



## “Minor” Complications with Transssphenoidal Surgery: Often Ignored but Always Relevant

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### Introduction

Transssphenoidal surgery is the primary approach for sellar and parasellar lesions. These operations are associated with many uncommon but significant risks such as carotid artery injury, visual loss, CSF rhinorrhea, meningitis and pituitary failure. There are numerous frequently encountered but rarely reported minor complications that are individually rare but cumulatively common, each of which can affect the patient’s operative experience.

### Learning Objectives

By the conclusion of this session, participants should be able to 1) Identify common minor complications of transssphenoidal pituitary surgery, 2) Understand the impact of these complications on the post-operative care of the patient and 3) Understand techniques to minimize these minor complications.

### Methods

All patients who had undergone endonasal transssphenoidal surgery at our institution were retrospectively evaluated. Major complications such as stroke, vascular injury, pituitary failure, vision loss, epistaxis, DVT/PE, MI, coma and death were excluded. Minor complications were classified and identified in this patient population.

### Results

580 patients had transssphenoidal surgery at this institution, 34 (5.9%) underwent a microscopic approach, 488 (84.1%) underwent an endoscopic approach and 58 (10.0%) had a hybrid approach. 62 (10.7%) patients were noted to have a major, non-endocrine complication. 65 (11.1%) patients were noted to have a minor complication that affected their post-operative recovery. These included endocrine related issues, positioning issues, sino-nasal and oral complications, anesthesia related problems, fat graft site complications and endoscope visualization difficulties. Minor endocrine complications included transient diabetes insipidus (34), in-hospital SIADH (8) and steroid induced psychosis (2). Sinonasal complications include mucocoeles, sinusitis and synechia. Other relatively frequent findings include positioning related neck pain (4) and fat graft site complications (2).

Table 2			
Minor Complications: Brigham and Women's Hospital Experience in 582 cases			
	Microscope	Endoscope	Total
Anesthesia Related Complications			
Invasive catheters		Arterial Line induced pain	1
Airway Issues	1 bite block migration down oropharynx post-extubation, requiring re-intubation	1 (superficial thrombophlebitis)	1
	1 difficult airway (aborted surgery after multiple attempts)		1
Entry Catheters		1 urinary tract infection	1
Positioning related issues		1 Neck pain	1
Endoscopic Visualization Issues		1 (air bubbles from under-inflated ET tube)	1
Naso-sinus complications	1 synechia (requiring operative lysis)	2 mucocoeles	3
		2 persistent anosmia	2
Oral Complications		1 nasolabial fold dermatitis (from endotracheal tube)	1
		1 frontal teeth numbness	1
Fat harvest complications		1 hematoma	1
		1 cosmetic deformity	1
Endocrine related issues	10 Transient DI	21 Transient diabetes insipidus	31
	1 In-hospital SIADH	7 In-hospital SIADH	8
	1 Steroid psychosis	1 Steroid psychosis	2
Sellar clearance issues		1 Post-operative bitemporal constriction	1
CSF diversion issues			0
Other			0
		Total	62

### Single Institution Experience



Abdominal fat graft site cosmetic complication

Table 1			
Complications			
Table 1a	Table 1b	Minor Complications	
Major Complications			
Death	Anesthesia Related Issues	Sino-nasal complications	Endocrine related issues
Meningitis	Invasive Catheter Complications	Alar tears	Transient Diabetes Insipidus
CSF Rhinorrhea	Endotracheal tube malpositioning / Dislocation	Nasal burns	Delayed SIADH
Vascular Injury	Urethral catheter complications	Posterior Epistaxis	DDAVP induced hyponatremia
Stroke	Oropharyngeal trauma	Anosmia / Dysosmia	Delayed hypocortisolism
Visual Loss	Medication reactions / allergies	Dyspareunia	Delayed hypothyroidism
Tumor bed hematoma	Corneal abrasions	Chronic sinusitis	CSF Diversion Complications
Epistaxis		Mucocoeles	
Diabetes Insipidus / SIADH	Positioning Related Issues	Septal Perforations	Meningitis
Hypopituitarism		Cosmetic Deformities (Saddle nose)	Tension Pneumocephalus
DVT/PE (major)	Three-point fixation complications		Intracranial hypotension
Head/neck "burns/washes" complications		Fat Graft site complications	Retained lumbar drain catheter
Myocardial Infarction		Abscess	Radculopathy
Pneumonia	Endoscope Visualization	Seroma	
	Visualization compromise	Wound compromise	
	Bloody obscuration		
	Air bubbles		

### Overall Complications of Transssphenoidal Surgery

### Conclusions

The peri-operative and post-operative management of transssphenoidal patients can significantly be affected by major and minor complications alike. Attention to every detail of the patients’ care can help minimize these cumulatively common issues.

### References

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