Online Supplemental Table 1. Study characteristics of 7 studies

Author	Year	Region	Period	Total N	Design	NOS
Jajodia	2022	India	2013 − 2016	84	R	4
Kumar	2022	India	2017 − 2019	30	P	4
Elsholtz	2022	Germany	2012 − 2020	150	R	5
Ashour	2021	Egypt	2018 − 2020	69	R	4
Abdelrahman	2020	Egypt	2018 − 2020	34	R	4
Wangaryattawanich	2020	United States	2006 − 2018	128	R	4
Hsu	2019	United States	2014−2016	199	R	5

P, prospective; R, retrospective; NOS, Newcastle-Ottawa Scale

Online Supplemental Table 2. Patient and imaging characteristics of 7 studies

Author	Sex (M/F)	Age	Tumor subsite	Treatment method	Imaging modality	CT device		MRI device		PET device		Imaging period from therapy (month)	Reference standard		Evaluator
						Vendor	Model	Vendor	Model	Vendor	Model		Recurrence	non-recurrence	
Jajodia	NR	59 (median)	Oral cavity	Sur	CEMRI	NA	NA	Siemens	Avant 1.5T	NA	NA	3≥	His or FU	FU	1 head and neck radiologist (20yr)
Kumar	28/2	49 (mean)	Hypopharynx Oropharynx Larynx	CRT	CECT	GE Healthcare	NA	LightSpeed VCT 64	NA	NA	NA	3≥	His or FU	FU or His	2 radiologists (8, 17yr)
Elsholtz	85/65	62 (median)	Oral cavity	Sur ± CRT Sur ± RT	CEMRI CECT	NR	NR	NR	NR	NR	NR	1.5≥	His or FU	FU	2 head and neck radiologists (6, 7yr)
Ashour	41/28	50.6 (mean)	Larynx Oral cavity Oropharynx Hypopharynx Sinonasal cavity Skull base Nasopharynx Salivary glands	Sur ± RT CRT Sur ± CRT RT	CEMRI	NA	NA	Philips	Infenia 1.5T	NA	NA	2.5	His or FU	FU or His	1 neuroradiologist
Abdelrahman	27/7	54.5 (mean)	Oral cavity Larynx	NR	CEMRI CECT	GE Healthcare	Optima 660 128 Slice CT Scanner	Philips	Achieva 1.5T	NA	NA	1.5≥	His or FU	FU or His	2 head and neck radiologists (11, 15yr)
Wangaryattawanich	97/31	59 (mean)	Oropharynx Oral cavity Larynx Hypopharynx Nasopharynx Unknown primary Skin Parotid glands	Sur ± RT CRT Sur ± CRT RT	PET/CT	NA	NA	NA	NA	GE Healthcare Siemens	Discovery Emotion	2−3≥	His or FU	FU	1 neuroradiologist
Hsu	141/58	63.4 (mean)	Oropharynx Oral cavity Larynx Hypopharynx Nasopharynx Unknown primary Skin Parotid glands	CRT Sur ± CRT Sur + RT	PET/CT and CECT	NA	NA	NA	NA	GE Healthcare	Discovery PET/CT 600 Discovery PET/CT 690	3≥	His or FU	FU or His	1 of 4 dedicated head and neck radiologists (30, 15, 11, 9yr)

