Supplementary material

Appendix A

Data sources and search strategy

We performed a comprehensive literature search in PubMed, EMBASE and SCOPUS (up to September 2019) electronic databases to identify studies evaluating the efficacy and safety of the multi-band mucosectomy technique for endoscopic mucosal resection in Barrett's esophagus. PROSPERO was searched for ongoing or recently completed systematic reviews. Electronic searches were supplemented by manual searches of references of included studies and review articles.

We identified studies using the following medical subject headings (MeSH) and the keywords "Multi-band Mucosectomy", "Multi-Banding", "Multi-band", "Banding", "Band", "Endoscopic Mucosal Resection", "EMR", "Barrett's", and "Barrett's esophagus". The search was restricted to the English language.

The Medline search string was: "(((((((("multiple chronic conditions"[MeSH Terms] OR ("multiple"[All Fields] AND "chronic"[All Fields] AND "conditions"[All Fields]) OR "multiple chronic conditions"[All Fields] OR "multi"[All Fields]) AND ("Band"[Journal] OR "band"[All Fields]) AND mucosectomy[All Fields] AND barrett's[All Fields]) OR (("multiple chronic conditions"[MeSH Terms] OR ("multiple"[All Fields] AND "chronic"[All Fields] AND "conditions"[All Fields]) OR "multiple chronic conditions"[All Fields] OR "multi"[All Fields]) AND ("Band"[Journal] OR "band"[All Fields]) AND ("Empir Musicol Rev"[Journal] OR "emr"[All Fields]) AND barrett's[All Fields])) OR (("multiple chronic conditions"[MeSH Terms] OR ("multiple"[All Fields] AND "chronic"[All Fields] AND "conditions"[All Fields]) OR "multiple chronic conditions"[All Fields] OR "multi"[All Fields]) AND ("Band"[Journal] OR "band"[All Fields]) AND barrett's[All Fields])) OR (multi-band[All Fields] AND mucosectomy[All Fields] AND barrett's[All Fields])) AND (multi-band[All Fields] AND barrett's[All Fields])) OR (multi-band[All Fields] AND ("Empir Musicol Rev"[Journal] OR "emr"[All Fields]) AND barrett's[All Fields])) OR ((("endoscopic mucosal resection"[MeSH Terms] OR ("endoscopic"[All Fields] AND "mucosal"[All Fields] AND "resection"[All Fields]) OR "endoscopic mucosal resection"[All Fields]) AND Barrett's[All Fields]) OR (("Empir Musicol Rev"[Journal] OR "emr"[All Fields]) AND Barrett's[All Fields])) OR (("Empir Musicol Rev"[Journal] OR "emr"[All Fields]) AND Barrett's[All Fields] AND ("Band"[Journal] OR "band"[All Fields])) OR (("endoscopic mucosal resection"[MeSH Terms] OR ("endoscopic"[All Fields] AND "mucosal"[All Fields] AND "resection"[All Fields]) OR "endoscopic mucosal resection"[All Fields]) AND Barrett's[All Fields] AND ("Band"[Journal] OR "band"[All Fields])) OR (("endoscopic mucosal resection"[MeSH Terms] OR ("endoscopic"[All Fields] AND "mucosal"[All Fields] AND "resection"[All Fields]) OR "endoscopic mucosal resection"[All Fields]) AND Barrett's[All Fields] AND banding[All Fields]) OR (("Empir Musicol Rev"[Journal] OR "emr"[All Fields]) AND Barrett's[All Fields] AND banding[All Fields])".

Selection process

Two review authors (MS & SA) independently screened the titles and abstracts yielded by the search against the inclusion criteria. Full reports were obtained for all titles that appeared to meet the inclusion criteria or where there was any uncertainty. Review author pairs then screened the full text and abstract reports and decided whether these met the inclusion criteria. Disagreements were resolved through discussion among all the authors. The reasons for excluding trials were recorded. Neither of the review authors was blinded to the journal titles, or to the study authors or institutions. When there were multiple articles for a single study, we used the latest publication and supplemented it, if necessary, with data from the most complete version.

