

Title: Reconstruction of Extensive Hypopharyngeal–Esophageal and Tracheal Defects

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Abstract:

Reconstruction of the trachea and upper digestive tract following tumor resection remains a major challenge. We present two novel surgical approaches tailored to different clinical situations.

First, for partial tracheal defects in the cervical region, we performed 2–stage reconstruction using a forearm flap combined with a free bone graft in 13 patients. The bone graft served as a skeletal support to maintain airway patency. A temporary tracheostoma was created during the first stage and closed later in most cases. All flaps survived, and 11 of 13 patients regained normal speech. The approach proved safe and structurally reliable.

Second, in cases requiring pharyngoesophagectomy combined with anterior mediastinal tracheostomy, we developed a 1–stage reconstruction technique using a single free jejunal flap containing multiple vascular pedicles. This allowed for simultaneous restoration of both the airway and alimentary tract. Among 34 patients, flap survival was 100%, with no anastomotic leakage. Major complications were limited, and the in–hospital mortality rate was 2.9%.

Both techniques demonstrate that complex reconstructions of the trachea and upper digestive tract can be performed safely with favorable functional and survival outcomes. Our methods offer reliable options for managing extensive composite defects in this anatomically and functionally demanding region.