

Central precocious puberty in a 2 year-old with no sinister cause.

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Background: The causes of most cases in girls with central precocious puberty is idiopathic, and tend to be older compared with neurogenic causes. When confronted with a very young child with sexual precocity, full endocrine work up is necessary and there is no doubt for the need to treat.

Case: SG presented at the age of 2.6 years in 2014 with thelarche and pubarche for one month. As her mother is tall (175cm, 97th centile), she was concerned that her child had grown more rapidly in the last 7 months. There was no significant family history. Birth weight was 2.745 kg following elective caesarian section at 38 weeks gestation for pre-eclampsia. Growth tracked along the 25th centile for weight in the first year, and 91st centile for height. On examination, she was in A1 B2 P2. Treatment with GnRH analogue as Triptorelin was started within days of her blood test results. She tolerated her induction treatment with close monitoring of height velocity clinical symptoms. Decapeptyl was administered at short intervals of 8 weekly due to a detectable LH. She appeared happier with less temper tantrums and has stayed at B2.

LHRH stimulation test (2014)

	Time 0	Time 20 min	Time 60 min
LH (IU/L)	2.65	113.91	77.47
FSH (IU/L)	4.12	18.84	18.64
17B oestradiol (pmol/L)	<73		

Endocrine profile:

2014

Prolactin 156 mU/L (0-566) TSH 1.63 mU/L (0.3-5.6) 17OHP 2 nmol/L androstenedione 1.9 nmol/L DHEA-S 0.5 umol/L testosterone <0.35 nmol/L IGF1 36.5 nmol/L (2.1 - 23.1). Tumour markers (βHCG, AFP) were negative. Urine steroid profile normal. Karyotype 46 XX.

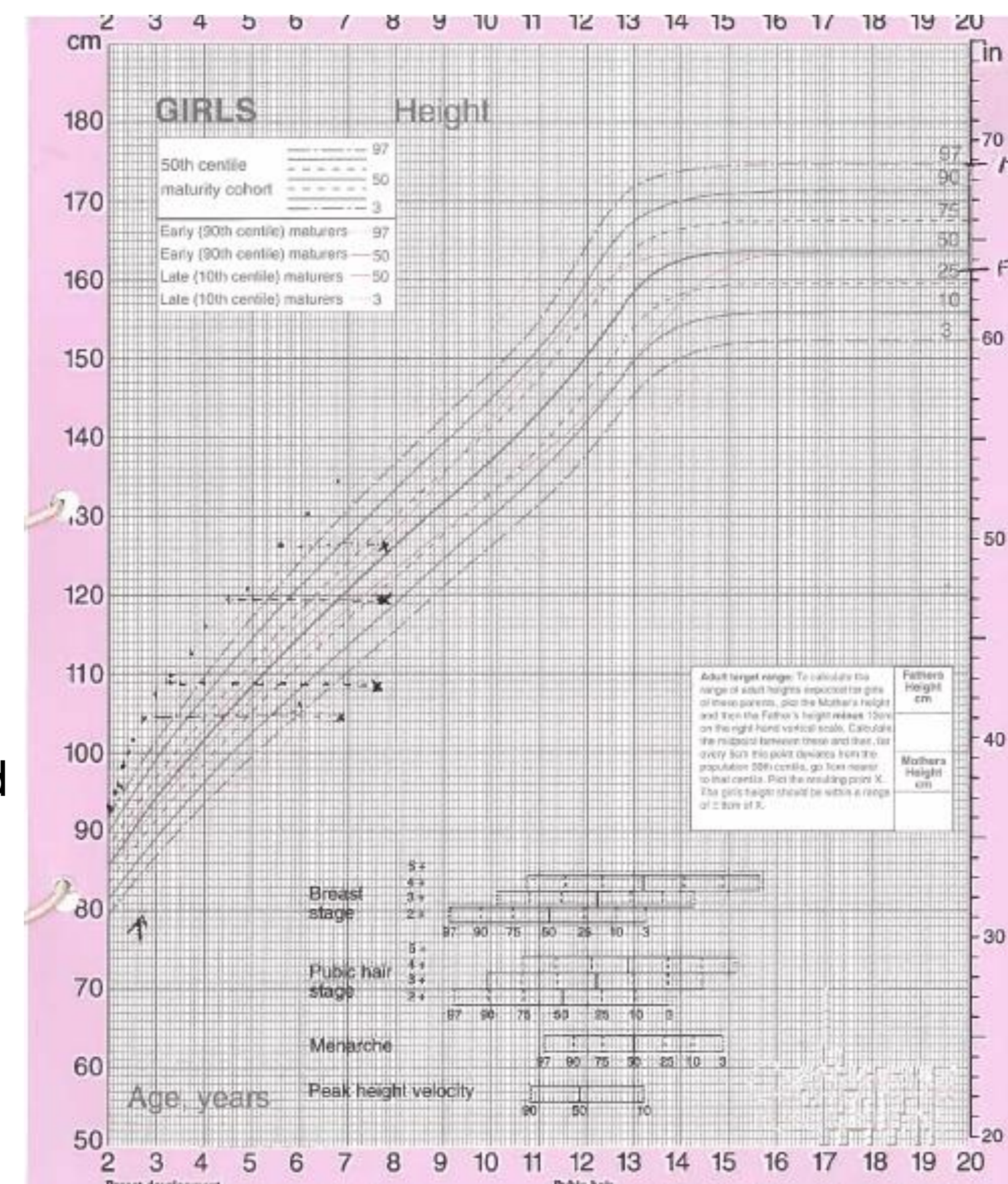
2016

LH 0.8 U/L FSH 1.8 U/L

2018

LHRH stimulation test at 8th week - LH peak 1.83 U/L, FSH 1.76 U/L, 17βoestradiol < 73 pmol/L.

Imaging: Bone age 6 yrs 10 mths (CA 2.6 yrs). Pituitary MRI normal. Pelvic ultrasound - tiny ovarian follicles bilateral (0.6, 0.7 ml volumes), uterus 36x12x21 mm, 1.2mm endometrium. BA 7 yrs 10 mths (CA 5.6 yrs), 10 yrs (CA 7 yrs).



Growth chart

Auxology

	2014	2015	2016	2017	2018	2019
Height cm (Ht SDS)	104.7 (+3.84)	109.9 (+3.7)	119.8(+3.34)	126.4(+3.13)	131.3 (+2.94)	134.4 (+2.92)
Weight kg (BMI SDS)	17.6 (-0.04)	19.3 (+0.07)	21.7 (-0.28)	24.5 (-0.07)	26.2 (-0.21)	29.1 (+0.27)

Conclusion: Growth remains rapid in this child with a tall mother. It is unusual to see a case so young with no neurogenic cause for her central precocious puberty. However, she appears to be responding well to treatment with reduction in bone age advancement (see growth chart).

References

- Precocious puberty: clinical and endocrine profile and factors indicating neurogenic precocity in Indian children. Bajpai A, Sharma J, Kabra M, Kumar Gupta A, Menon PS. J Pediatr Endocrinol Metab. 2002 Sep-Oct;15(8):1173-81.
- Causes, diagnosis, and treatment of central precocious puberty. Latronico AC, Brito VN, Carel JC. Lancet Diabetes Endocrinol. 2016 Mar;4(3):265-274. doi: 10.1016/S2213-8587(15)00380-0. Epub 2016 Feb 4.

The author has nothing to disclose