Pediced pericardial flap for esophagorespiratory fistula: A helpful tool for a difficult problem

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Disclosures: Author has nothing to disclose with regard to commercial support.

Received for publication Feb 3, 2016; accepted for publication Feb 4, 2016; available ahead of print March 1, 2016.

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J Thorac Cardiovasc Surg 2016;151:e99

0022-5223/\$36.00

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<http://dx.doi.org/10.1016/j.jtcvs.2016.02.008>

Fistula formation between the esophagus and the tracheobronchial tree is a devastating complication encountered during the treatment of esophageal cancer. Often these fistulas occur postoperatively between the gastric conduit and the airway. They are also seen in the setting of tumor regression after definitive chemoradiation therapy. Regardless of the clinical circumstances, treatment of this problem can be particularly difficult. In addition to the technical challenges related to repair, continued soilage of the lungs by gastrointestinal secretions often leads to pulmonary sepsis.¹ This physiologic insult can be compounded by poor nutrition resulting from the necessary avoidance of oral intake.²

In their case report in this issue of the *Journal*, Yasuda and colleagues³ propose an innovative approach to the surgical management of this condition with a pediced posterior pericardial flap. After dissection of the fistula and esophagectomy, Yasuda and colleagues³ used this flap to patch the defect in the membranous bronchus and then buttressed the repair with a pediced latissimus dorsi flap. Some authors have championed the use of similar pericardial flaps to reinforce bronchial stumps and hilar anastomoses.^{4,5} Others have described the use of the pericardium to repair congenital tracheoesophageal fistulas in children.^{6,7} In the setting of a posttreatment fistula, the technique of Yasuda and colleagues³ for repairing the membranous portion of the airway is particularly appealing. The potential for pediced perfusion, as well as its ease of use, may give this technique an advantage relative to other methods. It is important to remember, however, that the blood supply to this segmental area of the pericardium may be compromised to some degree by the patient's previous radiation treatment.

As an additional point, the complex nature of this case underscores the utility of extracorporeal membrane oxygenation for procedures involving complicated

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Central Message

The pediced posterior pericardial flap represents an attractive option for repair of complicated tracheobronchial defects.

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reconstruction of the tracheobronchial tree. Although in this case Yasuda and colleagues³ opted for venoarterial extracorporeal membrane oxygenation because of the potential for aortic involvement, venovenous extracorporeal membrane oxygenation has become a valuable tool for situations in which intraoperative ventilation would otherwise prove challenging.

Overall, this case highlights several important points that will be useful to many in our field. Yasuda and colleagues³ are to be commended for their positive outcome in this challenging situation, as well as for their detailed description of this innovative technique.

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