Appendix A: PubMed Search

("Hypophysectomy"[Mesh] OR Transsphenoid*[Title/Abstract] OR Trans sphenoid*[Title/Abstract] OR Endoscopic endonasal [Title/Abstract])
   AND
   ("Cerebrospinal fluid leak"[Mesh] OR Cerebrospinal fluid leak*[Title/Abstract] OR Cerebro spinal fluid leak*[Title/Abstract] OR Cerebral spinal fluid leak*[Title/Abstract] OR Cerebrospinal fluid rhinorrh*[Title/Abstract] OR Cerebro spinal fluid rhinorrh*[Title/Abstract] OR Cerebral spinal fluid rhinorrh*[Title/Abstract] OR CSF leak*[Title/Abstract] OR CSF rhinorrh*[Title/Abstract])

Appendix B: Embase Search

(transsphenoidal surgery"/exp OR transsphenoid*":ab,ti OR trans sphenoid*":ab,ti OR endoscopic endonasal":ab,ti)
   AND
   (liquorrhea"/exp OR cerebrospinal fluid leak*":ab,ti OR cerebro spinal fluid leak*":ab,ti OR cerebral spinal fluid leak*":ab,ti OR cerebrospinal fluid rhinorrh*":ab,ti OR cerebro spinal fluid rhinorrh*":ab,ti OR cerebral spinal fluid rhinorrh*":ab,ti OR csf leak*":ab,ti OR csf rhinorrh*":ab,ti)
   AND
   [embase]/lim

Appendix C: Cochrane Library Search

MeSH descriptor: [Hypophysectomy] explode all trees
   OR
   transsphenoid* OR trans sphenoid* OR endoscopic endonasal
   AND
   MeSH descriptor: [Cerebrospinal Fluid Leak] explode all trees
   OR
   cerebrospinal fluid leak* OR cerebro spinal fluid leak* OR cerebral spinal fluid leak* OR cerebrospinal fluid rhinorrh* OR cerebro spinal fluid rhinorrh* OR cerebral spinal fluid rhinorrh* OR csf leak* OR csf rhinorrh*

Supplementary Material 1: Overview of quality assessment

Supplementary Table S1   Overview of quality assessment case series studies

Study	Was the study question or objective clearly stated?	Was the study population clearly and fully described, including a case definition?	Were the cases consecutive?	Were the subjects comparable?	Was the intervention (surgery) clearly described?	Were the outcome measures (CSF leakage) clearly defined, valid, reliable, and implemented consistently across all study participants?	Was the length of follow-up adequate (1 month or longer)?	Were the statistical methods well-described?	Were the results well-described?	Quality rating
Park et al[24] (2015)	Yes	Yes	CD	Yes	Yes	No	NR	NA	Yes	Poor
Fishpool et al[61] (2017)	Yes	No	Yes	Yes	No	No	Yes	No	Yes	Poor
Sun et al[55] (2017)	Yes	Yes	CD	Yes	Yes	No	NR	NA	Yes	Poor
Ye et al[52] (2017)	Yes	Yes	CD	Yes	Yes	No	No	No	Yes	Poor
Gondim et al[18] (2017)	Yes	Yes	CD	Yes	No	No	Yes	NA	Yes	Poor
Cudal et al[73] (2018)	Yes	Yes	Yes	Yes	No	No	NR	NA	Yes	Poor
Tafreshi et al[89] (2020)	Yes	Yes	CD	Yes	No	No	NR	Yes	Yes	Poor
Nie et al[41] (2015)	Yes	Yes	CD	Yes	Yes	No	Yes	NA	Yes	Fair
Pinar et al[44] (2015)	Yes	Yes	CD	Yes	Yes	No	Yes	NA	Yes	Fair
Wang et al[22] (2015)	Yes	Yes	Yes	Yes	Yes	No	Yes	NA	Yes	Fair
Chabot et al[43] (2015)	Yes	Yes	Yes	Yes	Yes	No	NR	No	Yes	Fair
Freyschlag et al[48] (2016)	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Fair
Yano et al[23] (2017)	Yes	Yes	CD	Yes	No	No	Yes	Yes	Yes	Fair
Shin et al[64] (2017)	Yes	Yes	CD	Yes	No	No	Yes	Yes	Yes	Fair
Zoli et al[58] (2017)	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Fair
Karamouzis et al[71] (2018)	Yes	Yes	Yes	Yes	No	No	NR	Yes	Yes	Fair
Hajdari et al.[70] (2018)	Yes	Yes	Yes	Yes	Yes	No	NR	Yes	Yes	Fair
Rehman et al[76] (2018)	Yes	Yes	Yes	Yes	Yes	No	NR	Yes	Yes	Fair
Chen et al[16] (2019)	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Fair
Eichberg et al[17] (2019)	Yes	Yes	Yes	Yes	Yes	No	NR	NA	Yes	Fair
Shen et al[80] (2019)	Yes	Yes	CD	Yes	Yes	No	Yes	Yes	Yes	Fair
Seltzer et al[21] (2018)	Yes	Yes	Yes	Yes	No	No	Yes	NA	Yes	Fair
Pangal et al[20] (2020)	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Fair
Zhang et al[85] (2020)	Yes	Yes	Yes	Yes	Yes	No	NR	NA	Yes	Fair
Cappello et al[90] (2020)	Yes	Yes	Yes	Yes	Yes	No	NR	NA	Yes	Fair
Jang et al[50] (2016)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Good
Han et al[67] (2018)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Good
Barger et al[35] (2018)	Yes	Yes	Yes	Yes	Yes	Yes	NR	Yes	Yes	Good
Fallah et al[78] (2019)	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Good
Parikh et al[88] (2020)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Good

