

Comparison of STOP-BANG scores between patients undergoing endoscopic endonasal approach surgery for resection of pituitary adenoma

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Introduction

- The **STOP-BANG** questionnaire is a validated screening tool for obstructive sleep apnea (OSA) and considers a history of snoring, fatigue, observed apneic episodes, hypertension, BMI, age, neck circumference, and gender.¹

STOP-BANG Score	Risk for moderate to severe OSA ¹
0-2	Low
3-4	Intermediate
5-8	High

- Patients undergoing endoscopic endonasal approach (EEA) surgery for pituitary adenoma resection can present with physical changes reflective of hormonal imbalances (e.g., weight gain with Cushing's disease), which can contribute to **increased risk of OSA** and thus a **higher STOP-BANG score**.^{2,3}
- Therefore, we sought to compare STOP-BANG scores between patients who underwent EEA surgery for pituitary adenoma resection with respect to their specific pituitary pathology.

Methods and Materials

- This single-institution, **retrospective chart review** study consisted of patients undergoing EEA surgery for a presumed pituitary adenoma from 2017-2023.
- STOP-BANG scores** were collected from patient's pre-operative notes in the electronic health record.
- Patients were **categorized based on their surgical pathology report** into the following groups: corticotroph, somatotroph, lactotroph, gonadotroph, thyrotroph, plurihormonal (non-corticotroph), null cell adenoma, and normal pituitary tissue.
- Standard t-test** (assuming equal variance, alpha = 0.05) was used to compare mean STOP-BANG scores between groups consisting of at least 30 members.

Results

- 244 patients** underwent EEA surgery for resection of pituitary adenoma during the studied timeframe. Mean STOP-BANG score was 2.9 ± 1.9 .
- 58 (24%) of patients were diagnosed with a corticotrophic pituitary adenoma. **Table 1** shows the frequency of pituitary adenoma pathologies with their respective mean STOP-BANG scores.
- On average, patients with thyrotrophic pituitary adenomas had the highest STOP-BANG score (4.4 ± 1.9). **Figure 1** displays differences in mean STOP-BANG scores between groups.

Table 1

Pathology	Number (%)	STOP-BANG (mean \pm SD)
corticotroph (ACTH-secreting)	58 (24)	3.2 ± 1.8
somatotroph (GH-secreting)	15 (6)	3.9 ± 1.6
lactotroph (prolactin-secreting)	15 (6)	2.5 ± 2.3
gonadotroph (LH/FSH-secreting)	58 (24)	3.5 ± 1.6
thyrotroph (TSH-secreting)	5 (2)	4.4 ± 1.9
null cell adenoma	38 (16)	2.2 ± 2
plurihormonal adenoma (non-corticotroph)	3 (1)	3.3 ± 1.2
normal pituitary tissue	52 (21)	2.1 ± 1.6
Total	244	2.9 ± 1.9

Table 1. STOP-BANG score (mean \pm SD) with respect to pituitary adenoma pathology