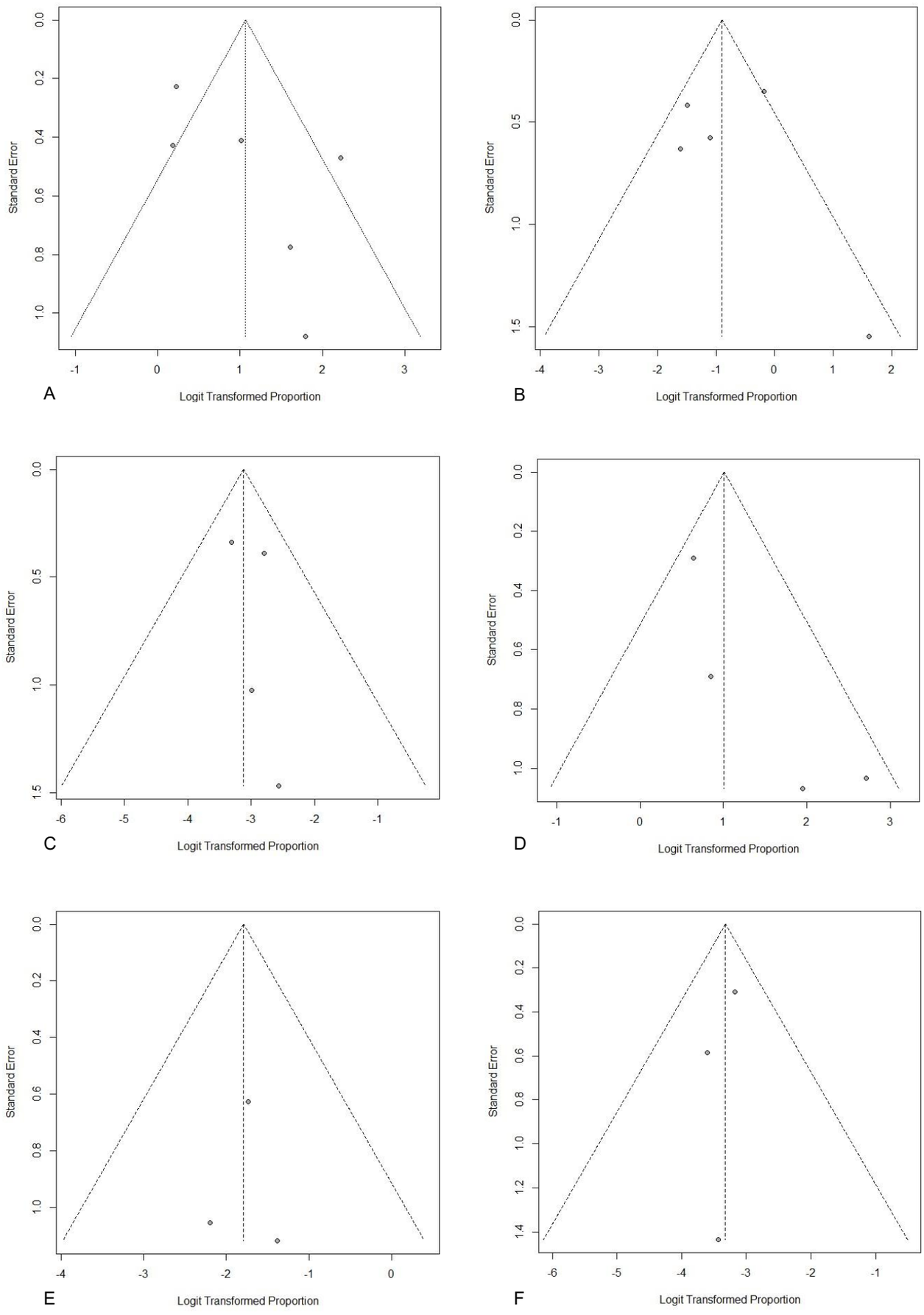
NR, not report RT, radiotherapy; CRT, chemoradiotherapy; Sur, surgery; CE, contrast-enhanced; NA, not available; His, histology; FU, follow up

Online Supplemental Table 3. Recurrence and non-recurrence lesions in each NI-RADS category in 7 studies (number)

Author	Primary site NI-RADS 1		Primary site NI-RADS 2		Primary site NI-RADS 3		Lymph nodes NI-RADS 1		Lymph nodes NI-RADS 2		Lymph nodes NI-RADS 3	
	Recurrence	Non-recurrence	Recurrence	Non-recurrence	Recurrence	Non-recurrence	Recurrence	Non-recurrence	Recurrence	Non-recurrence	Recurrence	Non-recurrence
Jajodia	NA	NA	15	18	46	5	NA	NA	NA	NA	NA	NA
Kumar	0	6	4	12	6	1	NA	NA	NA	NA	NA	NA
Elsholtz	7	114	2	0	10	2	3	110	1	9	15	1
Ashour	1	20	3	15	22	8	NA	NA	NA	NA	NA	NA
Abdelrahman	NA	NA	NA	NA	NA	NA	0	15	1	4	7	1
Wangaryattawanich	NA	NA	NA	NA	44	35	NA	NA	NA	NA	34	18
Hsu	9	245	7	31	12	10	11	263	3	17	7	3

NA, not available

Online Supplemental Figure 1: Funnel plots of the results of proportional meta-analyses of the recurrence rates for each NI-RADS category



