Clinical scenario

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SCENARIO 1

A 12 year old boy with short stature .

How do you approach the problem?

History:

- When was this first noticed? (congenital vs acquired causes)
- Previous measurements (growth velocity)
- Detailed review of systems(chronic diseases, brain tumors, irradiation)
- Birth hx (gestational age, weight & length) (if it was small for gestational age)
- Neonatal hypoglycemia, prolonged jaundice (signs of neonatal hypopituitarism)
- Nutritional hx
- Parents heights and puberty (genetic and or constitutional short stature).
- Headache , visual disturbances (central causes of GH deficiency)

On examination

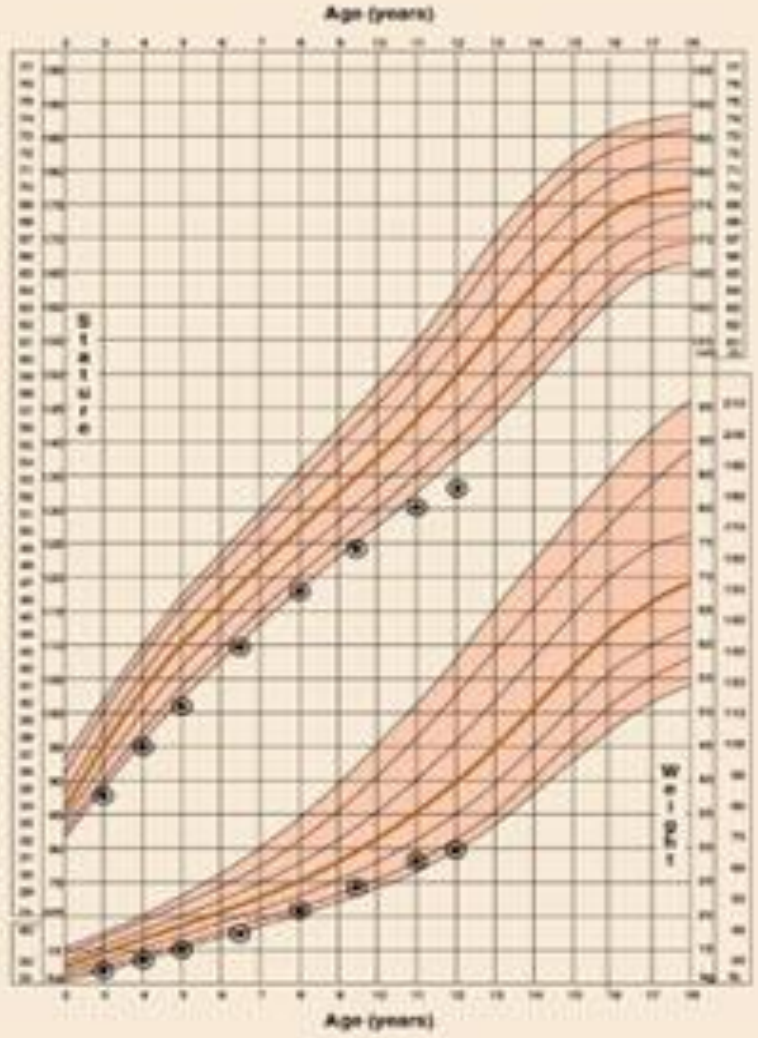
- Reliable measurements of ht and wt , Proper PLOTTING
- Proportionism (skeletal issues)
- Dysmorphism (syndromes vs GH deficient)
- Midline defects
- General exam
- Pubertal (Tanner)stage

Fig. 5. Images of a child (4 years of age, 61 cm tall and weighing 4.25 kg) with growth hormone deficiency. The images show frontal bossing, midfacial hypoplasia, a cherubic face and micrognathia. (Images shown with consent.)

Back to the patient

- The patient is a 12 year old male who was previously healthy, parents noticed he is the shortest in the class in the past year.
- Birth weight 3 kg , length 50 cm, no neonatal hypoglycemia and mild jaundice that resolved within 5 days.
- No chronic symptoms what so ever
- Was never admitted to the hospital

- Father is 175 cm, mom is 162 cm. Father was a late bloomer (continued to grow in the university) .
- Mid parental height 175+162+13/2 = 175+/- 8.5cm
- His physical exam is completely normal
- His height is below the 3rd centile and below his genetic target
- He is prepubertal


Age (years)
Stature
Age (years)

- What is your impression and how would you proceed?