Data extraction

Using standardized forms, 2 reviewers (MS & SA) extracted data independently and in duplicate from each eligible study. Reviewers resolved disagreements by discussion. Unresolved disagreements were resolved by 2 arbitrators (PS & AR). The following data were extracted for each study: the publication status, the study design and location, the number of centers involved, the number of patients, patient characteristics (mean/median age, sex), the number of procedures, indications, mean/median lesion size, lesion aspect and histology, complete resections, *en bloc* resections, R0 resections, and adverse events (bleedings, perforation, stricture).

Quality assessment

Quality was assessed by the modified Newcastle–Ottawa Scale for non-randomized studies, ranging from 0 (low-quality) to 5 (high-quality). Two reviewers (MS & SA) assessed quality measures for included studies and discrepancies were adjudicated by collegial discussion.

Appendix B

Supplementary Table 1 Newcastle-Ottawa scale

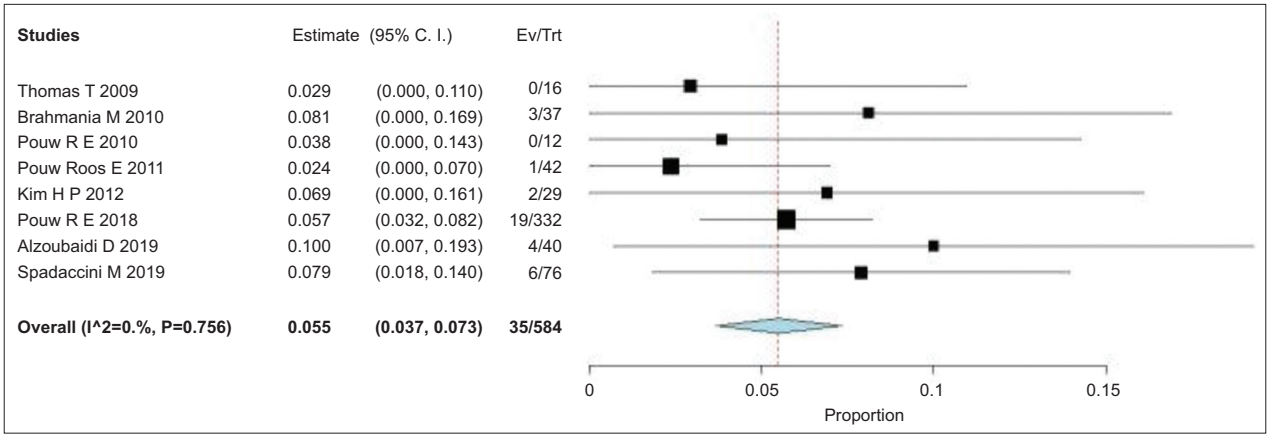
Author, year [Reference]	Selection				Comparability	Outcome			Total
	1	2	3	4	1	1	2	3	
Soehendra 2006 [7]	1	0	1	1	0	0	1	1	5
Peters 2007 [8]	1	0	1	1	0	0	1	1	5
Thomas 2009 [9]	1	0	1	1	0	0	1	1	5
Bhat 2009 [10]	1	0	1	1	0	0	1	1	5
Brahmania 2010 [20]	1	0	1	1	0	0	1	1	5
Pouw 2010 [13]	1	0	1	1	0	1	1	1	6
Aalvarez-Herrero 2011 [11]	1	0	1	1	0	0	1	1	6
Pouw Roos 2011 [12]	1	0	1	1	0	1	1	1	6
Kim 2012 [19]	1	0	1	1	0	0	1	1	5
Koutsoumpas 2016 [18]	1	0	1	1	0	1	1	1	6
Phoa 2016 [17]	1	0	1	1	0	1	1	1	6
Pouw 2018 [15]	1	0	1	1	0	1	1	1	6
Alzoubaidi 2019 [14]	1	0	1	1	0	0	1	1	5
Spadaccini 2019 [16]	1	0	1	1	0	0	1	1	5