A) Funnel plot of the result of proportional meta-analyses of the recurrence rate of NI-RADS3 in the primary lesion

B) Funnel plot of the result of proportional meta-analyses of the recurrence rate of NI-RADS2 in the primary lesion

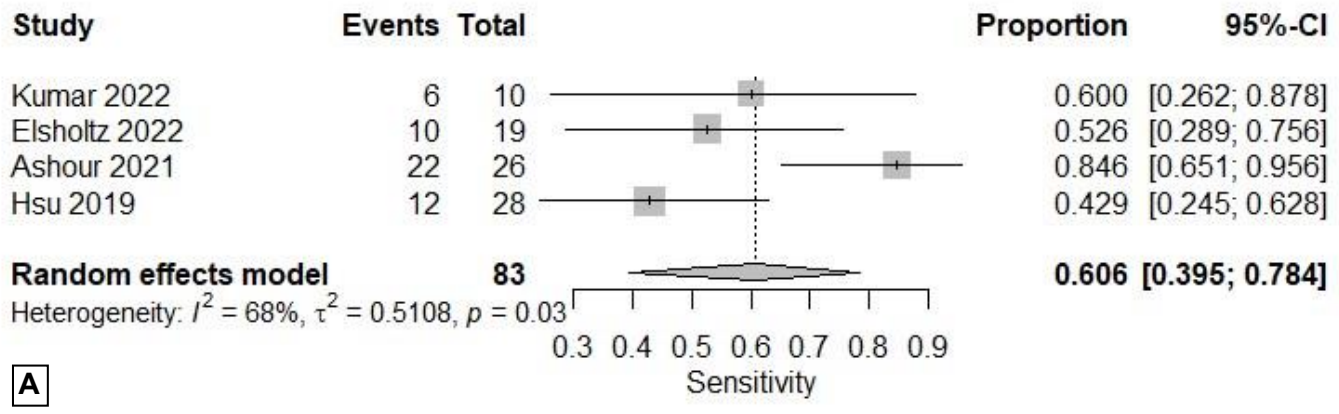
C) Funnel plot of the result of proportional meta-analyses of the recurrence rate of NI-RADS1 in the primary lesion

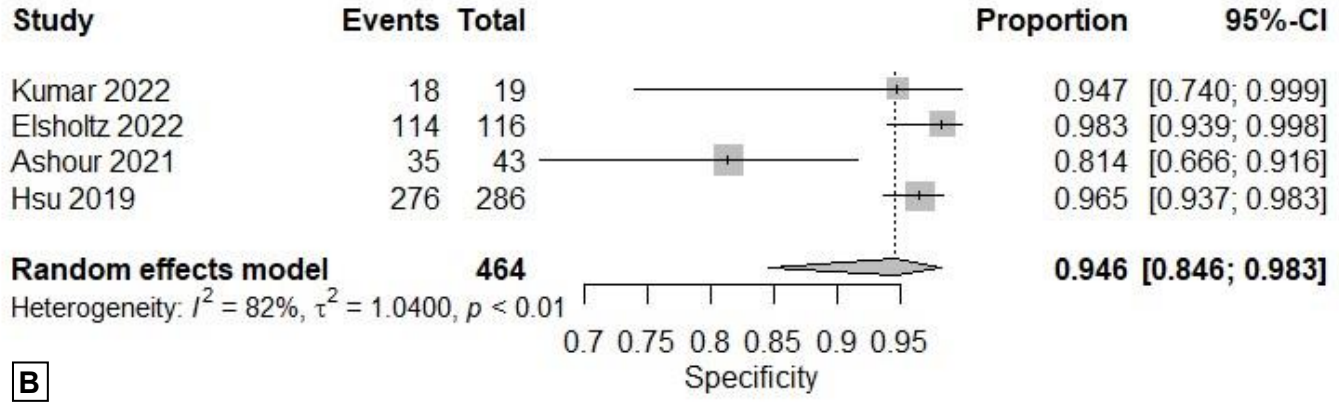
D) Funnel plot of the result of proportional meta-analyses of the recurrence rate of NI-RADS3 in the lymph node

