Do small pituitary lesions in pediatric patients need neurosurgical monitoring?

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Disclosures

We have no conflicts of interest or disclosures to report per AANS guidelines.

Introduction

- Pituitary lesions are defined as benign neoplasms of the pituitary gland, and are a common finding in brain imaging
- In pediatric populations, pituitary lesions are most commonly craniopharyngiomas, and only approximately 3% are adenomas
- Management for these lesions is typically to operate if there are symptoms of mass effect, and to medically manage any hormonal imbalances
- There is no current guideline for the neurosurgical management of small pituitary lesions in pediatric patients

Methods

Clinical case series of pediatric patients referred to neurosurgery clinic for evaluation of pituitary mass

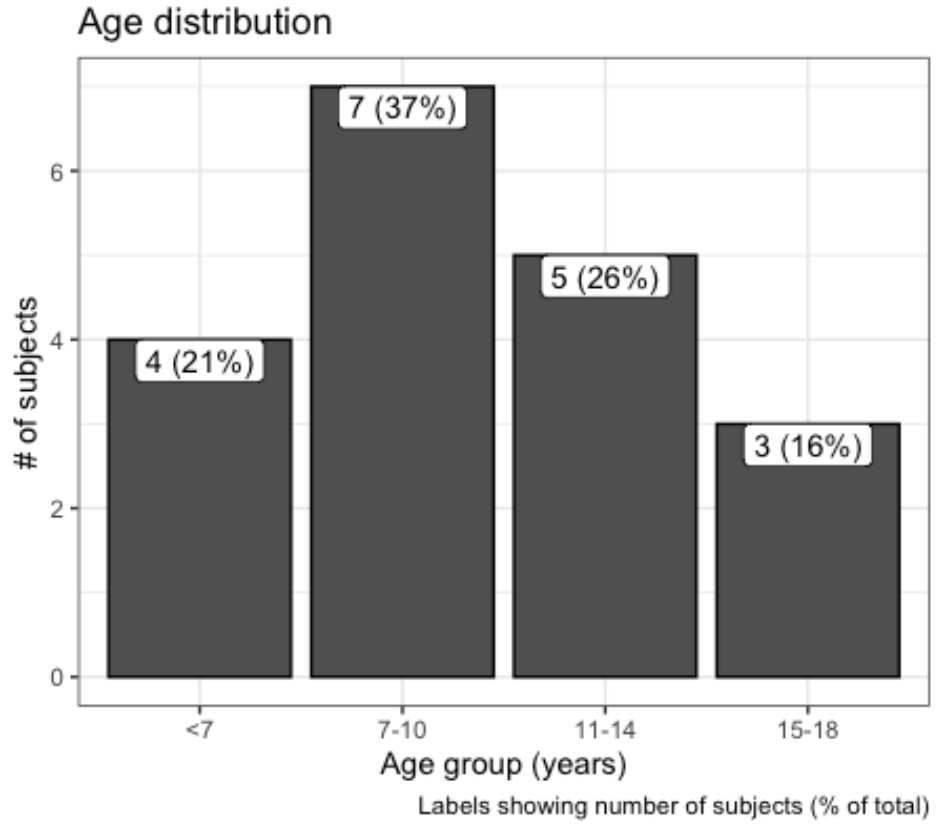
- Demographic data
- Initial reason for referral
  - Response to medical treatment
  - Development of new symptoms
- Initial MRI findings
  - Changes on subsequent MRIs
- Total number of MRIs, visits to neurosurgery, and date of last follow up

