in the [esophagus](#).

In a study published Thursday in The [New England Journal of Medicine](#), lead authors at the University of North Carolina-Chapel Hill report that the technology completely wiped out pre-cancerous cells in 90.5 percent of patients with Barrett's esophagus who underwent the procedure. Only 1.2 percent of patients went on to develop cancer a year later.

Among patients who got a sham procedure, 9.3 percent developed cancer.

"It's a promising therapy and provides a new option for patients who faced treatments that weren't that attractive," said Dr. Nicholas Shaheen, lead author and director of UNC-CH's Center for Esophageal Diseases and Swallowing.

An accompanying editorial in the journal says the study, which involved 127 patients at 19 medical centers, "challenges the current paradigm for the management of Barrett's esophagus."

The condition is diagnosed when the normal lining of the swallowing tube becomes inflamed after prolonged assaults from leaked [stomach acid](#), and the tube develops characteristics of stomach and intestinal linings.

Over time, these abnormal cells can bloom into cancer. People with Barrett's esophagus have a 30 percent to 60 percent increased risk of developing esophageal cancer. And that's an increasingly common diagnosis.

In the past 40 years, for reasons doctors don't fully understand, the incidence of esophageal cancer has skyrocketed by 500 percent.

Acid-reducing drugs work to curb the source of inflammation, but once Barrett's esophagus develops, doctors have had few therapies that target the pre-cancerous cells. Instead, most patients are monitored with regular scopes. If cancer develops, patients often must have their esophagus removed in a drastic surgery that can cost upwards of \$50,000.

"You tie the stump of the esophagus to the stomach, which is pulled up in chest," Shaheen said. "It can be a hard way for someone to live."

By contrast, blasting away the offending cells using ablation technology costs less than \$5,000, although the procedure may need to be repeated. And while the idea is not new -- other technologies, including freezing, are being tried -- the radio-frequency technology is furthest along in studies, Shaheen said.

Paul Bailey, 61, of Cary, N.C., said he had the procedure in 2007 after his Barrett's esophagus progressed and his local doctor referred him to UNC Hospitals. Bailey said he had suffered from acid reflux for years, and was worried about the abnormal cells growing unchallenged.

He said the procedure caused immediate, uncomfortable burning in his chest. The pain subsided after a couple of days. Most of the pre-cancerous cells were wiped out in the first blast, but he had two more procedures to eliminate 98 percent of the abnormal growth. He said he has had no recurrence.

"Such a relatively simple procedure to eliminate a potentially catastrophic problem to me is amazing," Bailey said. "It was like a weight getting lifted off your shoulders."

ABOUT THE STUDY

127 patients with Barrett's esophagus were enrolled at 19 sites in the United States, including UNC-Chapel Hill.

Patients were randomly assigned to have abnormal cells burned off with a radio-frequency intervention or to get a sham procedure.

Complete eradication of abnormal cells occurred in 90.5 percent of patients who got the intervention.

Disease progressed in 3.6 percent of patients who got the intervention, and 16.3 percent of those who did not.

Cancer developed in 1.2 percent of patient getting treatment, and 9.3 percent of those getting placebo.

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