

Table S1 States included in the Nationwide Inpatient Sample analysis

State	Year								
	2000	2001–2002	2003	2004	2005	2006	2007	2008	2009
Arizona	x	x	x	x	x	x	x	o	o
Florida	o	o	o	o	o	o	o	o	o
Georgia	x	x	x	x	x	x	x	o	o
Iowa	o	o	o	o	o	o	o	o	o
Kansas	x	o	o	o	o	o	o	o	o
Maine	o	o	o	o	o	o	o	o	o
Maryland	o	o	o	o	o	o	o	o	o
Nevada	x	o	o	o	o	o	o	o	o
New Hampshire	x	x	o	o	o	o	o	o	o
New Jersey	x	x	x	x	x	x	x	o	o
New Mexico	x	x	o	o	o	o	o	o	o
New York	o	o	o	o	o	o	o	o	o
North Carolina	o	x	x	x	x	x	x	x	x
Oregon	x	x	x	x	x	x	x	o	o
Pennsylvania	o	o	o	o	o	o	o	o	o
South Carolina	o	o	o	o	o	o	o	o	o
South Dakota	x	o	o	o	o	o	o	o	o
Texas	o	o	o	o	o	o	o	o	o
Virginia	o	o	o	o	o	o	o	o	o

Years demarcated with “o” had surgeon tracking data reliable for use, while “x” demarcates years with unreliable surgeon tracking data. States without any years with reliable data are omitted from the table. States were considered as reliable if tracking the National Provider Identifier (NPI), Unique Physician Identification Number (UPIN), or state-specific license number for all observations from that state.

Table S2 Codes used to define the cohort, complications, and covariates

Description	Code source	Codes
Cohort		
Neck dissection	ICD-9-CM procedure codes	40.40, 40.41, 40.42, and 40.3 if accompanying the diagnosis codes in <i>Table S3</i>
Squamous cell carcinoma	ICD-9-CM diagnosis codes	140, 140.0, 140.1, 140.2, 140.3, 140.4, 140.5, 140.6, 140.8, 140.9, 141, 141.0, 141.1, 141.2, 141.3, 141.4, 141.5, 141.6, 141.8, 141.9, 143, 143.0, 143.1, 143.8, 143.9, 144, 144.0, 144.1, 144.8, 144.9, 145, 145.0, 145.1, 145.2, 145.3, 145.4, 145.5, 145.6, 145.8, 145.9, 146, 146.0, 146.1, 146.2, 146.3, 146.4, 146.5, 146.6, 146.7, 146.8, 146.9, 147, 147.0, 147.1, 147.2, 147.3, 147.8, 147.9, 148, 148.0, 148.1, 148.2, 148.3, 148.8, 148.9, 149, 149.0, 149.1, 149.8, 149.9, 150, 150.0, 160, 160.0, 160.1, 160.2, 160.3, 160.4, 160.5, 160.8, 160.9, 161, 161.0, 161.1, 161.2, 161.3, 161.8, 161.9, 170.0, 170.1, 230.0, 231.0, 232.0, 232.1, 232.2, 232.3, 232.4, V10.01, V10.02, V10.22, V10.21, 162.0, V10.12, 165.0, 230.9, 231.1, 231.8, 231.9, 232.9
Primary exposure		
Surgeon	HCUP-NIS Inpatient Core files	For NIS: SURGID_S for year 2000, MDNUM2_S for years 2001–2002, and MDNUM2_R for years 2003–2009 For SID: MDNUM2_R (operating physician)
Primary outcome		
Nerve injury (cranial nerves, phrenic nerve, brachial plexus and cervical sympathetic trunk)	ICD-9-CM diagnosis codes	350.8, 351.8, 352.2, 352.3, 352.4, 352.5, 352.9, 354.8, 337.9
Chyle leak	ICD-9-CM diagnosis codes	457.8
Hematoma	ICD-9-CM diagnosis codes	998.12, 998.11, 998.13
Wound complication (seroma, respiratory, cardiac, urology)	ICD-9-CM diagnosis codes	998.3, 998.30, 998.31, 998.32, 998.5, 998.51, 998.59, 998.6, 998.4, 998.2, 998.81, 998.83, 998.87
Comorbidities		
Elixhauser comorbidities	HCUP-NIS Disease Severity Measures files	CM_AIDS, CM_ALCOHOL, CM_ANEMDEF, CM_ARTH, CM_BLDLOSS, CM_CHF, CM_CHRNLUNG, CM_COAG, CM_DEPRESS, CM_DM, CM_DMCX, CM_DRUG, CM_HTN_C, CM_HYPOTHY, CM_LIVER, CM_LYMPH, CM_LYTES, CM_METS, CM_NEURO, CM_OBESE, CM_PARA, CM_PERIVASC, CM_PSYCH, CM_PULMCIRC, CM_RENLFAIL, CM_TUMOR, CM_ULCER, CM_VALVE, CM_WGHTLOSS
Pedicled or free flap reconstruction	ICD-9-CM procedure codes	86.7, 86.70, 86.71, 86.72, 86.73, 86.74, 86.75, 86.6, 86.89
Total laryngectomy	ICD-9-CM procedure codes	30.3, 30.4
Prior radiation	ICD-9-CM diagnosis codes	V15.3

