

Peripheral Precocious Puberty



PLAY PICMONIC

Characteristics

Secondary Sex Characteristics before 8 Years (Girls) or 9 Years (Boys)

(2) Tutu Sex-symbol Less-than (8) Ball or (9) Lives-cat

Precocious puberty is defined as an early onset of puberty. Precocious puberty is diagnosed in girls if signs of puberty occur before they are 8 years old and in boys if signs appear before 9 years of age.

Breast Development (Girls) or Testicular Enlargement (Boys)

Breast Development or Testicular Enlargement

The onset of puberty is defined by the appearance of secondary sexual characteristics, which may include breast development in girls and testicular and penile enlargement in boys.

GnRH Independent

Gonad-gopher Independence-protest

Peripheral precocious puberty is characterized by a precocious development of secondary sexual characteristics independent from the GnRH pulsatile secretion. This aspect of peripheral precocious puberty differs from central precocious puberty, which occurs due to excessive GnRH production.

Etiologies

Congenital Adrenal Hyperplasia

Present-at-birth Adrenal-hat Hiker-plates

Untreated congenital adrenal hyperplasia patients can experience peripheral precocious puberty. Sex hormone levels can be found to vary depending on the adrenal enzyme block.

Exogenous Sex Steroids

Exit Steroid-stairs Sex-symbol

Exogenous sex steroids can cause excess sex hormones, resulting in peripheral precocious puberty. Feminization can occur due to the use of estrogen preparations. Virilization in both sexes can occur due to topical androgens.

Granulosa Cell Tumor

Granny-lotus with Tumor

Granulosa cell tumor is a slow-growing ovarian tumor that produces high estrogen. This excess estrogen can result in peripheral precocious puberty. The patient can experience breast enlargement and menstrual irregularities.

Non-Germ Cell Tumor

Non-germy Ovary

Non-germ cell tumor is one of the causes of peripheral precocious puberty.

Diagnostic Features

GnRH Stimulation Test

[Gonad-gopher Stim-mule](#)

The GnRH stimulation test is the gold standard for diagnosing precocious puberty. This test determines the hypothalamic-pituitary axis's reactivity to the presence of increased gonadotropin (LH and FSH) levels after injection of GnRH.

No Increase in LH

[Cross-sign of Up-arrow Luge](#)

Basal LH concentration, measured ideally in the morning, will be a good initial screening test to differentiate between central and peripheral precocious puberty. Peripheral precocious puberty will show no increased LH. The concentration of LH in the prepubertal range will be <0.2 mIU/mL. It can be diagnosed as a peripheral precocious puberty or a benign pubertal variant (e.g., premature thelarche).

Bone Age

[Bone Birthday-cake \(Age\)](#)

Bone age, utilizing radiography of the hand and wrist, can be used to determine the likelihood of precocious puberty as well as its progression. Diagnosis can be made if bone age is 2 years older relative to the child's age.

Hormone Levels

[Harmonica](#)

Hormone levels can help in diagnosing peripheral precocious puberty. FSH concentrations are found to be low in patients. High estradiol or high testosterone concentration with suppression of gonadotropins can indicate peripheral precocious puberty.

Management

Treating Underlying Disorders

[Treating Disorders Under the Table](#)

If patients are found to have an underlying disorder that causes peripheral precocious puberty, treating the underlying disorder is the mainstay of treatment.