Appendix 1 PubMed Search strategy

Table S1 The PubMed search strategy conducted on the 8th October 2023

Search number	Query	Filters	Search Details	Results	Time
1	#1 AND #2		((("transoral"[All Fields] OR "transorally"[All Fields]) AND ("robotic surgical procedures"[MeSH Terms] OR ("robotic"[All Fields] AND "surgical"[All Fields] AND "procedures"[All Fields]) OR "robotic surgical procedures"[All Fields] OR ("robotic"[All Fields] AND "surgery"[All Fields]) OR "robotic surgery"[All Fields])) OR "TORS"[All Fields] OR "robotic surgical procedures"[MeSH Terms]) AND ("Laryngectomy"[MeSH Terms] OR (("total"[All Fields] OR "totaled"[All Fields] OR "totaling"[All Fields] OR "totalled"[All Fields] OR "totalling"[All Fields] OR "totals"[All Fields]) AND ("Laryngectomy"[MeSH Terms] OR "Laryngectomy"[All Fields] OR "laryngectomies"[All Fields])))	100	22:12:17
2	"Laryngectomy"[Mesh] OR total laryngectomy		"Laryngectomy"[MeSH Terms] OR (("total"[All Fields] OR "totaled"[All Fields] OR "totaling"[All Fields] OR "totalled"[All Fields] OR "totalling"[All Fields] OR "totals"[All Fields]) AND ("Laryngectomy"[MeSH Terms] OR "Laryngectomy"[All Fields] OR "laryngectomies"[All Fields]))	11,561	22:09:22
3	(("transoral"[All Fields] OR "transorally"[All Fields]) AND ("robotic surgical procedures"[MeSH Terms] OR ("robotic"[All Fields] AND "surgical"[All Fields] AND "procedures"[All Fields]) OR "robotic surgical procedures"[All Fields] OR ("robotic"[All Fields] AND "surgery"[All Fields]) OR "robotic surgery"[All Fields])) OR "TORS"[All Fields] OR "robotic surgical procedures"[MeSH Terms]		(("transoral"[All Fields] OR "transorally"[All Fields]) AND ("robotic surgical procedures"[MeSH Terms] OR ("robotic"[All Fields] AND "surgical"[All Fields] AND "procedures"[All Fields]) OR "robotic surgical procedures"[All Fields] OR ("robotic"[All Fields] AND "surgery"[All Fields])) OR "TORS"[All Fields] OR "robotic surgical procedures"[MeSH Terms]	17,487	20:58:46

Appendix 2 Critical appraisal results

Table S2 Critical appraisal of eligible analytical cross sectional study

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Hassid S, Delcour L, Ambroise J, *et al.* 2020	Y	N	Y	Y	N	N	U	N/A
Cumulative percentage (%)	100.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0

Y, yes; N, No; U, unclear; N/A, not applicable.

Table S3 Critical appraisal of eligible case series

Citation	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Dowthwaite S, Nichols AC, Yoo J, *et al.* 2013.	Y	Y	Y	Y	Y	Y	Y	U	Y	N/A
Hans S, Chebib E, Chekkoury-Idrissi Y, *et al.* 2021.	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Krishnan G, Krishnan S. 2017.	Y	Y	Y	Y	Y	Y	Y	N	Y	U
Smith RV, Schiff BA, Sarta C, *et al.* 2013.	Y	Y	Y	Y	Y	Y	Y	N	Y	U
Wang CC, Lin WJ, De Virgilio A, *et al.* 2020.	Y	Y	Y	Y	Y	Y	Y	Y	Y	U
Cumulative percentage (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	40.0	100.0	20.0

Y, yes; N, No; U, unclear; N/A, not applicable.