

Does Craniosynostosis Affect Orbital Volume in Children with Graves' Disease?

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INTRODUCTION

Graves' Disease (GD)

- Most common cause of hyperthyroidism
- Graves' ophthalmopathy is present in 30% of patients with GD

Case:

- 5-year-old with history of GD who failed medical treatment
- Consulted for possible orbital decompression
- CT findings: pansynostosis + signs of elevated ICP
- Overall impression: **phenotypically similar to Crouzon syndrome**

Hypotheses

1. Higher incidence of craniosynostosis in pediatric GD
2. Early suture fusion reduces orbital volume

METHODS

Retrospective Review

GD group:

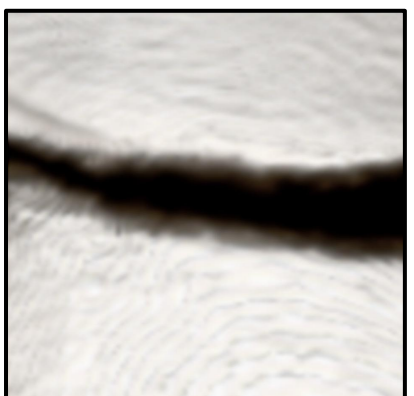
<18 years old
+ head CT

vs.

Control group:

age-, sex-,
race-matched
+ head CT

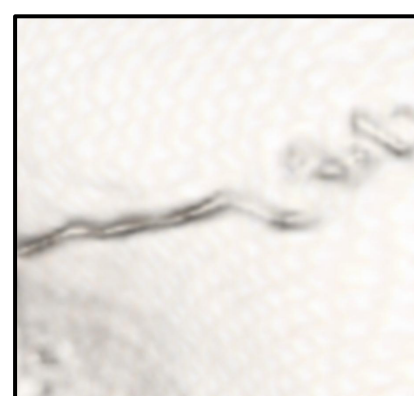