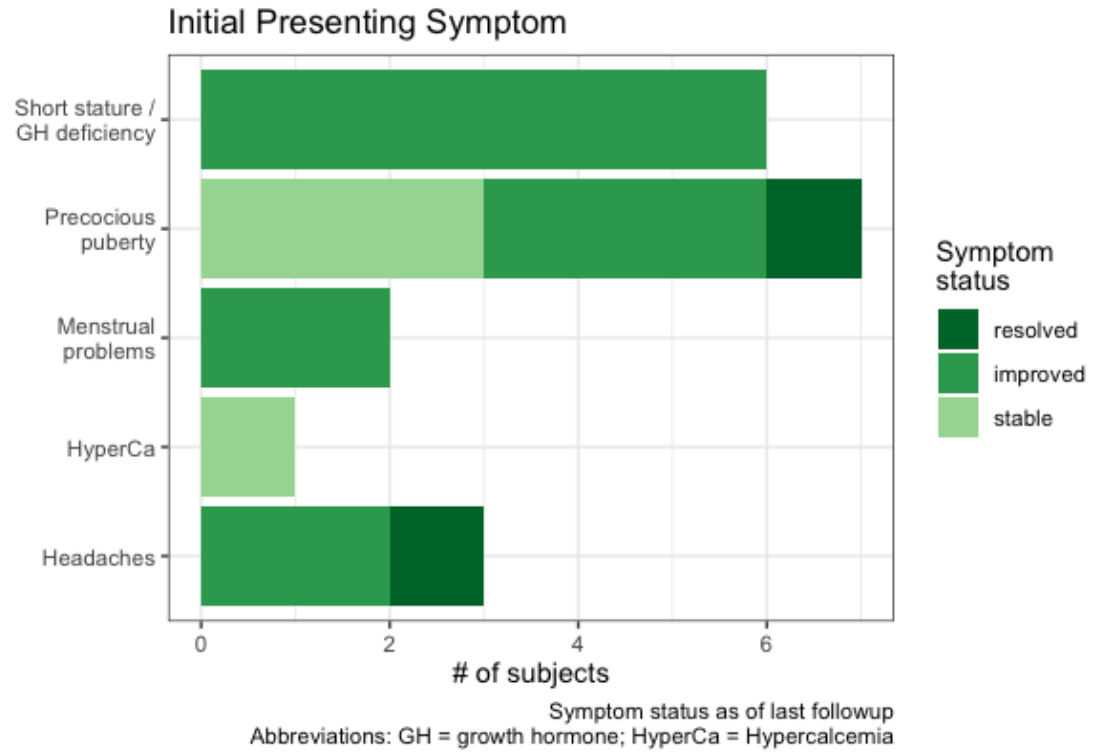
Inclusion

- Pediatric patients seen in outpatient clinic by single neurosurgeon (AM)
  - Seen at least once during time period March ‘16 to March ‘19
- With ICD-10 code(s):
  - D35.2 (benign neoplasm of pituitary gland)
  - E30.1 (precocious puberty)
  - E22.1 (hyperprolactinemia)

Exclusion

- No MRIs / reports available in EMR
  - 4 excluded
- MRI lacking pituitary mass
  - 1 excluded