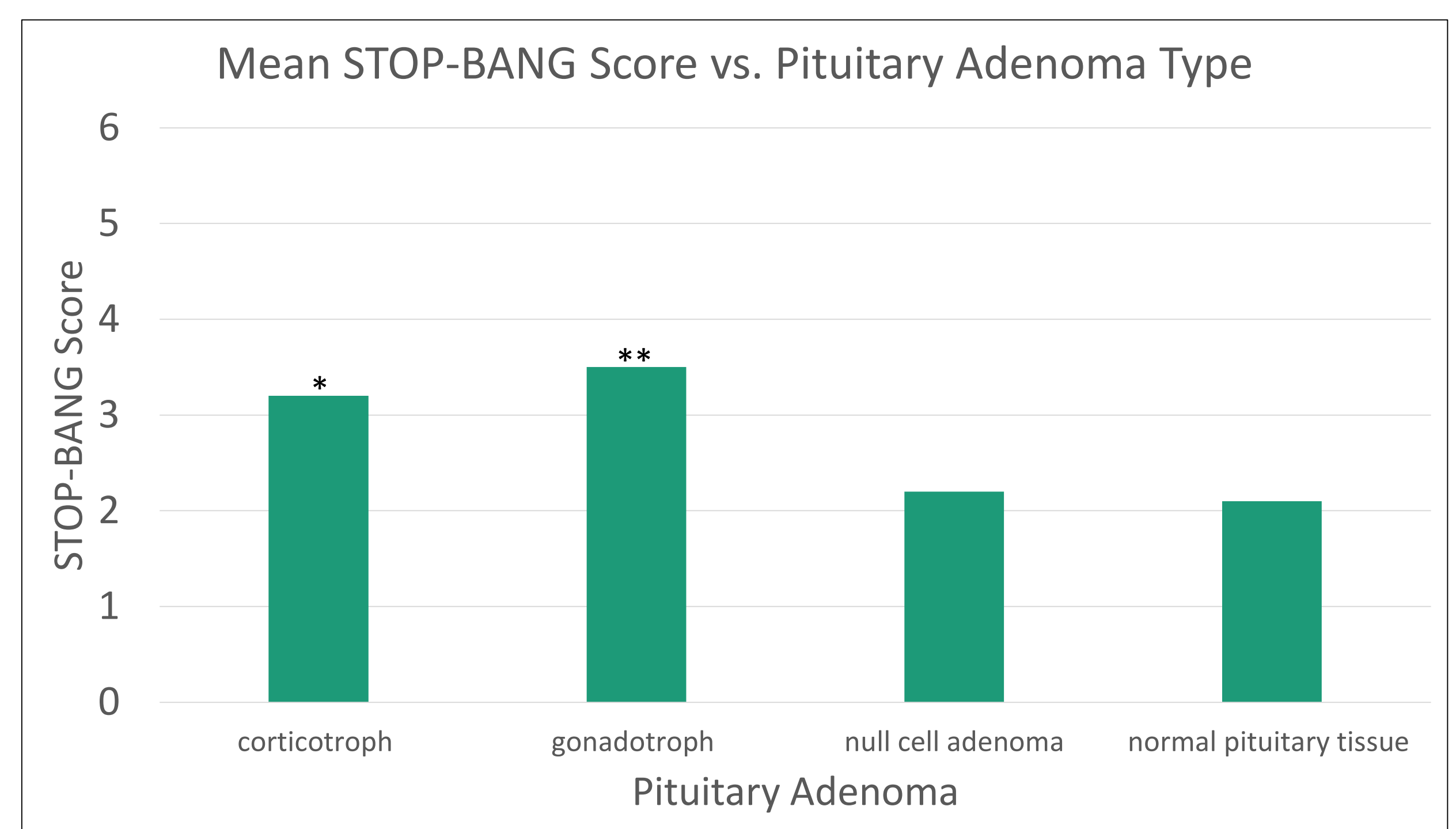


Figure 1. Mean STOP-BANG score with respect to pituitary adenoma pathology. Groups under 30 members were excluded from statistical analysis. * = corticotrophic vs null cell ($p = 0.01$), corticotrophic vs normal pituitary tissue ($p = 0.005$). ** = gonadotrophic vs non-gonadotrophic ($p = 0.006$), gonadotrophic vs null cell ($p < 0.005$), gonadotrophic vs normal pituitary gland ($p < 0.005$).

Discussion

- Mean STOP-BANG scores of patients varied significantly when grouped and compared by pituitary pathology.
- These findings suggest patients with certain pituitary adenomas (e.g., gonadotrophic) may at higher risk of OSA than others (e.g., null cell) and warrant screening in select circumstances.
- Recognizing these variations can help clinicians better identify and manage patients at increased risk for OSA, ultimately improving perioperative care and outcomes for those undergoing EEA surgery for pituitary adenomas.

Next Steps

- Characterize STOP-BANG scores by pituitary volume

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