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5<sup>th</sup> Meeting of the Thoracic Oncology, Thoracic Surgery, Techniques & Transplant, Respiratory Nursing and Respiratory Physiotherapy Areas of the Spanish Society of Pneumology and Thoracic Surgery (SEPAR)



10<sup>th</sup> International Workshop on Surgical Exploration of the Mediastinum and Systematic Nodal Dissection



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3<sup>rd</sup> Joint Meeting of the Spanish Society of Thoracic Surgery (SECT)



30<sup>th</sup> Congress of the "Asociación Iberoamericana de Cirugía Torácica" AIACT



## LONG TRACHEAL RESECTIONS

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Laryngotracheal resections are meanwhile highly standardized procedures in dedicated airway centers. The main indications for airway surgery are post-tracheostomy stenosis/malacia, idiopathic subglottic stenosis and post-intubation damage to the airway. As the majority of these conditions only affect a short segment of the airway, a tensionless anastomosis can usually be performed easily. However, anastomosis becomes significantly more difficult in cases of longer resection length. The total length of the airway, previous procedures, involvement of the subglottic region and age of the patients play an important role in determining the risk of long-segment resections. Other risk factors for anastomotic dehiscence include diabetes, and previous radiation to the neck.<sup>1</sup> In the absence of any of the above mentioned factors a resection length of about 50% of the trachea can be achieved in young patients with a flexible (non-calcified) airway.

In most cases, the required length to overcome the gap after an extensive resection can be gained by thorough mobilization of the airway. Care has to be taken not to injure the vessels running in the trachea-esophageal groove as these vessels supply the airway through a network of capillaries. Similar to intestinal anastomoses, a sufficient blood supply of the anastomosis is essential for an inconspicuous healing.<sup>2</sup> Therefore, mobilization is limited to the anterior and posterior aspect of the airway. If sole mobilization is not sufficient to obtain a tensionless anastomosis, several release maneuvers have been described, including suprahyoid, infrahyoid and hilar release. Extensive release can result in dysphagia as laryngeal elevation and epiglottic closure of the airway can be affected. Therefore, it is pivotal to evaluate swallowing after long-segment resections, either with a fiberoptic endoscopic evaluation of swallowing (FEES) or a videofluoroscopic swallow study (VFSS).

Keeping the patient's head flexed is important after long-segment airway resection in order to avoid additional tension to the anastomosis. Several groups have moved away from the traditional chin stich, which can result in detrimental neurological complications including paraplegia.<sup>3</sup> A head cradle and additional pillows during the early postoperative phase is sufficient to support the patient's neck.

In conclusion, long-segment airway resections can be challenging and thus require an experienced surgical team. The resection can impact postoperative laryngeal function that might require voice and swallow rehabilitation. Surgery is only one element and comprehensive treatment of these patients necessitates a multidisciplinary approach.

#### Bibliography

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