Legend

CD	NA	NR	Yes	CD/NA/NR	No
Cannot determine	Not applicable	Not reported	Low risk of bias	Unclear risk of bias	High risk of bias

Supplementary Table S2   Overview of quality assessment cohort studies

Study	Bias								Quality rating
	Representativeness of the exposed cohort	Selection of the nonexposed cohort	Ascertainment of exposure	Demonstration that outcome of interest was not present at start of study	Comparability of cohorts on the basis of the design or analysis	Assessment of outcome	Was follow-up long enough for outcomes to occur	Adequacy of follow up of cohorts	
Ishii et al[25] (2015)	*	*	*	*	-	*	B	D	Poor
Pines et al[15] (2015)	*	*	*	*	-	*	B	D	Poor
Fujimoto et al[59] (2017)	*	*	*	*	-	*	B	D	Poor
Levi et al[37] (2017)	*	*	*	*	-	*	B	D	Poor
Schuss et al[69] (2018)	*	*	*	*	-	*	B	D	Poor
Robins et al[74] (2018)	*	*	*	*	-	*	B	D	Poor
Rieley et al[84] (2020)	*	*	*	*	-	*	B	D	Poor
Sanders-Taylor et al[45] (2015)	*	*	*	*	-	*	*	*	Poor
Zhan et al[42] (2015)	*	*	*	*	**	*	B	D	Fair
Zaidi et al[34] (2016)	*	*	*	*	**	*	B	D	Fair
Gao et al[47] (2016)	*	*	*	*	-	*	B	*	Fair
Park et al[49] (2016)	*	*	*	*	-	*	*	D	Fair
Ajlan et al[62] (2017)	*	*	*	*	-	*	*	D	Fair
Cebula et al[57] (2017)	*	*	*	*	-	*	*	*	Fair
Fnais et al[51] (2017)	*	*	*	*	-	*	B	*	Fair
Zhou et al[56] (2017)	*	*	*	*	*	*	B	*	Fair
Sasagawa et al[60] (2017)	*	*	*	*	**	*	B	D	Fair
Patel et al[3] (2018)	*	*	*	*	**	*	B	D	Fair
Guo et al[68] (2018)	*	*	*	*	**	*	B	D	Fair
Hansasuta et al[38] (2018)	*	*	*	*	-	*	*	*	Fair
Lofrese et al[72] (2018)	*	*	*	*	**	*	B	D	Fair
Popov et al[66] (2018)	*	*	*	*	**	*	B	D	Fair
Xue et al[77] (2021)	*	*	*	*	**	*	B	D	Fair
Memel et al[83] (2019)	*	*	*	*	-	*	*	D	Fair
Castaño-Leon et al[87] (2020)	*	*	*	*	**	*	B	D	Fair
Liu et al[36] (2020)	*	*	*	*	*	*	B	D	Fair
Fathalla et al[40] (2015)	*	*	*	*	*	*	*	*	Good
Gondim et al[39] (2015)	*	*	*	*	**	*	*	*	Good
Xie et al[46] (2016)	*	*	*	*	**	*	*	D	Good
Przybylowski et al[63] (2017)	*	*	*	*	**	*	*	*	Good
Negm et al[19] (2017)	*	*	*	*	**	*	*	D	Good
Ding et al[26] (2017)	*	*	*	*	*	*	*	*	Good
Wang et al[54] (2017)	*	*	*	*	**	*	*	D	Good
Karki et al[53] (2017)	*	*	*	*	**	*	*	D	Good
Wilson et al[75] (2018)	*	*	*	*	**	*	*	D	Good
Eseonu et al[65] (2018)	*	*	*	*	**	*	*	D	Good
Chen et al[81] (2019)	*	*	*	*	**	*	B	*	Good
Spina et al[79] (2019)	*	*	*	*	**	*	*	*	Good
Azab et al[82] (2019)	*	*	*	*	**	*	*	D	Good
Tardivo et al[86] (2020)	*	*	*	*	**	*	*	D	Good

Legend

B	D	*/**	B/D	-
No	No statement	Low risk of bias	Unclear risk of bias	High risk of bias