- Constitutional delay of growth and puberty (CDGP)
- It is a diagnosis of exclusion, so we have to exclude pathological causes
- Also if you have unexplainable short stature or deceleration of growth, we should investigate.

- What labs will you order?

- Screening tests : cbc, kft, lft, free T4 TSH celiac screen , consider blood gas, IGF1+BP3
- Bone age

- If the screening tests do not yield a diagnosis and/ or we have a low IGF1 we proceed to :

- Dynamic (stimulation) testing for GH
- Karyotyping if female.
- MRI brain after diagnosing GH deficiency to look for a cause (e.g mass or congenital defects)

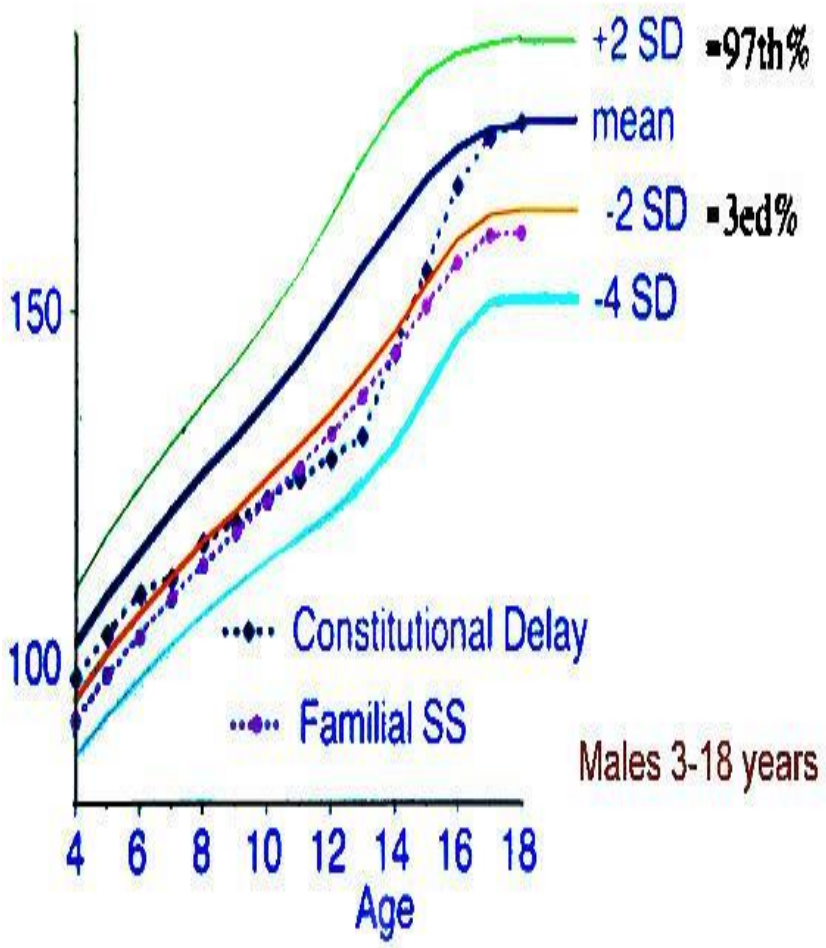
The patient

- All his labs came back normal
- His bone age is 10 years (delayed)
- HOW DO YOU COUNSEL THE FAMILY?

- The child has probably CDGP due to positive family history (father was a late bloomer), lack of puberty , normal physical exam, normal labs and delayed bone age.
- The family asks what is next?

- It is very important to follow this child in 4 to 6 months to monitor growth velocity and puberty progression until reaching his end height and puberty.
- There is the possibility of inducing puberty with a very low dose testosterone (this is usually given for older boys who still do not show signs of puberty when they are under stress because of their status lagging behind their peers).

- The family is asking for growth hormone treatment, what do you say?



- Children with CDGP will reach an end height that is appropriate for their target height but later than their peers without the need for growth hormone treatment.

THANK YOU