

Prospective Trial of a Short Hospital Stay Protocol After Endoscopic Endonasal Pituitary Adenoma Surgery

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Introduction

Patients typically remain hospitalized for several days after transsphenoidal surgery for pituitary adenoma resection for reasons including pain control, serial neurological assessments, surveillance for CSF leak, and management of endocrine issues. We sought to determine if an evidence-based perioperative care protocol combined with an endoscopic approach could lead to routine and safe discharge on post-operative day 1 (POD1).

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe post-operative care concerns in patients who have undergone transsphenoidal pituitary surgery, 2) Understand how most postoperative endocrinologic disorders can be safely managed as an outpatient.

Methods

Our multi-disciplinary pituitary group prospectively implemented a perioperative care protocol that emphasizes patient education, early mobilization, and scheduled inpatient and outpatient endocrine assessments on 50 consecutive patients who underwent surgical resection of a pituitary adenoma (82% macroadenomas, 18% microadenomas-- see table 1 for details). Endoscopic endonasal surgery characterized by aggressive tumor resection and avoidance of nasal packing and lumbar drains was employed in all cases. Lengths-of-stay, readmissions, and postoperative outcomes were analyzed.

	All (n= 50)	Macroadenoma (n =41)	Microadenoma (n=9)
Age in years (median)	50 ± 13		
Sex			
·Female	58 % (29)	69%	31%
·Male	42% (21)	90.5%	9.5%
Category		82%	18%
Maximum diameter (cm)		2.18 ± 0.80 (max 4.5 cm)	0.57 ± 0.20
·Cavernous Invasion		41% (17)	
·Suprasellar extension		56% (23)	
Previous Treatment			
·Surgery	18% (9)	19.5 (8)	11% (1)
·Radiation	4% (2)	4.9% (2)	0%
·Dopamine Agonist	20% (10)	17% (7)	33% (3)
Hormonally Active Tumors	24% (12)	7.3% (3)	100% (9)
·Prolactin	6% (3)	---	33% (3)
·Cushing's/Nelson's	8% (4)	2.4% (1)	44% (4)
·Acromegaly	6% (3)	4.9% (2)	11% (1)
·FSH	2% (1)	2.4% (1)	---

Results

Using the short-stay-protocol, 92% (46/50) of patients were successfully discharged on POD1-- see table 2 for a summary of early postoperative outcomes. The average length-of-stay for all patients was 1.16 ±0.55 days (range 1-4). Postoperative diabetes insipidus (DI) occurred in 16% of patients (8/50), was effectively managed on an outpatient basis and did not delay discharge. Readmission was required in 2 patients, in both cases for delayed presentation of a CSF leak.

Conclusions

A short-stay protocol allows for an overnight hospital stay for patients following endoscopic endonasal pituitary surgery with a low rate of complications or readmission.

	All (n= 50)	Macro (n =41)	Micro (n=9)
Diabetes insipidus			
·% of patients	16% (8)	17% (7)	11% (1)
·% presenting by POD1	88% (7/8)		
·Median onset day	1 (1-3)		
·Post-DI hyponatremia	2/8		
ICU Admission	10% (5)	10% (4)	11% (1)
·Median LOS (days)	1 (1-4)		
·Mean LOS (days)	1.8 ±1.3		
Hospital Length of Stay			
·% discharged on POD1	92% (46)	93% (38)	89% (8)
·Median LOS	1 (1-4)	1 (1-4)	1 (1-2)
·Mean LOS	1.16 ± 0.55	1.27 ±0.74	1.11 ± 0.33
·Median LOS with DI	1 (1-4)		
·Mean LOS with DI	1.3 ± 0.8		
Readmission			
· Post-op CSF leak	4% (2)	4.9% (2)	
Emergency Room Visits (No Readmission)			
·Hyponatremia	2% (1)	2.4% (1)	
·Minor Bleeding	2% (1)	2.4% (1)	