

## Isolated Premature Menarche in a 1 Year 9 Months Old Girl

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### Abstract

Cyclical vaginal bleeding in the absence of other signs of secondary sexual development is rare [1]. Isolated menarche begins with periodic vaginal bleeding between 1 and 9 years of age without any other signs of secondary sexual development. We report a case of 1 year 9 month old girl presented with cyclical vaginal bleeding since the age of 2.5 months in the absence of other secondary sexual characteristics. In premature menarche a partial and transient activation of hypothalamo-pituitary axis could be present. Premature menarche seems to be a benign and self-limiting condition.

**Keywords:** Cyclical Vaginal Bleeding; Premature Menarche; Isolated

### Introduction

Cyclical vaginal bleeding in the absence of other signs of secondary sexual development is rare [1]. Isolated menarche begins with periodic vaginal bleeding between 1 and 9 years of age without any other signs of secondary sexual development. The bleeding can recur for 1 to 6 years and then cease. At the normal age of puberty (3 to 11 years later), secondary sexual development and menses ensue and follow a normal pattern, as does stature. Fertility was later demonstrated after a normal onset of puberty in women with this variant of pubertal development [2].

We are describing a 1 year 9 month old girl (Figure 1) seen at Medical College, Kolkata because of recurrent menstrual bleeding without other stigmata of precocious puberty.





**Figure 1:** 1 year 9 month old girl presenting cyclical vaginal bleeding in absence of other signs of secondary sexual development.

### Case Report

A 1 year 9 month old girl presented with cyclical vaginal bleeding since the age of 2.5 months in the absence of other secondary sexual characteristics.

This girl is born of non-consanguineous marriage with unremarkable antenatal history, delivered at 8 months 10 days of gestation by Lower segment Cesarean section (LSCS) with a birth weight of 2.1 kilograms, cried immediately after birth. Mother noticed 1<sup>st</sup> episode of vaginal bleeding at the age of 2.5 months, 2<sup>nd</sup> at 5.5 months and there after at the interval of 1 to 1.5 months. It is not associated with thelarche, pubarche and accelerated growth spurt. The developmental milestones are within normal limits. There is no history of (h/o) trauma or foreign body in the external genitalia, no h/o exposure to external estrogen, no h/o headache, convulsion, unconsciousness or any history suggestive of meningitis, no h/o cranial irradiation, polyuria and polydipsia.

### On Examination

Height: 77 cm (10 - 25<sup>th</sup> percentile ), Ht. Standard Deviation s- (-) 0.77, Wt: 09 Kgs.

Target height: 151.8 cm, Target Height: SDS-(-1.3)

Sexual Maturity Ratings SMR-Breast growth stage 1, Pubic hair growth stage 1, vaginal mucosa dull, no clitoromegaly. No goitre. No cafe au lait spot.

### Investigations

USG Lower Abdomen and pelvis: Uterus: 3.2/0.6/1.3 cm = 1.43cc. Right Ovary: 0.24cc, Left Ovary: not visualised.

X-Ray Lt. Wrist Joint. Shows bone age equivalent to chronological age, by comparing with Greulich pyle atlas.

Serum Free T4 -1.21 ng/dl, Thyroid Stimulating Hormone (TSH): 1.034  $\mu$ IU/ml.

Follicle-Stimulating Hormone FSH: 11.85 mIU/ml, luteinizing hormone (LH): 0.26 mIU/ml, Estradiol: < 10 pg/ml.

Gonadotropin-releasing hormone GnRH stimulation 60 minutes. After 100  $\mu$ g Triptorelin shows LH value 2.34 mIU/ml.

Magnetic resonance imaging MRI of Hypothalamo pituitary region reveals no obvious abnormality (Figure 2a,2b).



**Figure 2a:** Magnetic resonance imaging MRI of Hypothalamo pituitary region reveals no obvious abnormality.



**Figure 2b:** Magnetic resonance imaging MRI of Hypothalamo pituitary region reveals no obvious abnormality.

## Discussion

This girl presented with Premature isolated menarche without any other stigmata of precocious puberty and with normal findings of MRI of Hypothalamo pituitary region. GnRH stimulation test suggests that it is gonadotropin independent precocious puberty.

Cyclic vaginal bleeding in the absence of other signs of secondary sexual development was described in 4 girls by Heller, *et al.* and given the name of premature menarche. In this condition girls begin periodic vaginal bleeding at age 1 to 9 years. Etiology is uncertain but may be due to premature activation of the hypothalamic-pituitary-ovarian axis resulting in FSH secretion and increased sensitivity of endometrium to estradiol level, which are too low to produce breast development<sup>1</sup>. We have no good explanation for the early menstruation in our patient, but believe that it may be due to increased sensitivity of the endometrium to circulating levels of oestrogens which are too low to produce breast development. There is a predominance of FSH secretion but the gonadotropin secretion is not characteristic of true premature puberty [2]. D Murram, *et al.* obtained follow up information from 12 women aged 16 - 34 years who had been seen previously because of premature isolated menarche starting between ages 9 months and 9 years. All the women reported normal regular menses and fertility was normal in 6 women who had married [3].

## Conclusion

In premature menarche a partial and transient activation of hypothalamo-pituitary axis could be present. Premature menarche seems to be a benign and self-limiting condition.

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