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Introduction

Pituitary neuroendocrine tumors (PitNETs) and Rathkes Cleft cysts (RCC) in children are rare and distinct from more common pediatric sellar lesions such as craniopharyngioma. Presentation is often due to endocrinopathies or visual dysfunction secondary to optic chiasm compression. Surgical resection and perioperative management can be challenging, especially in young children.

Objective

To assess the clinical, radiographic, endocrinologic, and vision outcomes of endoscopic endonasal surgery for PitNETs and RCCs in pediatric patients.

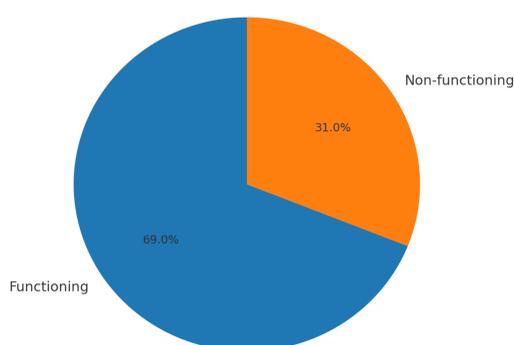
Methods

An IRB-approved single center retrospective cohort study of pediatric patients undergoing endoscopic endonasal transsphenoidal surgery for PitNET between 2012 and 2025 was performed. Patient demographics, radiographic, endocrine, surgical, visual, and perioperative outcomes were obtained from the electronic medical record. Descriptive statistics were used for analysis.

Results

- 29 patients were included for study.
- Average age 16.0 ± 3.0 years
- 11(38%) patients were female.
- A total of 20 (69.0%) patients had functional PitNETs while 3 (10.3%) had nonfunctional PitNETs and 6 had RCC (20.7%).
- Functional PitNETs - 8 (40%) prolactinomas, 6 (30%) ACTH-secreting, and 6 (30%) growth hormone-secreting tumors.

Figure 1: Breakdown of Functional vs Non-functional Sellar Lesions



Results

Figure 2: Rates of biochemical remission in functional PitNETs at 3 mo, 6 mo, and last follow-up

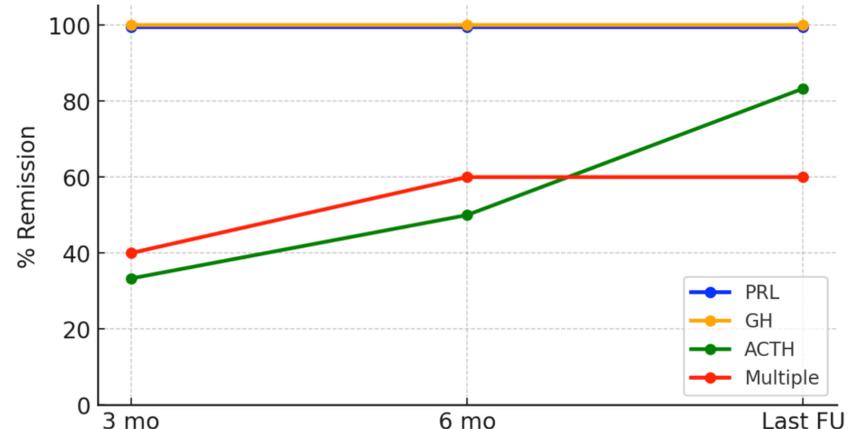


Figure 3: Postoperative complications in functional PitNETs

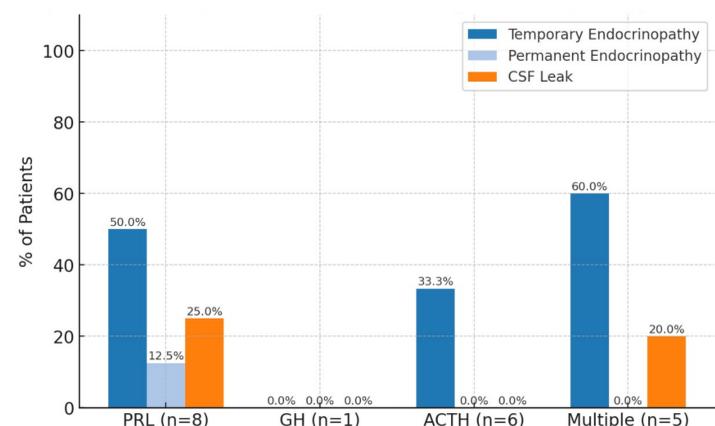
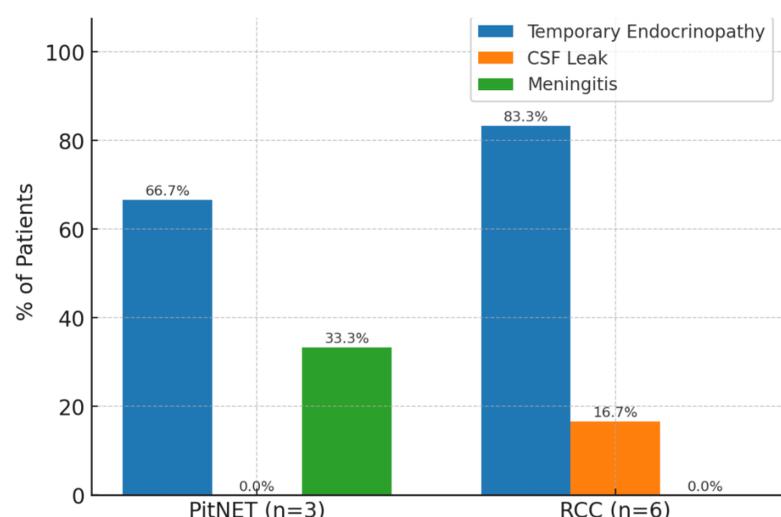


Figure 4: Postoperative Complications in non-functional sellar lesions



Discussion/Conclusion

PitNETs and RCCs are rare in the pediatric population and display distinct endocrinologic and clinical outcomes as compared to more morbid pathology, such as craniopharyngioma. Endoscopic endonasal surgery is safe and should be considered as first line therapy, especially for functional PitNETs and nonfunctional PitNETs/RCCs with mass effect on the optic chiasm in centers with experienced multidisciplinary skull base teams.

References

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