

Fetal phenotype of Rubinstein-Taybi syndrome caused by EP300 mutations

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Objective

This study aims to delineate the prenatal ultrasound characteristics of four cases of Rubinstein-Taybi syndrome type 2 (RSTS2) and explore potential associations with this condition as detected through prenatal ultrasound.

Results

All four fetuses were found to have previously unreported EP300 variants, which were absent from ClinVar and the Human Gene Mutation Database (HGMD). The prenatal ultrasound findings were diverse, two fetuses exhibited growth parameters below minus two standard deviations (M-2SD) in the second trimester. One fetus showed an abnormal foot posture and thickened plantar skin, another was found to have exencephaly in the first trimester, and one case presented with fetal rhabdomyoma.

Methods

Whole exome sequencing (WES) and Sanger sequencing were conducted on four fetuses diagnosed with RSTS2. Prenatal ultrasound data were systematically collected and analyzed.

Conclusion

In this study, the prenatal ultrasound phenotypes associated with EP300 variants may add to the phenotypic profile of RSTS2 and could serve as a reference for prenatal diagnosis and counseling.

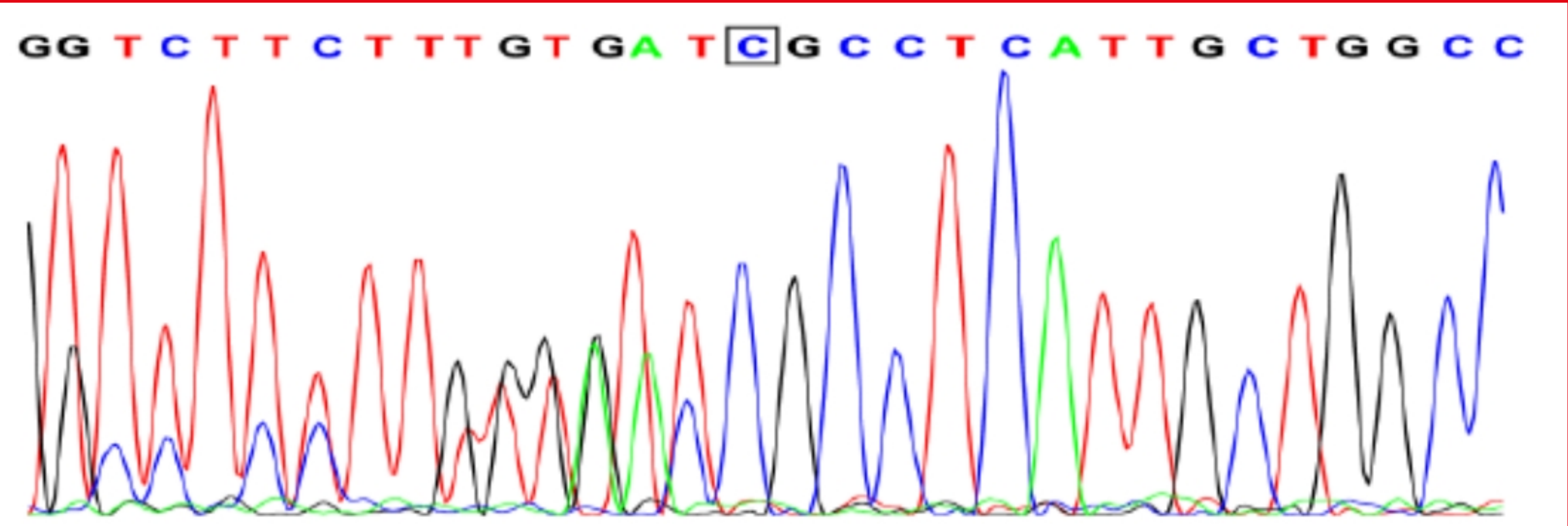


Figure 1 Sanger sequencing chromatogram of the fetus in Case 1

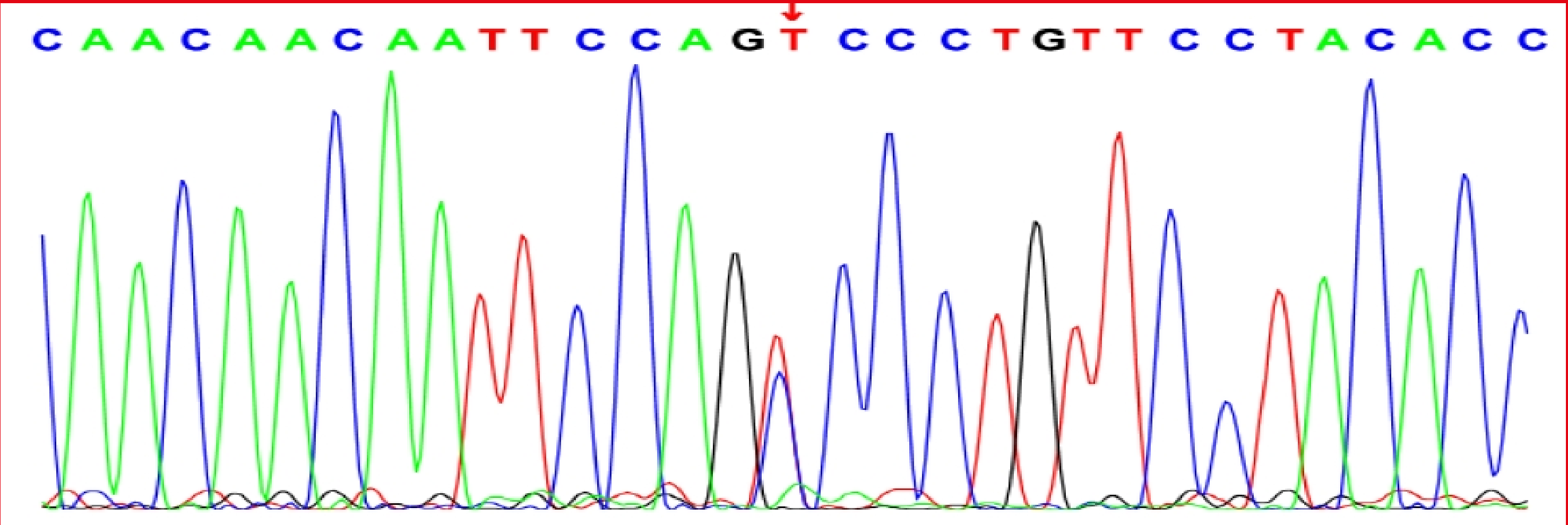


Figure 2 Sanger sequencing chromatogram of the fetus in Case 4

Table 1 Genetic Diagnosis data of 4 case

Case	Position	Nucleotide change	Amino acid change	Variant type	Pathogenic assessments
1	chr22:41572266	c.4795delC	p.Arg1599fs*25	frameshift	Pathogenic
2	chr22:41574531	c.6816delT	p.Val2273Phefs*6	frameshift	Likely pathogenic
3	chr22:41523695	c.1111A>G	p.Thr371Ala	missense	Likely pathogenic
4	chr22:41545967	c.2582C>T	p.Ala861Val	missense	Uncertain Significance