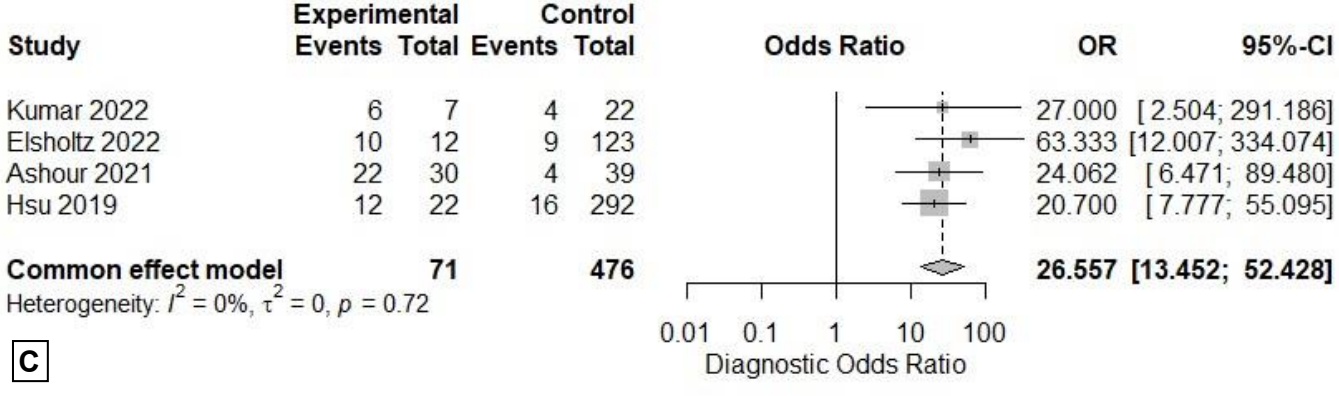
E) Funnel plot of the result of proportional meta-analyses of the recurrence rate of NI-RADS2 in the lymph node

F) Funnel plot of the result of proportional meta-analyses of the recurrence rate of NI-RADS1 in the lymph node

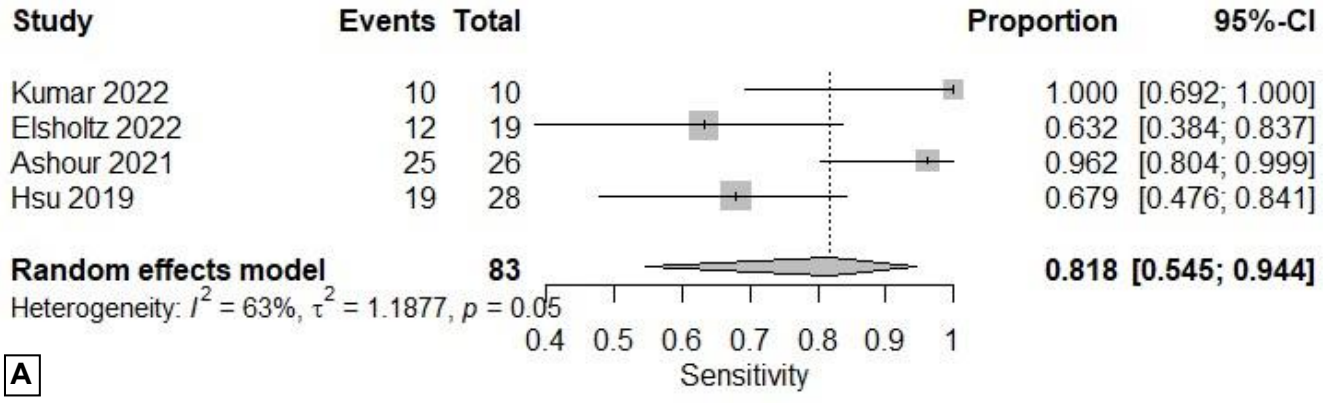
Online Supplemental Figure 2: Forest plot of the summary estimated sensitivity (A), specificity (B), and diagnostic odds ratio (C) in the primary site with NI-RADS3 as the cutoff