Suture Fusion Grading



Grade 1



Grade 2



Grade 3



Grade 4



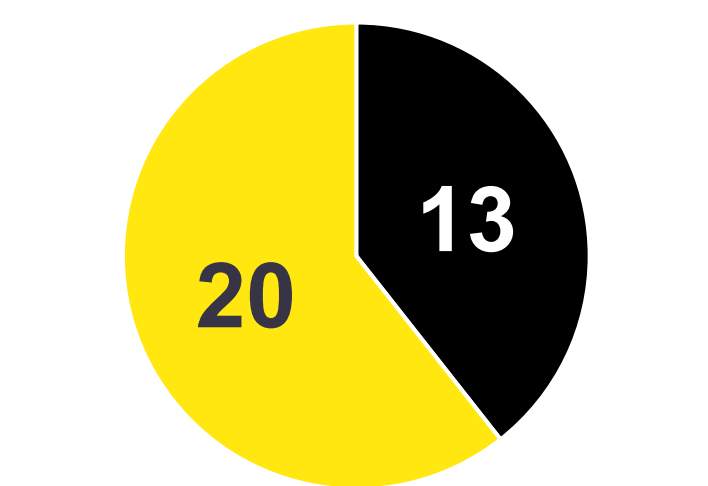
Grade 5

Volumetric Analysis

- Orbital volume
- Sphenoid Volume

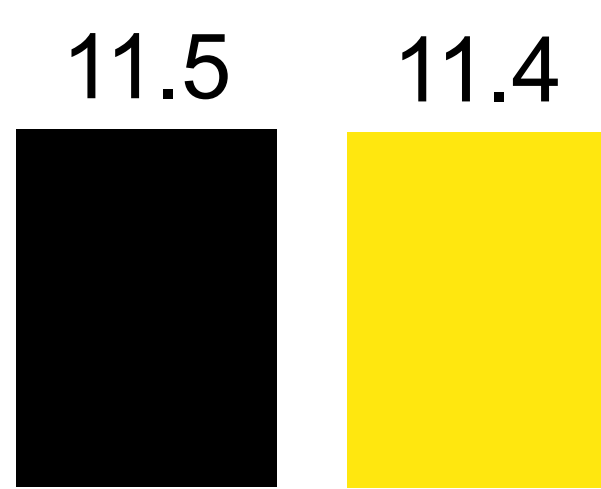
RESULTS

33 Patients Included

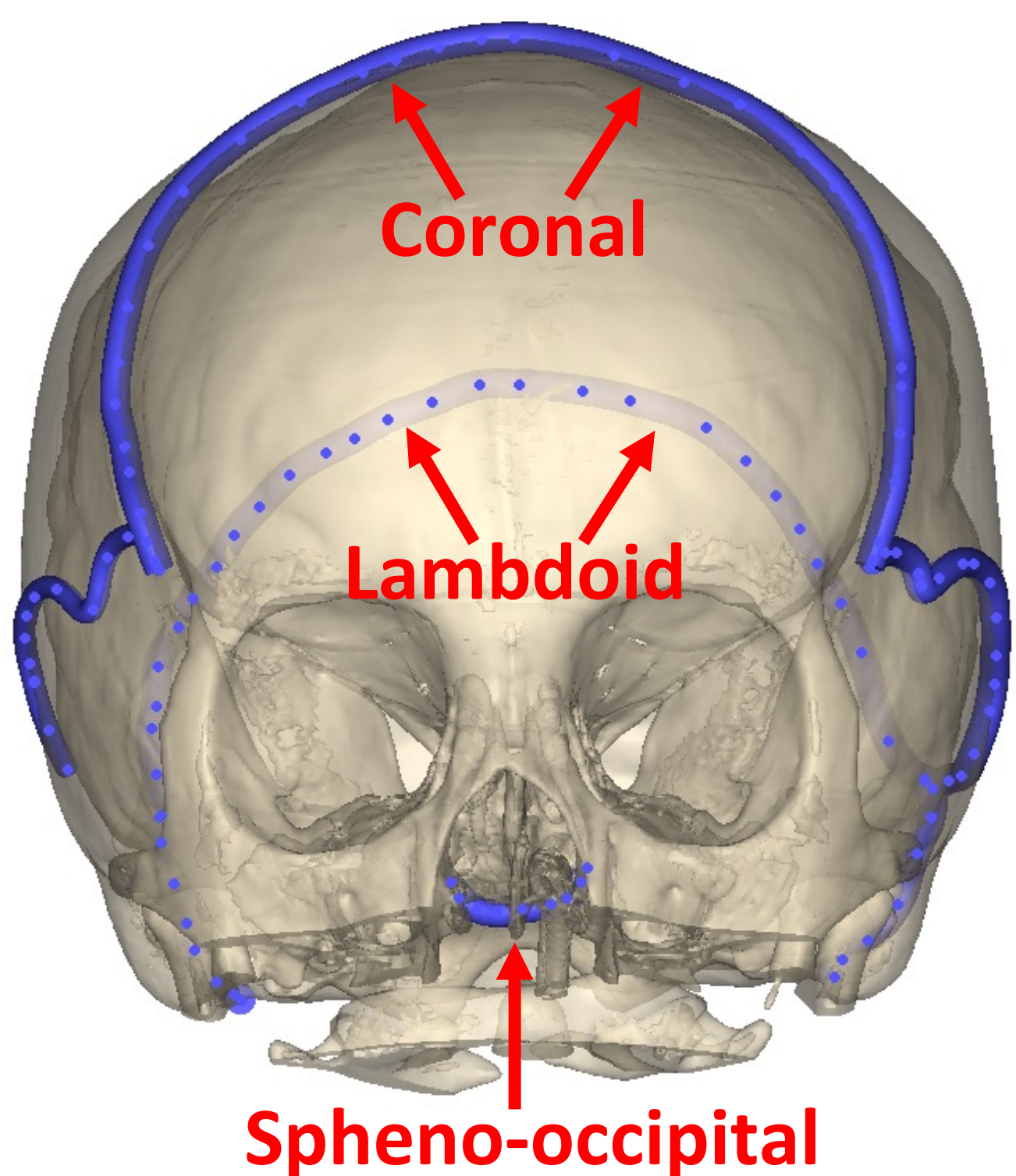


■ GD ■ Controls

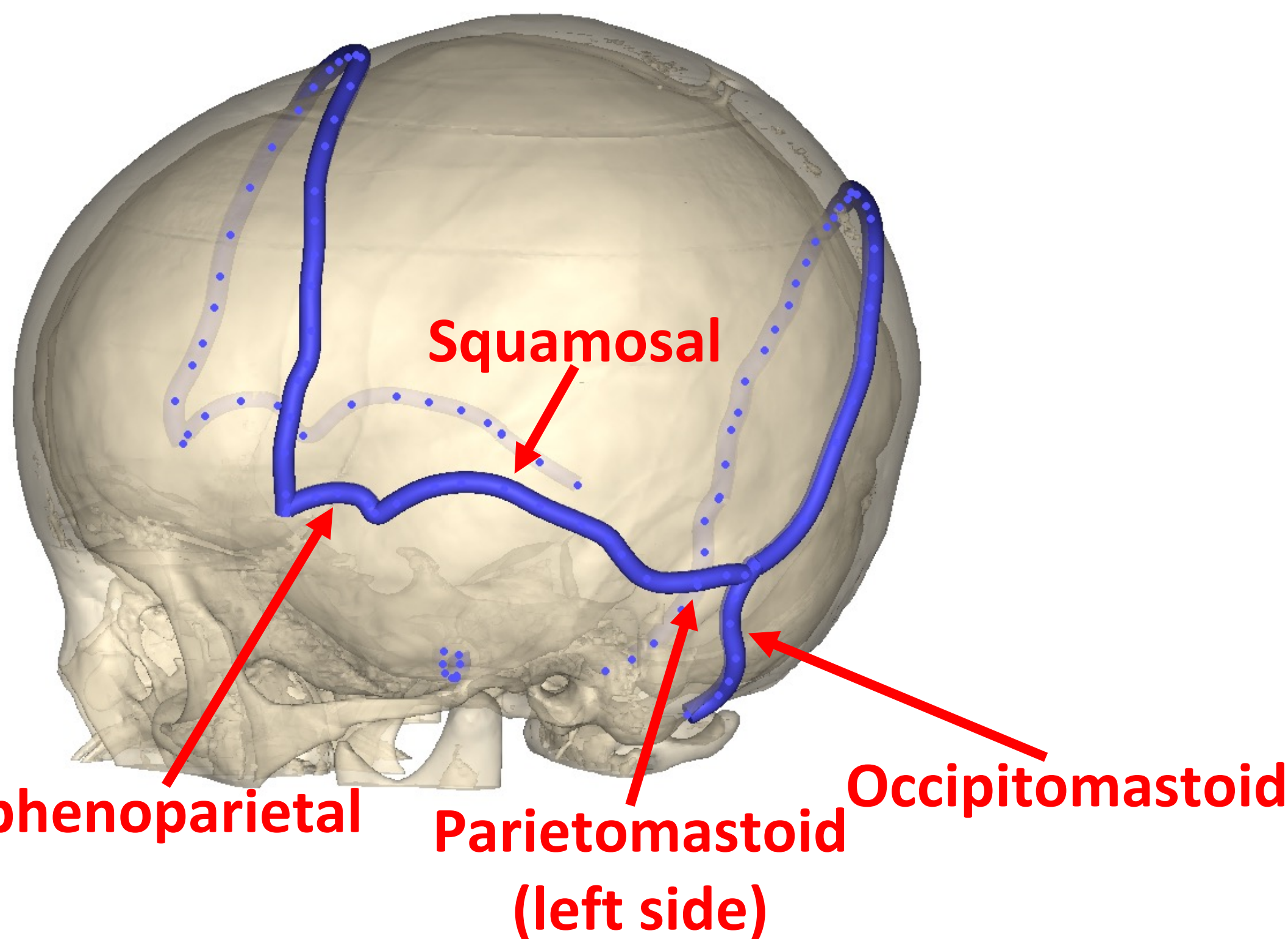
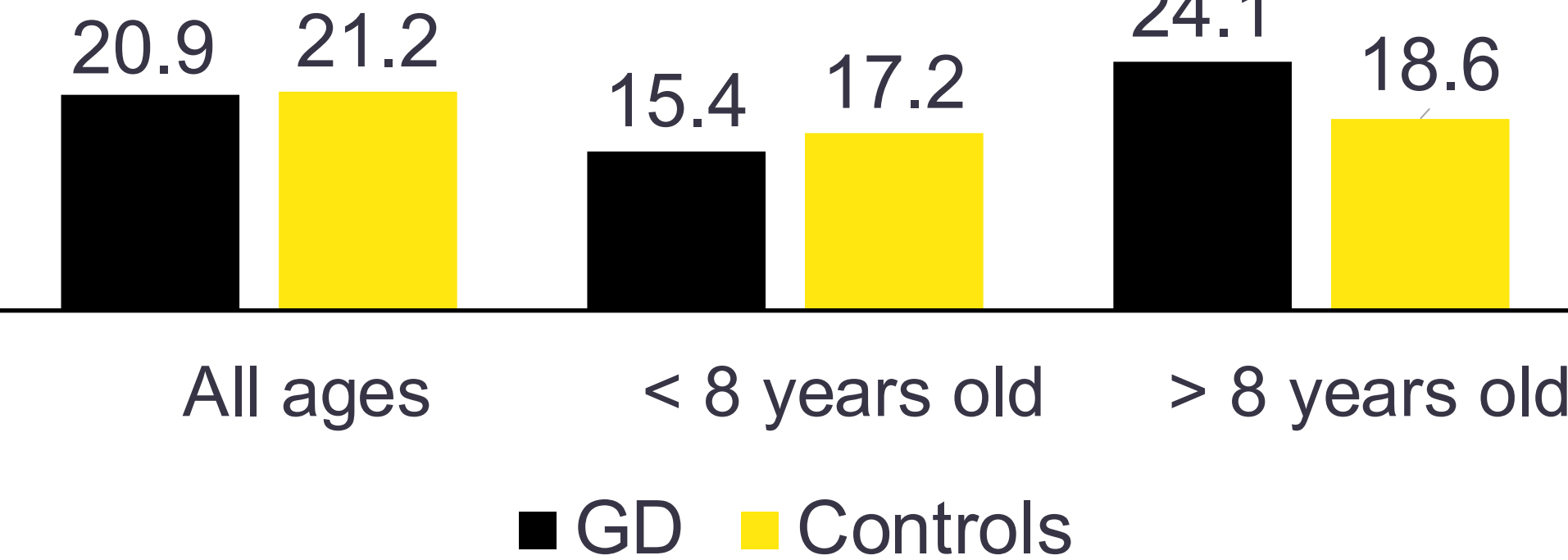
Age at CT (years)