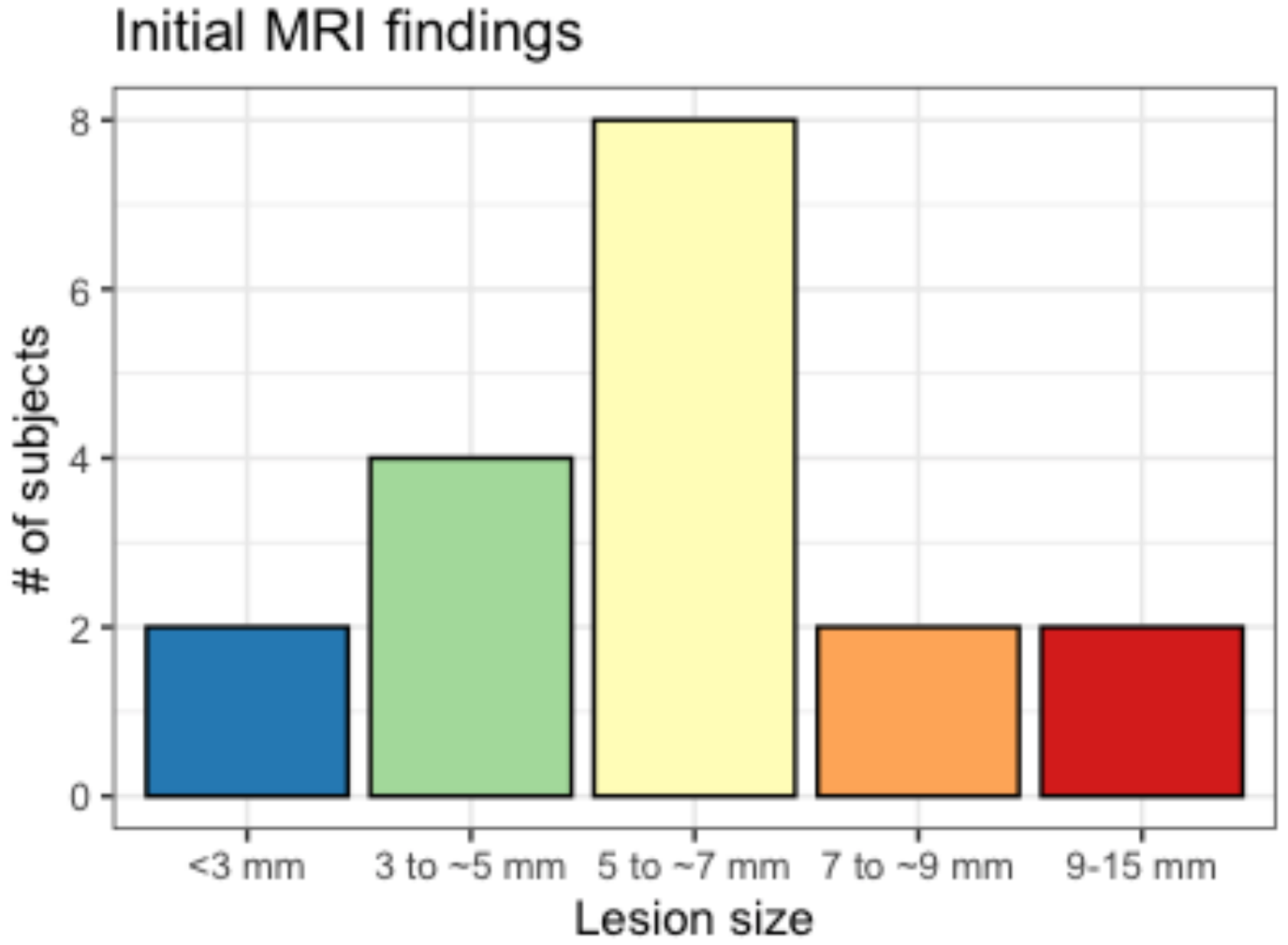
Descriptive statistics

19 patients were examined in our final review, the majority being female (17/19)

Imaging findings

- On follow up MRIs, 65% of lesions were unchanged, 24% improved, and 12% worsened

- There was no statistically significant relationship between changes of the lesion on imaging and:
  - Improvement of initial symptoms
  - Development of additional symptoms



Results

- Across a total of 55 patient-years of follow-up, no patients developed new/worsening symptoms attributed to their pituitary lesions
  - 2 patients developed headaches, which were attributed to migraines

- There were a total of **85 visits to neurosurgery clinic** and **64 MRIs** among our 19 patients studied
  - The median patient had 4 visits to neurosurgery across 1.5 years
  - The median patient had 3 MRIs across 1.9 years

Discussion

- Though the sample size was small, the data suggests that sub centimeter pediatric pituitary lesions are unlikely to develop into pathology requiring surgical intervention
- MRIs can be difficult to schedule in a timely manner, and they are a very expensive imaging modality
- Pediatric neurosurgeons are limited in terms of availability for clinical follow up, and this study indicates that these patients may not need chronic follow up

Summary Points

- Pediatric patients with pituitary adenomas are currently being monitored in accordance with adult guidelines
- This study indicates that the continued neurosurgical monitoring may not be necessary, as the sub-centimeter lesions did not require further neurosurgical intervention
- This study further raises the need for additional evaluation of pituitary lesions in pediatric populations