

Bioengineering feasible for airway reconstruction

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(HealthDay)—Airway bioengineering appears feasible for tracheal and

bronchial reconstruction, according to a study published online May 20 in the *Journal of the American Medical Association* to coincide with the American Thoracic Society's 2018 International Conference, held from May 18 to 23 in San Diego.

Emmanuel Martinod, M.D., Ph.D., from the Hôpitaux Universitaires Paris Seine-Saint Denis, and colleagues recruited 20 patients with end-stage tracheal lesions or with proximal lung tumors requiring a pneumonectomy. Standard surgical techniques were used to perform radical resection of the lesions; airway reconstruction was performed after resection using a human cryopreserved aortic allograft. A custom made stent was inserted into the allograft to prevent airway collapse.

Thirteen patients underwent tracheal, bronchial, or carinal transplantation; in seven patients, airway transplantation was not performed. The researchers found that the 90-day mortality rate was 5 percent among the 20 patients. Patients who underwent tracheal or bronchial reconstruction had no mortality at 90 days. Major 90-day morbidity events occurred in four of the 13 patients who underwent [airway](#) transplantation. At a postoperative mean of 18.2 months, stent removal was performed. Ten of the 13 [patients](#) were alive at a median follow-up of three 3 years 11 months; eight of these breathed normally through airways newly formed after stent removal.

"Airway bioengineering using stented aortic matrices demonstrated feasibility for complex tracheal and bronchial [reconstruction](#)," the authors write.

Several authors disclosed financial ties to the pharmaceutical industry.

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