Supplementary Table 2 Visible lesion characteristics

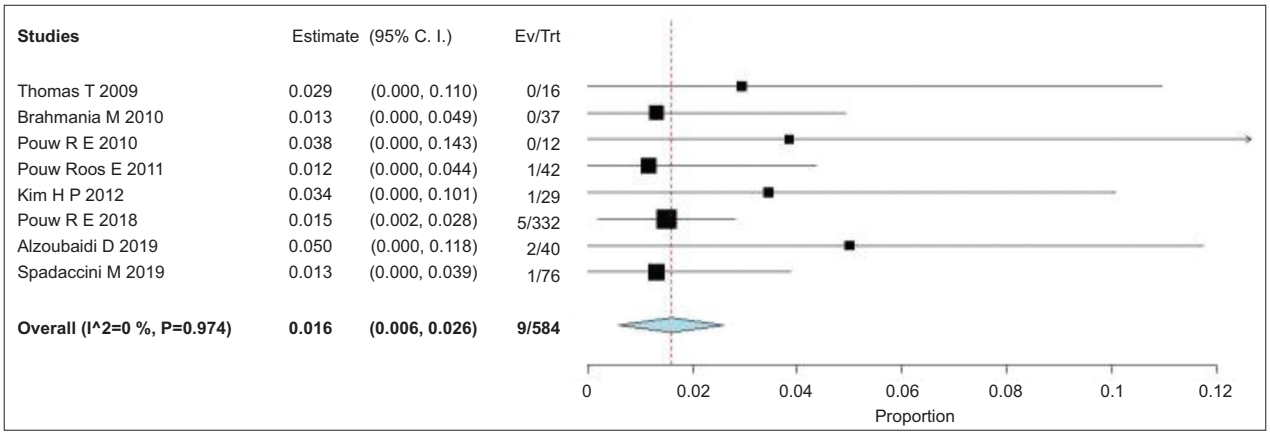
Author, year [Reference]	Focal lesion (n)	Mean lesion size (mm)	Previous resections (n)	Paris classification								
				Is	Ip	Ips	IIa	IIb	IIc	Is+IIa	IIa+IIc	IIa+IIb
Soehendra 2006 [7]	0	\	\	0	0	0	0	0	0	0	0	0
Peters 2007 [8]	24	\	11	0	0	0	4	11	0	0	9	0
Thomas 2009 [9]	16	13	\	0	0	0	4	9	0	0	3	0
Bhat 2009 [10]	0	\	\	\	\	\	\	\	\	\	\	\
Brahmania 2010 [20]	37	\	\	\	\	\	\	\	\	\	\	\
Pouw 2010 [13]	12	\	\	\	\	\	\	\	\	\	\	\
Aalvarez-Herrero 2011 [11]	113	\	\	\	\	\	\	\	\	\	\	\
Pouw Roos 2011 [12]	42	\	\	\	\	\	\	\	\	\	\	\
Kim 2012 [19]	29	\	0	\	\	\	\	\	\	\	0	0
Koutsoumpas 2016 [18]	118	\	\	\	\	\	\	\	\	\	\	\
Phoa 2016 [17]	\	\	\	\	\	\	\	\	\	\	\	\
Pouw 2018 [15]	332	10	0	6	6	0	217	68	12	0	0	0
Alzoubaidi 2019 [14]	40	13,5	0	1	1	0	31	3	0	0	3	0
Spadaccini 2019 [16]	76	13,5	23	19	0	0	29	13	6	\	\	

