Esophageal patch tracheoplasty for congenital tracheal stenosis

Akira Masaoka, MD, PhD

Received: 14 May 2009 / Accepted: 24 May 2009
© The Japanese Association for Thoracic Surgery 2010

I read with strong interest the current topics review article titled “Surgical management of congenital tracheal stenosis” by Terada et al. that appeared in this journal.¹ This disease is rare, and its treatments are associated with many difficulties. Although the authors recommend slide tracheoplasty, most cases have been treated by patch tracheoplasties. Terada et al. discussed two types of patch tracheoplasty: rib cartilage and pericardium.

We treated three patients with this disease by esophageal patch tracheoplasty.^{2,3} The first patient had undergone pericardial patch plasty initially. However, the pericardial patch ruptured 12 days after the operation, so esophageal patch plasty was performed immediately. The postoperative bronchoscopy revealed that the esophageal portion of the reconstructed trachea was epithelialized 1 month later, with the lumen maintaining its proper size. The patient died 3 months after the second operation. The cause of death was suspected pulmonary complication due to high-pressure ventilation during the 6 months before the first operation.

The experience with this patient encouraged us to perform this operation in a second patient. Her postoperative course was smooth, and she was doing well without any respiratory problems after 6 years of observation. Her reconstructed trachea had adapted with her growth. The third patient died 5 days postoperatively due to circulatory failure by tetralogy of Fallot.

I believe esophageal tracheoplasty is a most suitable operation for congenital tracheal stenosis because the esophagus is the only autologous tissue that does not require isolation and therefore has no problems regarding a blood supply. Thereafter, we adopted this operation as a reconstructive tool for the adult trachea in three more patients who had a long-segment defect or stenosis. Their postoperative pulmonary function tests revealed marked improvement of the functions.

The esophageal tracheoplasties have so far been performed in only three cases reported by Toronto group⁴ and our six cases. I hope this procedure will be accepted in many surgeons.

References

1. Terada M, Hotoda K, Toma M, Hirobe S, Kamagata S. Surgical management of congenital tracheal stenosis. *Gen Thorac Cardiovasc Surg* 2009;57:175–83.
2. Sasaki S, Hara F, Ohwa T, Eguchi T, Masaoka A. Esophageal tracheoplasty for congenital tracheal stenosis. *J Pediatr Surg* 1992;27:645–9.
3. Niwa H, Masaoka A, Yamakawa Y, Hara F, Kondo K, Fukai I, et al. Esophageal tracheobronchoplasty for disease of the central airway. *J Thorac Cardiovasc Surg* 1996;112: 124–9.
4. Loeff DS, Filler RM, Vinograd I, Ein SH, Williams WG, Smith CR, et al. Congenital tracheal stenosis: a review of 22 patients from 1965 to 1987. *J Pediatr Surg* 1988;23:744–8.

A. Masaoka (✉)
The Second Department of Surgery, Nagoya City University
Medical School, Kawasumi 1, Mizuho-cho, Mizuho-ku, Nagoya
467-8601, Japan