

Supplementary

Table S1 Demographic and clinical characteristics of patients undergoing endoscopic transsphenoidal surgery for pituitary tumors who received the one- or two-hand approaches

Variable	One-hand approach			Two hand approach		
	Phase 1 (n=35)	Phase 2 (n=25)	P value	Phase 1 (n=21)	Phase 2 (n=31)	P value
Age (years)	47.9±14.6	44.6±14.2	0.280	42.1±14.6	57.7±13.7	0.001*
Gender, male	12 (34.3)	9 (36.0)	1.000	8 (38.1)	18 (58.1)	0.258
Tumor type			0.412			0.076
Non-functional	25 (71.4)	15 (60.0)		11 (52.4)	24 (77.4)	
Functional	10 (28.6)	10 (40.0)		10 (47.6)	7 (22.6)	
Prolactinoma	2 (5.7)	6 (24.0)		4 (19.0)	3 (9.7)	
Growth hormone	7 (20.0)	1 (4.0)		6 (28.6)	2 (6.5)	
Thyroid stimulating hormone	0 (0.0)	2 (8.0)		0 (0.0)	0 (0.0)	
Cushing	1 (2.9)	1 (4.0)		0 (0.0)	2 (6.5)	
Previous operation	5 (14.3)	3 (12.0)	1.000	2 (9.5)	7 (22.6)	0.283
Apoplexy	12 (34.3)	5 (20.0)	0.260	8 (38.1)	9 (29.0)	0.556
Preoperative tumor volume (cm ³)	6.9±11.5	2.28±3.6	0.003*	5.7±6.9	9.2±9.9	0.192
Knop's grade			0.150			0.638
0	5 (14.3)	7 (28.0)		0 (0.0)	0 (0.0)	
1	6 (17.1)	9 (36.0)		5 (23.8)	5 (16.1)	
2	7 (20.0)	4 (16.0)		6 (28.6)	6 (19.4)	
3	8 (22.9)	3 (12.0)		6 (28.6)	14 (45.2)	
4	9 (25.7)	2 (8.0)		4 (19.0)	6 (19.4)	
Hardy suprasellar extension			0.088			0.228
A	11 (31.4)	16 (64.0)		6 (28.6)	3 (9.7)	
B	15 (42.9)	5 (20.0)		7 (33.3)	10 (32.3)	
C	6 (17.1)	3 (12.0)		6 (28.6)	16 (51.6)	
D	3 (8.6)	1 (4.0)		2 (9.5)	2 (6.5)	

Data are presented as n (%) or mean ± SD. *, P<0.05. SD, standard deviation.

Table S2 Postoperative outcomes and complications in patients with pituitary tumor receiving one- or two-hand approaches

Variable	One-hand approach			Two-hand approach		
	Phase 1 (n=35)	Phase 2 (n=25)	P value	Phase 1 (n=21)	Phase 2 (n=31)	P value
Operation time (minutes)	180 [120–600]	77 [47–142]	<0.001*	160 [110–240]	120 [65–302]	0.020*
Hospital stay (days)	7 [4–90]	5 [3–23]	0.003*	7 [4–14]	6 [3–68]	0.299
Intraoperative extent of resection						0.003*
Total or near total (>90%)	23 (65.7)	22 (88.0)	0.071	15 (71.4)	31 (100.0)	
Subtotal (≤90%)	12 (34.3)	3 (12.0)		6 (28.6)	0 (0.0)	
Postoperative MRI extent of resection			0.052			0.558
Total (100%)	21 (60.0)	21 (84.0)		15 (71.4)	19 (61.3)	
Subtotal (<100%)	14 (40.0)	4 (16.0)		6 (28.6)	12 (38.7)	
Visual field change/improve (improve/preoperative visual disturbance)	7/9 (77.8)	5/5 (100.0)	0.505	6/7 (85.7)	14/19 (73.7)	1.000
Diabetes insipidus	4 (11.4)	5 (20.0)	0.470	3 (14.3)	5 (16.1)	1.000
Hypopituitarism	7 (20.0)	3 (12.0)	0.499	0 (0.0)	1 (3.2)	1.000
Postoperative RT	9 (25.7)	1 (4.0)	0.035*	2 (9.5)	5 (16.1)	0.687
Intraoperative CSF leak	15 (42.9)	4 (16.0)	0.047*	7 (33.3)	9 (29.0)	0.768
Postoperative CSF leak	7 (20.0)	0 (0.0)	0.035*	0 (0.0)	3 (9.7)	0.264
Nasal complications	4 (11.4)	8 (32.0)		5 (23.8)	8 (25.8)	
Sinusitis	3 (8.6)	5 (20.0)		3 (14.3)	4 (12.9)	
Epistaxis	1 (2.9)	2 (8.0)		2 (9.5)	4 (12.9)	
Hyposmia	0 (0.0)	1 (4.0)		0 (0.0)	0 (0.0)	
Surgical complications	4 (11.4)	1 (4.0)	0.390	0 (0.0)	2 (6.5)	0.509
ICH	2 (5.7)	0 (0.0)		0 (0.0)	1 (3.2)	
Meningitis	1 (2.9)	1 (4.0)		0 (0.0)	0 (0.0)	
CN palsy	1 (2.9)	0 (0.0)		0 (0.0)	1 (3.2)	
Postoperative endocrine function			0.721			0.333
Complete remission	9/10 (90.0)	7/9 (77.8)		10/10 (90.0)	4/5 (80.0)	
Partial remission	1/10 (10.0)	1/9 (11.1)		0 (0.0)	1/5 (20.0)	
Stable disease	0 (0.0)	1/9 (11.1)		0 (0.0)	0 (0.0)	
Re-operation for CSF leak	6 (17.1)	2 (8.0)	0.222	0 (0.0)	1 (3.2)	1.000
Re-operation for nasal complication	4/7 (57.1)	6/11 (54.5)	1.000	5/6 (83.3)	4/15 (12.9)	0.045*

Data are presented as n (%), n/N (%) or median [range]. *, P<0.05. MRI, magnetic resonance imaging; RT, radiation therapy; CSF, cerebrospinal fluid; ICH, intracerebral hemorrhage; CN, cranial nerve.