Supplementary Table 3 Efficacy outcomes

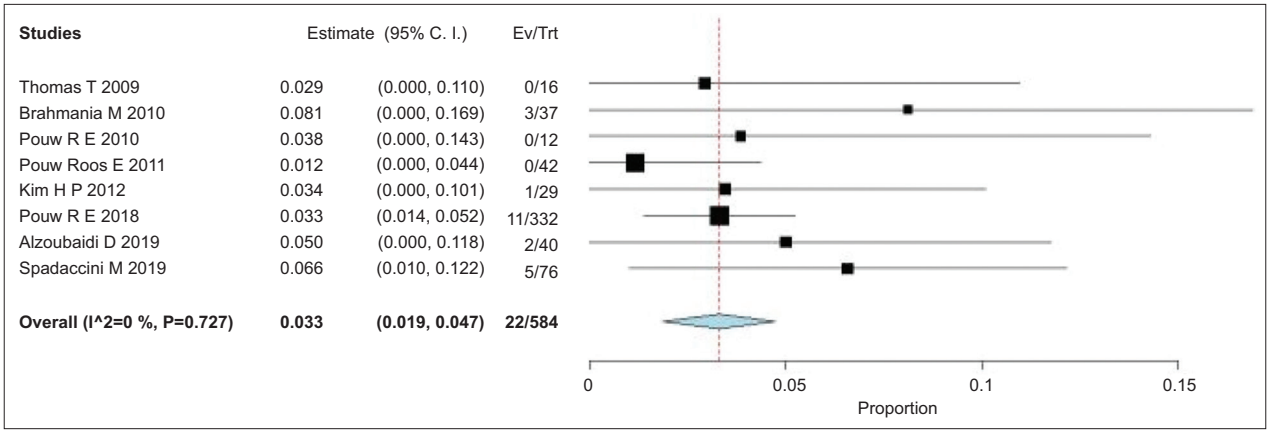
Author, year [Reference]	Focal lesions (n)	Specimens per procedure (mean n)	Specimen diameter (mean mm)	Procedural time (mean min)	Complete resections (n)	*En bloc* resections (n)	R0 resections (n)
Soehendra 2006 [7]	0	\	14.3	\	\	0	\
Peters 2007 [8]	24	6	17	\	24	\	24
Thomas 2009 [9]	16	\	\	\	14	\	12
Bhat 2009 [10]	0	\	\	\	\	\	\
Brahmania 2010 [20]	37	6	\	\	\	\	21
Pouw 2010 [13]	12	\	\	\	\	\	\
Aalvarez-Herrero 2011 [11]	113	3	\	\	103	32	\
Pouw Roos 2011 [12]	42	5	18	34	42	\	42
Kim 2012 [19]	29	\	\	\	\	\	\
Koutsoumpas 2016 [18]	118	\	\	\	\	\	\
Phoa 2016 [17]	\	\	\	\	\	\	\
Pouw 2018 [15]	332	\	15	16	322	111	325
Alzoubaidi 2019 [14]	40	2.7	12.9	\	40	\	36
Spadaccini 2019 [16]	76	2.6	\	18.7	76	25	74



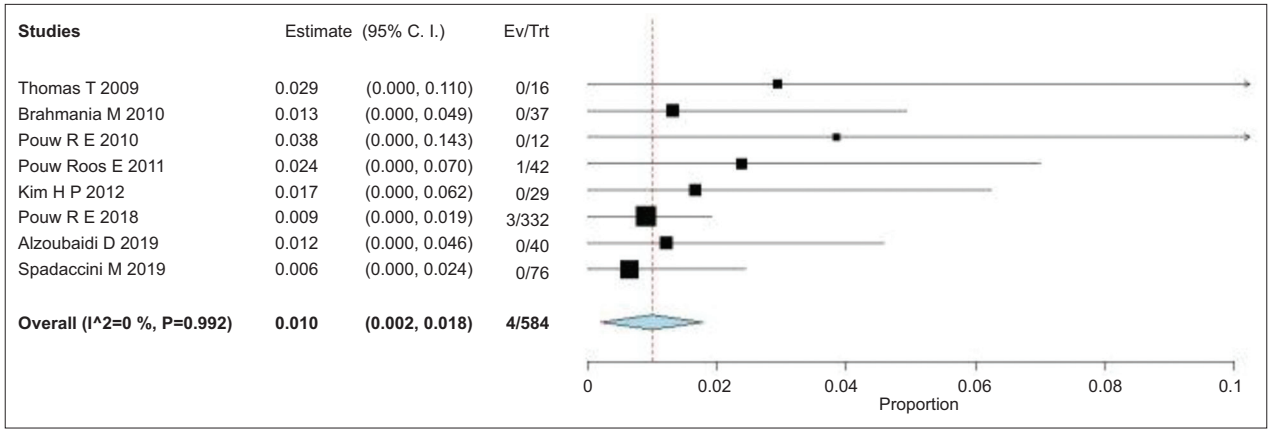
Supplementary Figure 1 Sensitivity analysis focused on focal lesion resection: overall adverse event rate (Forest plot)
CI, confidence interval; Ev, events; Trt, treatments