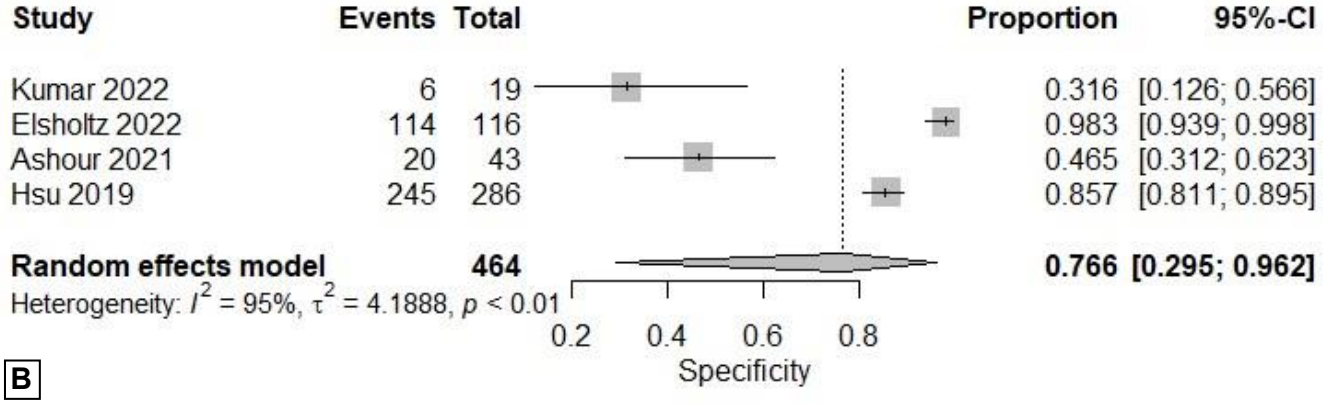


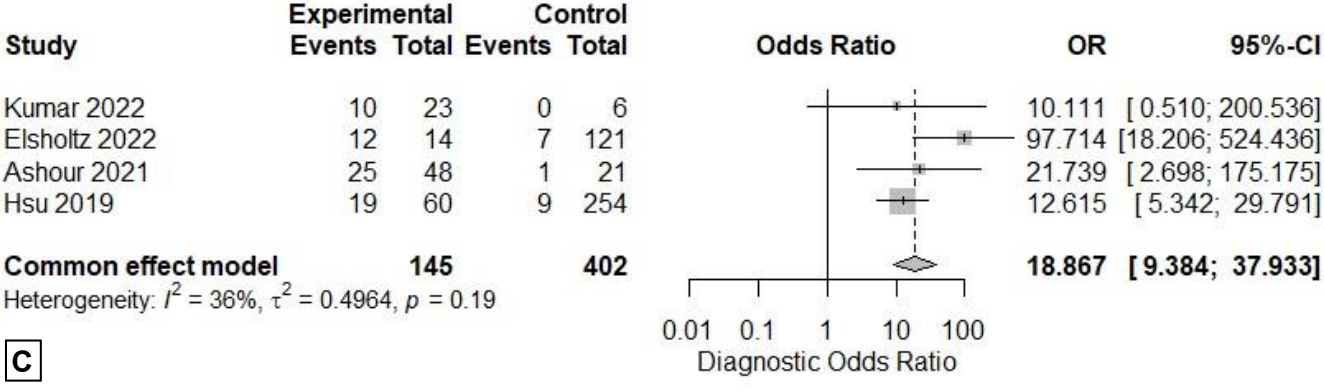




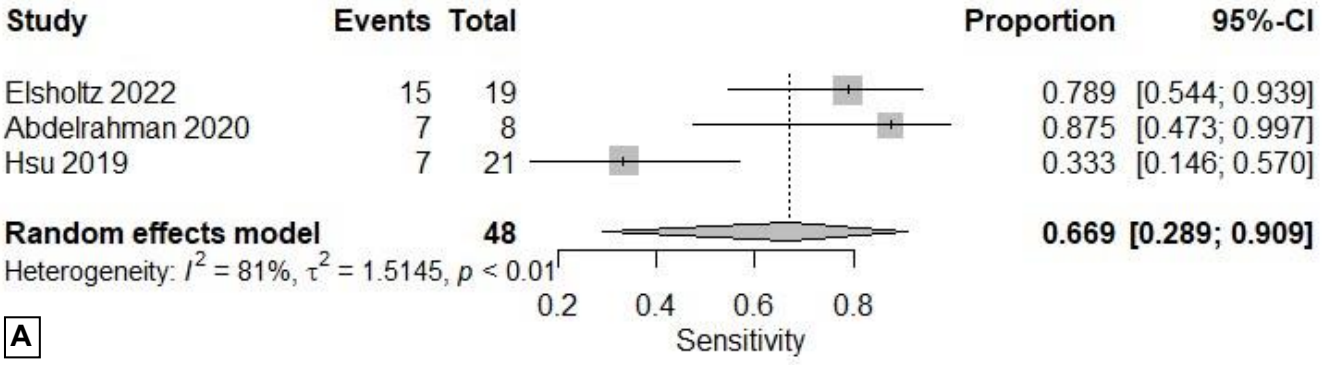
Online Supplemental Figure 3: Forest plot of the summary estimated sensitivity (A), specificity (B), and diagnostic odds ratio (C) in the primary site with NI-RADS2 as the cutoff

