



Figure S1 Measurements of tracheal parameters and tumor longitudinal length on thin-slice CT. CT, computed tomography.

Table S1 The association between clinical characteristics and margin status

Variables	P value	OR (95% CI)
Gender		
Female		1.00 (reference)
Male	0.79	1.14 (0.41–3.16)
Pathology		
Other		1.00 (reference)
ACC	0.044*	2.91 (1.03–8.20)
Smoking		
Never		1.00 (reference)
Current	0.76	1.20 (0.37–3.88)
Former	0.18	0.31 (0.05–1.76)
Unknown	0.10	6.46 (0.68–61.16)
Comorbidities		
Diabetes	0.99	54953715.91 (0.00–Inf)
Hypertension	0.49	1.62 (0.41–6.42)
COPD	0.74	0.80 (0.22–2.96)
CAD	>0.99	0.00 (0.00–Inf)
Growth mode		
Non-extra-lumen growth		1.00 (reference)
Extra-lumen growth	<0.001*	7.03 (2.30–21.48)
Growth sites		
Cartilaginous part		1.00 (reference)
Membranous part	0.005*	5.06 (1.62–15.78)
Extent of excision		
Trachea alone		1.00 (reference)
Trachea + carina	0.20	1.94 (0.70–5.37)
Complications		
0		1.00 (reference)
1	>0.99	1.00 (0.32–3.12)
Age	0.73	1.01 (0.96–1.05)
Height	0.85	1.01 (0.92–1.11)
Length of trachea [†]		
Cervical segment	0.69	0.98 (0.90–1.07)
Tracheal thoracic segment	0.50	0.97 (0.89–1.06)
Total tracheal length	0.49	0.98 (0.92–1.04)
Segment/entire	0.87	0.26 (0.00–2,336,938.24)
Tumor margin to the carina distance [‡]		
Upper margin to the carina distance	0.35	0.99 (0.96–1.01)
Resection length	0.24	0.96 (0.90–1.03)
Resected trachea/entire trachea	0.38	0.04 (0.00–48.35)
Resected trachea/intrathoracic segment	0.50	0.32 (0.01–8.70)
Tumor size		
Measured by CT [‡]	0.56	1.02 (0.95–1.10)
Measured by pathologists	0.85	1.01 (0.94–1.08)
Margin distance from the carina	0.49	0.97 (0.88–1.06)

The outcome variable uses the negative margin status as the reference category. *, P value <0.05. [†], measured on preoperative enhanced thin-slice (1-mm) CT. [‡], tumor longitudinal length measured on preoperative enhanced thin-slice (1-mm) CT. ACC, adenoid cystic carcinoma; CAD, coronary artery disease; CI, confidence interval; COPD, chronic obstructive pulmonary disease; CT, computed tomography; Inf, infinity; OR, odds ratio.

Table S2 Incidence of postoperative complications of patients with MST

Total complications (n=16)	Value (n=62)
Anastomotic complications	14 (22.58)
Tissue over-granulation	14 (22.58)
Anastomotic fistula [†]	2 (3.23)
Recurrent laryngeal nerve injury	0 (0.00)
Other	
Respiratory failure	0 (0.00)
Myasthenia gravis	1 (1.61)
Death	0 (0.00)

All the categorical variables are presented as the sample size and proportion. [†], cases with anastomotic fistula all had tissue over-granulation subsequently. MST, median sternotomy.