A Double Dose Of Triples

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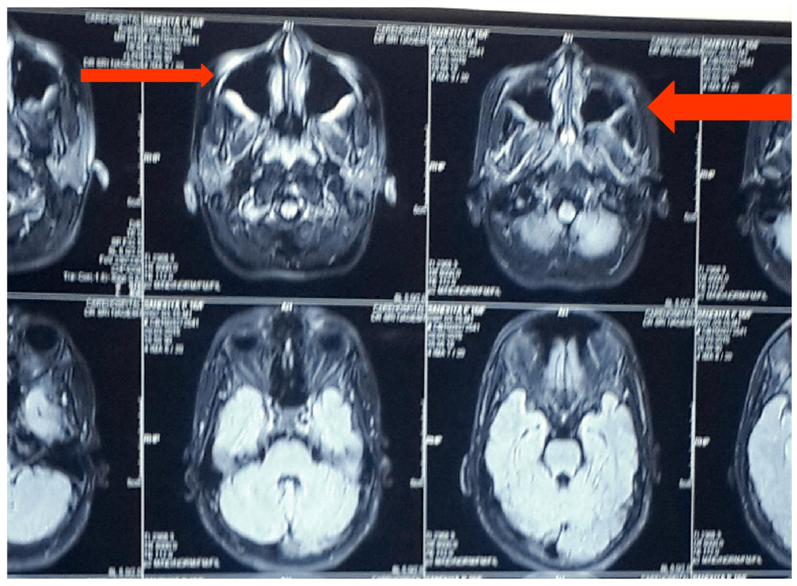
Adrenal disorders and delayed puberty are a not uncommon presentation in the Endocrine Out Patient Department. However, a child presenting with both disorders simultaneously is rather uncommon and requires extensive evaluation and out-of-the box thinking to reach a valid diagnosis. Here we report a girl who presented with both primary adrenal insufficiency and delayed puberty, who on subsequent evaluation was found to have **Allgrove's syndrome** and **Triple X Syndrome**, leading to this rare presentation.

14 year, 6 month old girl, presented to the endocrinology OP with:
H/o hyperpigmentation of face, lips and palms since the past 8 years.
H/O weakness of both upper and lower limbs since the past 2 years.
H/o pain in calves noticed since 2 years, gradually associated with walking difficulty and climbing stairs
On follow up with neurologist and being evaluated for sensory and motor neuropathy.
On follow up with gynecologist for delayed puberty.

Past History
H/O poor scholastic performance – developmental delay.
H/o occasional dysphagia and features s/o reflux esophagitis.
No H/O seizures in past.
No H/S/O anosmia
3rd degree consanguinity for 2 generations
No H/O similar problems in family.

Examination
Height – 148 cm -25th centile
Weight – 25 kg - <3rd centile
BP – 90/70 mm Hg supine
80/58 mm Hg standing
SMR –A1P1B1.
Pallor present. No goitre
Hyperpigmentation over face, lips, palms, buccal mucosa and gingivae
No Turner's phenotype.
Power decreased in all limbs- 4/5
Hypotonia
Sensory and Motor neuropathy
Ataxia
Amyotrophy
Dysautonomia.

Started on hydrocortisone and fludrocortisone
Thyroxine not replaced
Asked to review



TRIPLE A +TRIPLE X

Adrenal insufficiency
GERD and achalasia cardia **ALLGROVE'S**
Alacrimia
Autonomic Features

Delayed Puberty
Hypergonadotropic Hypogonadism **TRIPLE X**

Sensory and Motor Neuropathy

TRIPLE X SYNDROME
Incidence – 1 in 1000 females
Most common female chromosomal abnormality.
Epicanthal folds, hypertelorism, upslanting palpebral fissures, clinodactyly, overlapping digits, pes planus, and pectus excavatum, hypotonia and joint hyperextensibility.
POF, unilateral kidney, AITD.

ALLGROVE'S SYNDROME – TRIPLE A
Less than 100 reported cases since 1978.
Adrenal insufficiency, achalasia of the cardia, alacrima, autonomic abnormalities.
Abnormal pupillary reflexes, poor heart rate variability, and orthostatic hypotension.
Mutations of the ADRACALIN (or AAAS) gene encoding the ALADIN protein of the NPC.
No unifying pathologic hypothesis.
Progressive loss of cholinergic function.
May represent a dysfunction of melanocortin receptor signaling.

Review
General Condition improved
BP -110/70 mm Hg
2 cm ht gain
No development of secondary sexual characters
FSH – 38.58mu/ml
LH – 17 mu/ml
E2 – 34 pg/ml
TSH – 4 mciu/ml
Anti-TPO antibodies - negative
Anti-thyroglobulin antibodies – negative
Started on estrogen
Ovaries not visualised on ultrasound.

Subsequent CT abdomen –
Infantile uterus and ovaries visualised
Achalasia cardia noticed incidentally
Co-incidentally MRI brain showed atrophy/agenesis of lacrimal glands

ALLGROVE SYNDROME/ TRIPLE A SYNDROME
However, delayed puberty could not be explained
Karyotype showed ***47XXX***

To the best of our knowledge , this is the only such reported case in the world.

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