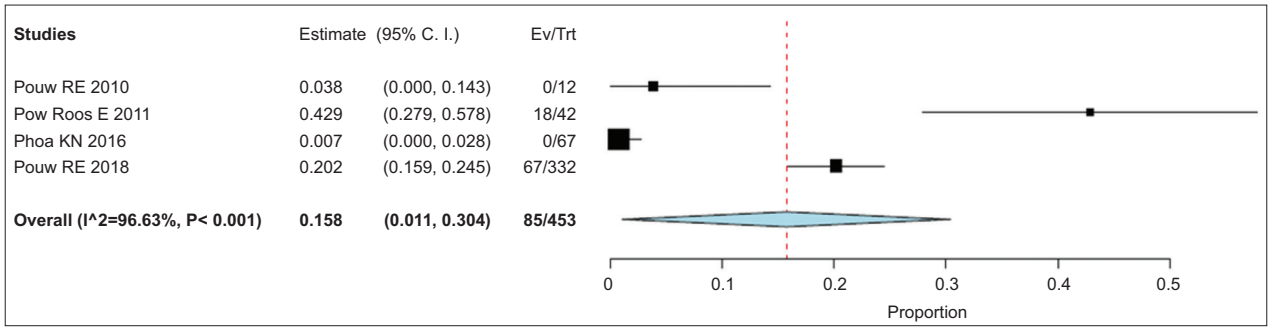
Supplementary Figure 2 Sensitivity analysis focused on focal lesion resection: bleeding rate (Forest plot)
CI, confidence interval; Ev, events; Trt, treatments



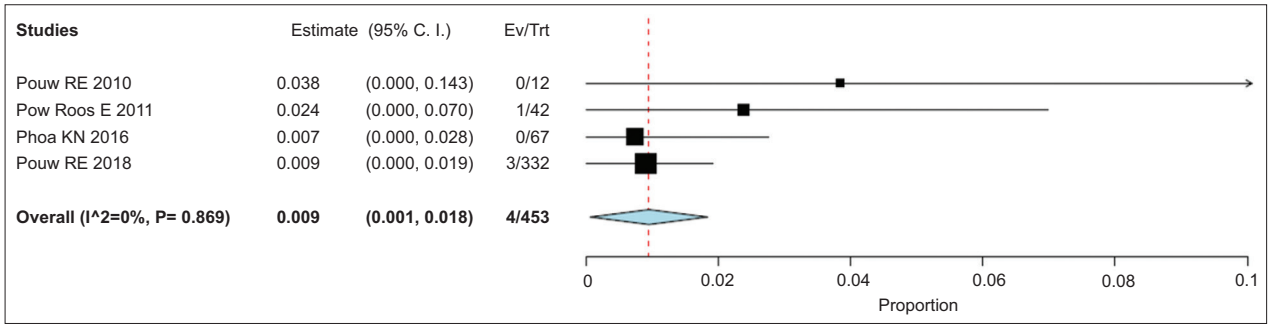
Supplementary Figure 3 Sensitivity analysis focused on focal lesion resection: perforation rate (Forest plot)
CI, confidence interval; Ev, events; Trt, treatments