ICD-9-CM, The International Classification of Diseases, Ninth Revision, Clinical Modification; HCUP, the Health Care Utilization Project; NIS, Nationwide Inpatient Sample; SID, State Inpatient Database.

Table S3 Patients with ICD-9 procedure codes 40.40, 40.41, 40.42 were included in the study regardless of the diagnosis codes. Patients with ICD-9 procedure code 40.3 (general lymph node excision) in conjunction with the following ICD-9 diagnosis codes were included

Description	ICD-9-CM diagnosis codes
Squamous cell carcinoma	140, 140.0, 140.1, 140.2, 140.3, 140.4, 140.5, 140.6, 140.8, 140.9, 141, 141.0, 141.1, 141.2, 141.3, 141.4, 141.5, 141.6, 141.8, 141.9, 143, 143.0, 143.1, 143.8, 143.9, 144, 144.0, 144.1, 144.8, 144.9, 145, 145.0, 145.1, 145.2, 145.3, 145.4, 145.5, 145.6, 145.8, 145.9, 146, 146.0, 146.1, 146.2, 146.3, 146.4, 146.5, 146.6, 146.7, 146.8, 146.9, 147, 147.0, 147.1, 147.2, 147.3, 147.8, 147.9, 148, 148.0, 148.1, 148.2, 148.3, 148.8, 148.9, 149, 149.0, 149.1, 149.8, 149.9, 150, 150.0, 160, 160.0, 160.1, 160.2, 160.3, 160.4, 160.5, 160.8, 160.9, 161, 161.0, 161.1, 161.2, 161.3, 161.8, 161.9, 170.0, 170.1, 230.0, 231.0, 232.0, 232.1, 232.2, 232.3, 232.4
Cutaneous malignancy	172, 172.0, 172.1, 172.2, 172.3, 172.4, 171.0, 173, 173.0, 173.00, 173.01, 173.02, 173.09, 173.1, 173.10, 173.11, 173.12, 173.19, 173.2, 173.20, 173.21, 173.22, 173.29, 173.3, 173.30, 173.31, 173.32, 173.39, 173.4, 173.40, 173.41, 173.42, 173.49
Other head and neck malignancy (neural tumors, other head and neck malignancy)	190, 190.1, 190.2, 190.3, 190.4, 190.5, 190.6, 190.7, 190.8, 190.9, 192.0, 195.0, 234.0, 234.8, 234.9, 235.1, 235.6, 238.1, 238.2
Salivary gland malignancy	142, 142.0, 142.1, 142.2, 142.8, 142.9, 235.0
Thyroid/parathyroid malignancy	We did not include the procedure code 40.3 for thyroid/parathyroid malignancy

ICD-9-CM, The International Classification of Diseases, Ninth Revision, Clinical Modification.