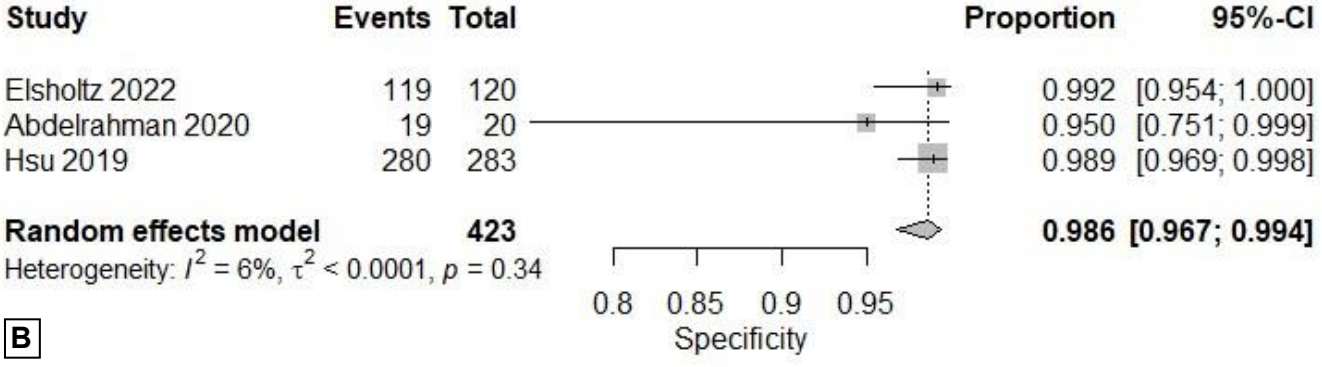


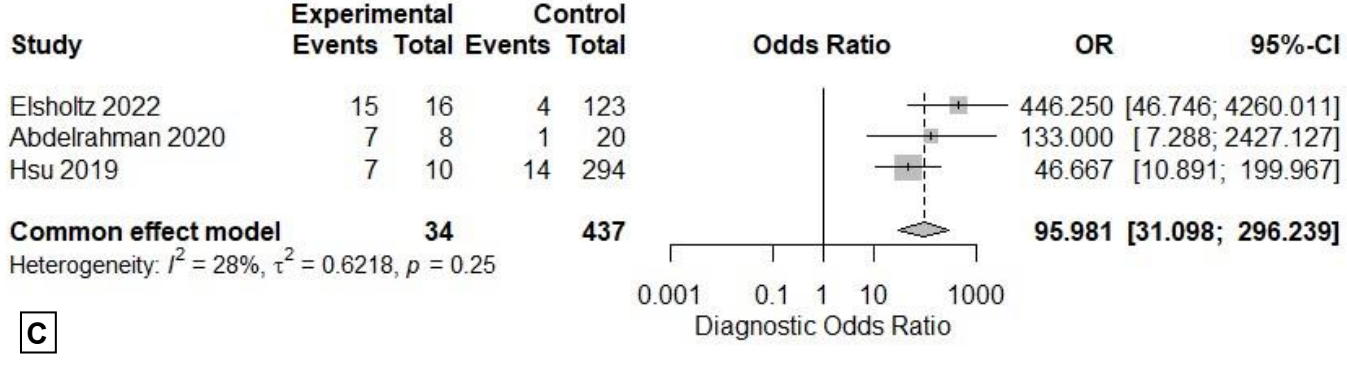




Online Supplemental Figure 4: Forest plot of the summary estimated sensitivity (A), specificity (B), and diagnostic odds ratio (C) in the lymph node with NI-RADS3 as the cutoff







Online Supplemental Figure 5: Forest plot of the summary estimated sensitivity (A), specificity (B), and diagnostic odds ratio (C) in the lymph node with NI-RADS2 as the cutoff