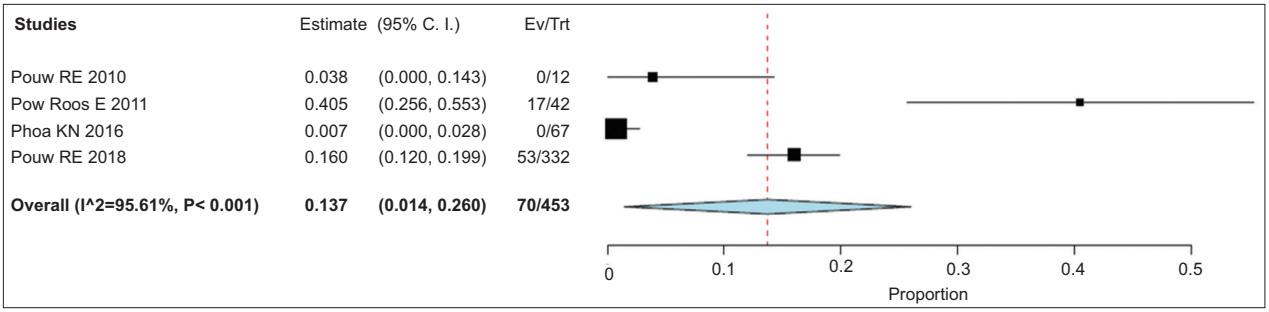
Supplementary Figure 4 Sensitivity analysis focused on focal lesion resection: stricture rate (Forest plot)
CI, confidence interval; Ev, events; Trt, treatments



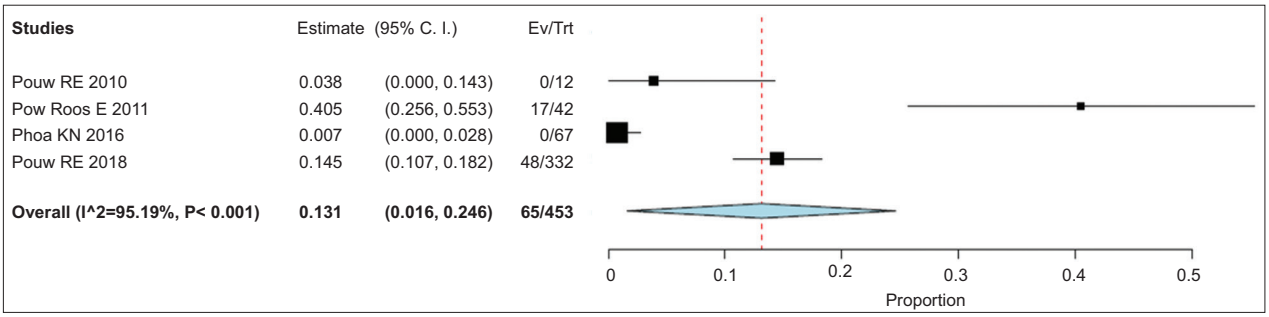
Supplementary Figure 5 Sensitivity analysis focused on prospective studies: overall adverse event rate (Forest plot)
CI, confidence interval; Ev, events; Trt, treatments



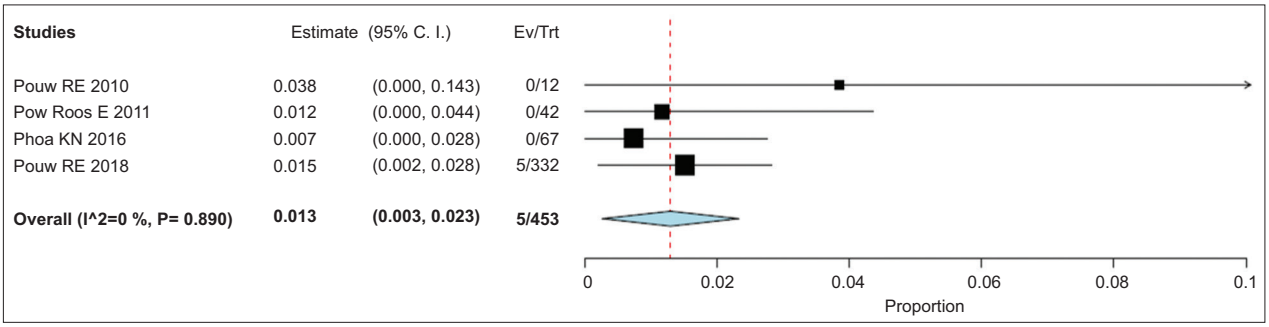
Supplementary Figure 6 Sensitivity analysis focused on prospective studies: perforation rate (Forest plot)
CI, confidence interval; Ev, events; Trt, treatments



