

Clinical case scenario

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Case scenario

- A 7-year-old female patient, came to clinic with history of breast buds development noticed by her mother one month ago.
- What is definition of precocious puberty?

Secondary sexual development more than 2.5 standard deviations earlier than the median or mean age. For female before the age of 8 years and males before age of 9 years.

- What are common causes of precocious puberty?

Gonadotropin-dependent precocious puberty (GDPP) - Causes

- Idiopathic
- Central nervous system (CNS) tumors
- CNS infection
- Head trauma
- Iatrogenic
 - Radiation
 - Chemotherapy
 - Surgical

- Malformations of CNS
 - Arachnoid or suprasellar cysts
 - Septo-optic dysplasia
 - Hydrocephalus
- Genetic

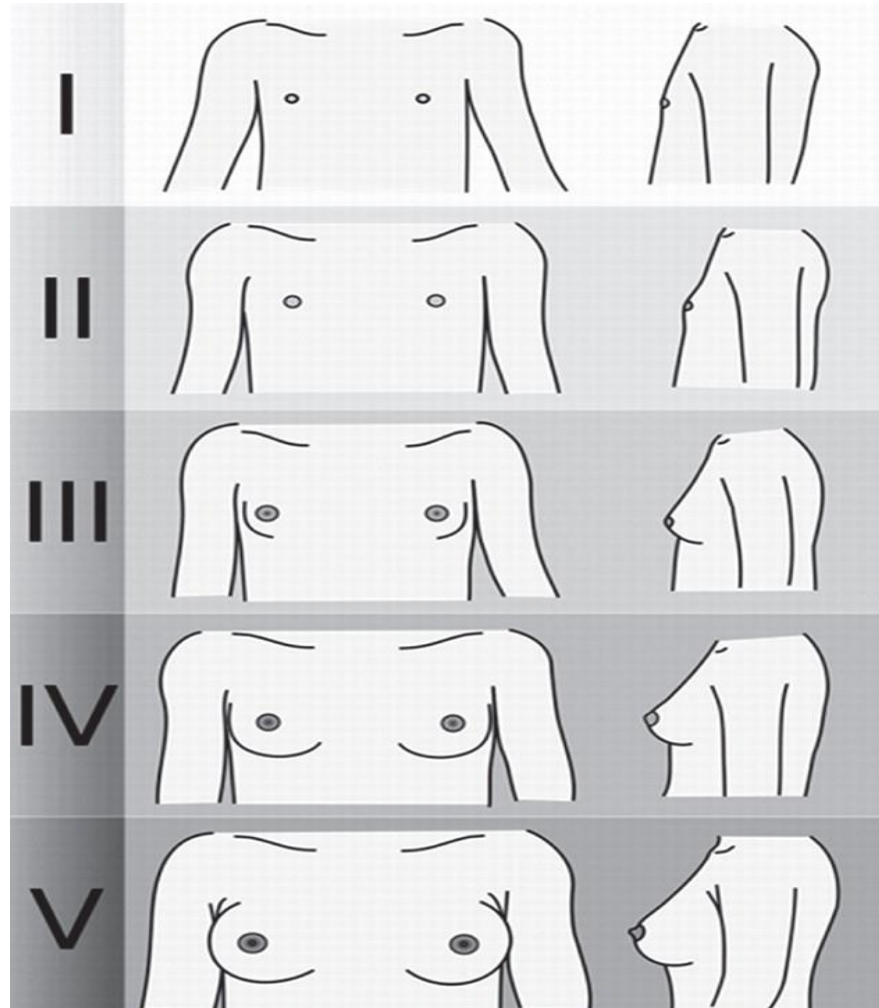
Gonadotropin-independent precocious puberty (GIPP)

- CAH
- Testosterone/estrogen-producing tumors
- Ovarian cysts
- McCune-Albright syndrome
- Familial male–limited precocious puberty
- hCG-producing tumors
- Exogenous exposure to androgen/estrogen
- Hypothyroidism

- What are the most important points you should focus on during your comprehensive physical exam for this patient?

1. Tanner Staging (see next 2 slides).
2. Growth parameters.
3. Neurological exam.

Tanner Staging- females



Stage I: prepubertal






Stage II: breast bud with elevation of breast and papilla; enlargement of areola

Stage III: further enlargement of breast and areola; no separation of contour

Stage IV: areola and papilla form secondary mound above level of breast

Stage V: mature stage; projection of papilla only, related to recession of areola

Tanner Staging- males

Childhood	I		3 2.5
Early Puberty	II		4 2.5-3.2
Mid Puberty	III		10 3.3
Late Puberty	IV		16 4.1-4.5
Adulthood	V		25 4.5

Back to our case:

- She has in addition to breast development, pubic hair development.
- No symptoms or signs of neurological diseases.
- No skin changes.
- No report of acceleration of height by parents.
- Both of height and weight are on the 50th centile.
- Tanner stage :B (breast) 3, P (pubic hair) 2.

What are important investigations that should be done for this patient ?

1. Estradiol , FSH, LH (+/- GnRH stimulation test)
2. Thyroid function test
3. Left hand and wrist X ray for bone age determination.

Investigations of our patient showed:

- Pubertal level of estradiol , FSH, LH.
- Bone age was 9.5 years (advanced bone age by 2.5 years).
- Hypothalamic pituitary MRI was consequently done for this patient and was normal.

- What is the management for this patient?

Management of gonadotropin dependent precocious puberty depends on:

- etiology
- Pace of sexual maturation
- Predicted adult height
- Psychosocial ?

GnRH agonist

- slows accelerated puberty and improves final height
- Treatment should be given until it appears that it is safe appropriate for puberty to proceed.

Thank You