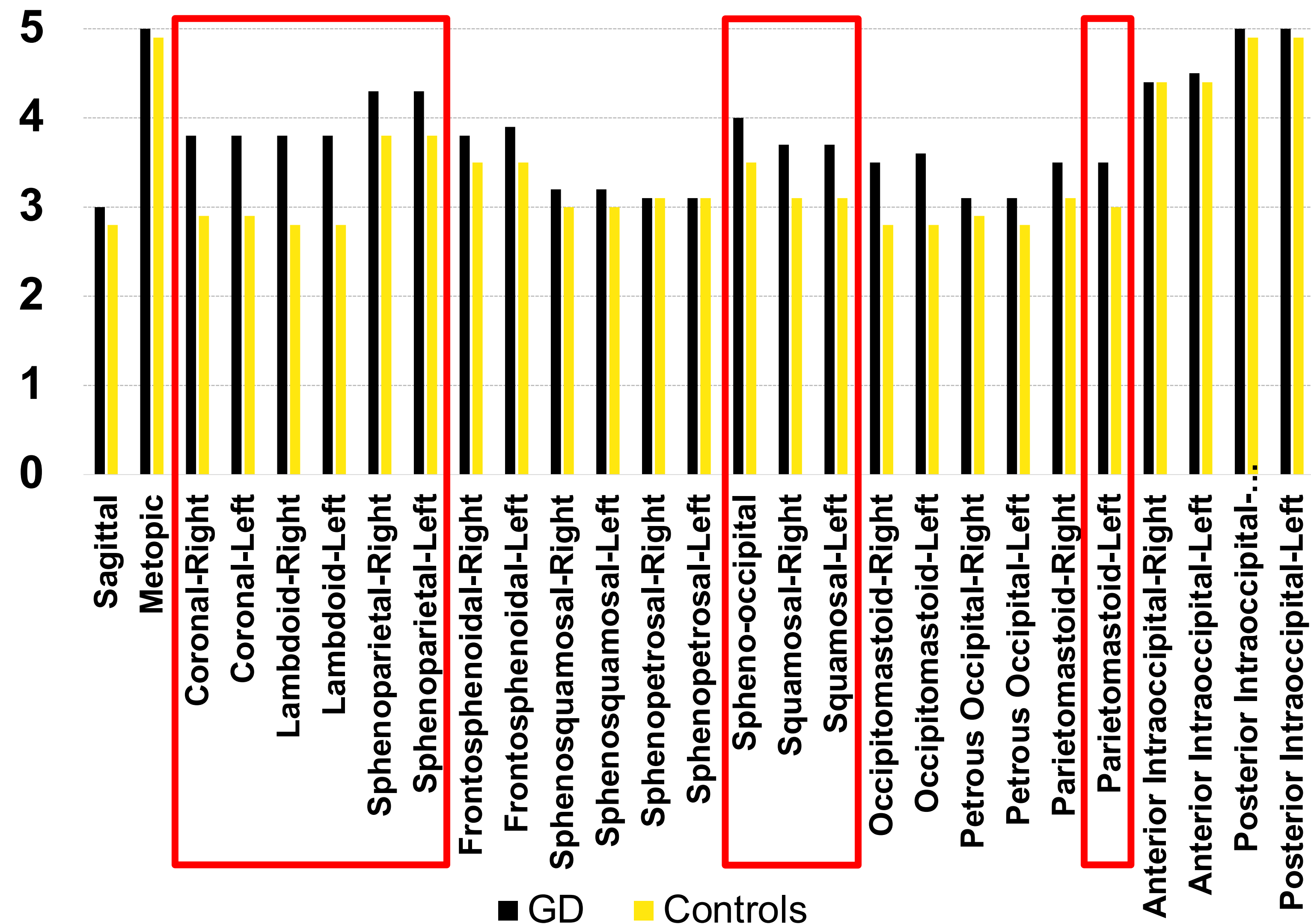
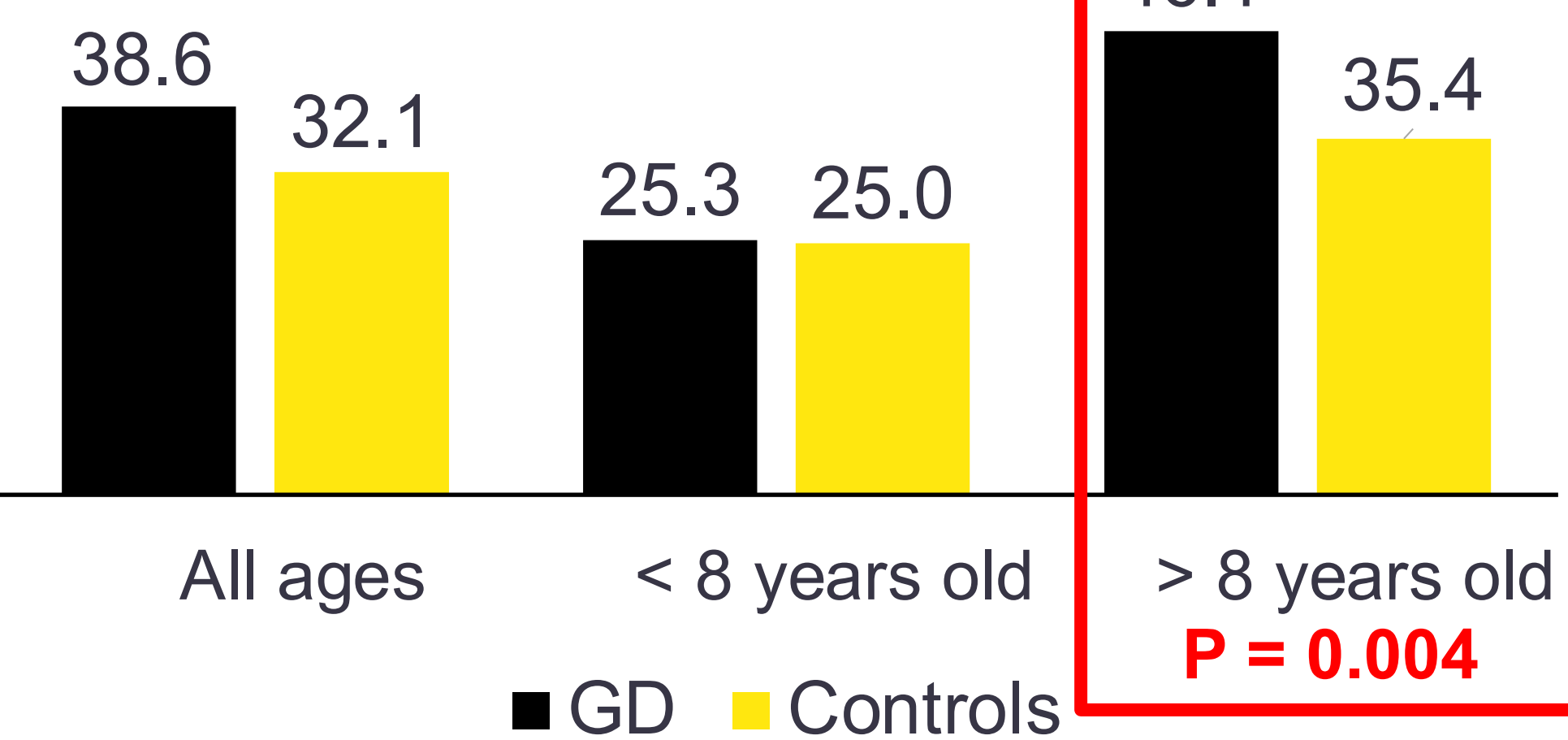
■ GD ■ Controls



Orbital Volume (cm³)



Sphenoid Volume (cm³)



CONCLUSIONS

- Early-onset GD is associated with a higher incidence of craniosynostosis
 - Potential increase in intracranial pressure
 - Frontofacial advancement could offer therapeutic benefits
- Orbital volume not affected
- Sphenoid volume increased in older children

REFERENCES