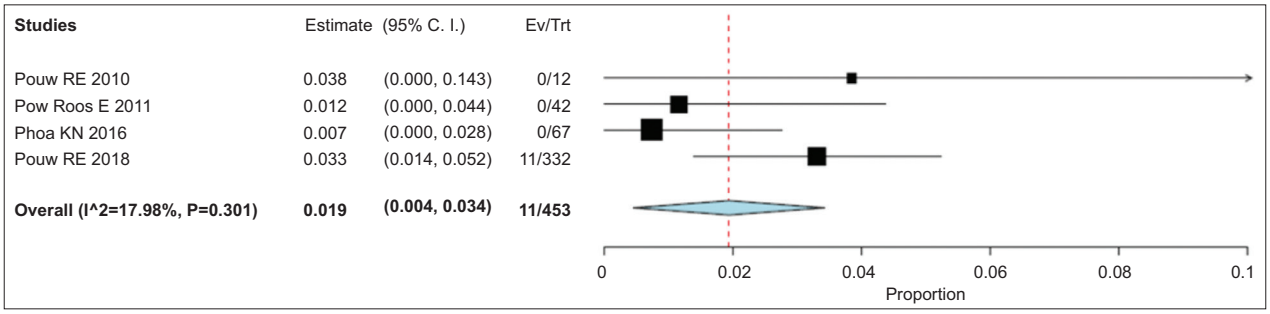
Supplementary Figure 7 Sensitivity analysis focused on prospective studies: overall bleeding rate (Forest plot)
CI, confidence interval; Ev, events; Trt, treatments



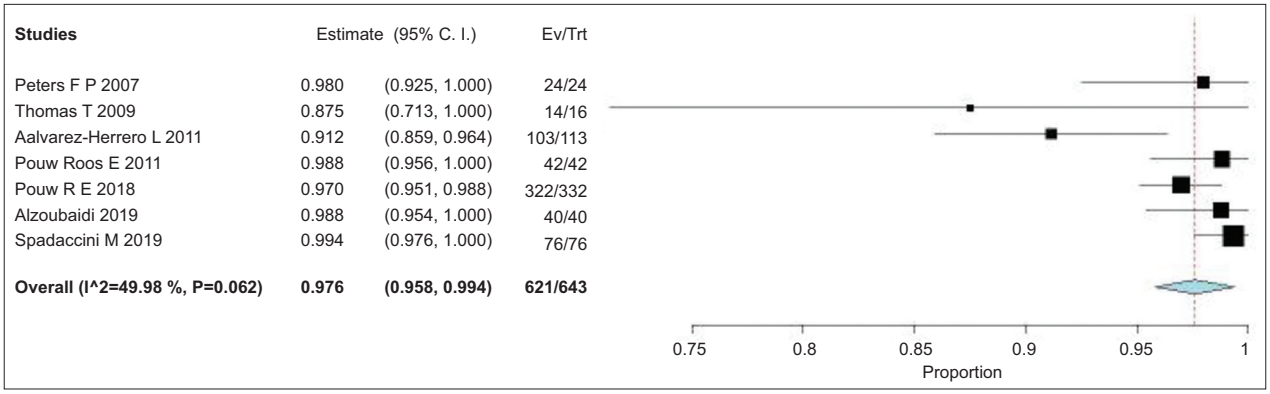
Supplementary Figure 8 Sensitivity analysis focused on prospective studies: intraprocedural bleeding rate (Forest plot)
CI, confidence interval; Ev, events; Trt, treatments



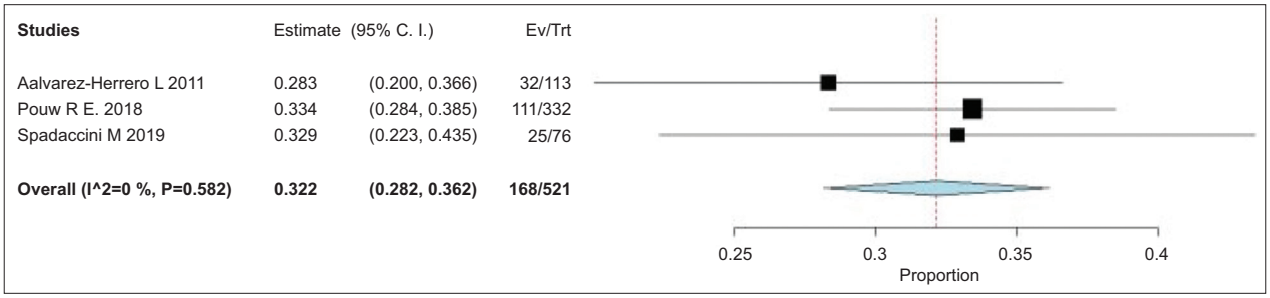
Supplementary Figure 9 Sensitivity analysis focused on prospective studies: postprocedural bleeding rate (Forest plot)
CI, confidence interval; Ev, events; Trt, treatments



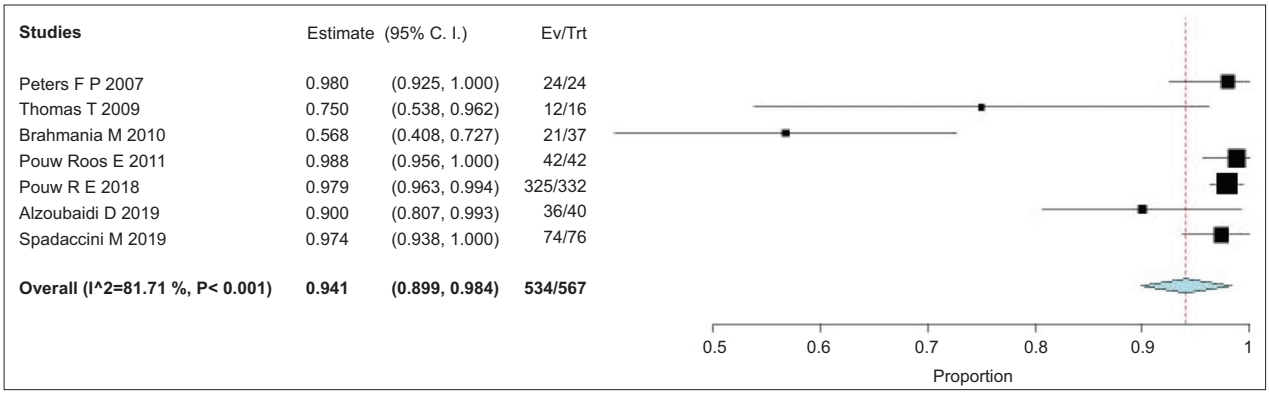
Supplementary Figure 10 Sensitivity analysis focused on prospective studies: stricture rate (Forest plot)
CI, confidence interval; Ev, events; Trt, treatments



Supplementary Figure 11 Forest plot: complete resection rate
CI, confidence interval; Ev, events; Trt, treatments



Supplementary Figure 12 Forest plot: *en bloc* resection rate
CI, confidence interval; Ev, events; Trt, treatments



Supplementary Figure 13 Forest plot: R0 resection rate
CI, confidence interval; Ev, events; Trt, treatments