FAMILIAL TESTICULAR FEMINISATION SYNDROME. Brothers grown up as beautiful sisters. XY Females in a family

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Abstract:
FAMILIAL TESTICULAR FEMINISATION SYNDROME (BROTHERS GROWN UP AS BEAUTIFUL SISTERS). XY FEMALES IN A FAMILY. ABSTRACT TFS is a rare form of male pseudohermaphroditism with an incidence of 1 in 20,000 to 64,000. Individuals with complete form have female genitalia and incomplete form have ambiguous genitalia which makes the diagnosis easy.

CASE SUMMARY A 21 year old girl attended OPD with complaints of not attained menarche. O/E she was phenotypically female. Her height-158 cms, weight-50 kgs. Smell and vision were normal. No thyromegaly, Breast development Tanner stage IV. Axillary and pubic hair absent. External genitalia appeared normal. Abdominal and other systemic examinations were normal. Per rectal examination: Uterus not felt.

Keyword: familial, complete testicular feminisation, both sisters
On further investigations her serum testosterone and LH were elevated USG showed absent uterus with B/L gonads Diagnostic laparoscopy showed absent uterus and B/L gonads Examination under anaesthesia showed a blind vagina of 3cmsKaryotyping done and found to be 46XY

**Her younger sister (18yrs)** also had similar complaints and she was also evaluated. Her height 152cms & weight 48kgs. She was also phenotypically female with similar stage of pubertal development. She also had elevated LH and Testosterone USG, diagnostic laparoscopy & examination showed absent uterus, B/L gonads and blind vagina of about 5 cmsBoth of them were planned for gonadectomy and HRT. HPE confirmed that the gonads were testis.

DISCUSSION

TFS is a form of male pseudo hermaphroditism with an incidence of 1 in 20000-64000 male birth It was first described by Morris at Yale in 1963 due to mutation in the AR gene located in the X chromosome (Xq11-Xq12) 2/3rd inherited from X linked recessive 1/3rd –spontaneous mutation in AR gene CAIS have normal female external genitalia at birth. They present later in life as primary amenorrhoea. PAIS present as undermasculanised males / ambiguous genitalia / females with virilisation depending upon the severity of mutation.

**Classification of AIS -Quigley & French**

G I - PAIS - Infertile male G II - PAIS - Mildly undermasculanised males G III - PAIS - Severely undermasculanised males (Reifenstein syndrome) G IV - PAIS - Ambiguous genitalia G V - PAIS - Essentially female genitalia with clitromegaly G VI - PAIS - Female genitalia with pubic& axillary hair G VII – CAIS – Female genitalia with little or no pubic/axillary hair

**Phenotypic spectrum**

MALE à FEMALE Infertile male->Reifenstein syn->Incomplete AIS->Complete AIS

**Differential Diagnosis Karyotype - XY**

-5 alpha reductase deficiency -17 ketosteroid reductase deficiency -XY gonadal dysgenesis (sweyer’s syndrome) -Leydig cell hypoplasia -DenishDrash syndrome -Smith Lemli Opitz syndrome

**Karyotype -XX**

-Mullerian Agenesis -Vaginal atresia
INVESTIGATION
PRENATAL by CVS at 9-12 weeks, USG and amniocentesis after 16 weeks IF PRESENT IN LATER LIFE Karyotyping to confirm as XY in Blood & Buccal smear

Biochemical testing of carriers
Skin biopsy to evaluate androgen binding capacity. - older method carriers have 50% androgen binding capacity 2) DNA testing Blood & Buccal smear 3) Base pair repeat region in the first exon of the gene of AIS person is matched with that of XX female relative

Clues to the diagnosis of carrier states in the family
Affected maternal relatives
Delayed puberty in XX female
Decreased pubic & axillary hair in XX
Asymmetric distribution of hair
Decreased bone density in females

TREATMENT
SURGICAL
MEDICAL
PSYCHOLOGICAL
SURGICAL
1) Orchidectomy/Gonadectomy
   -delayed upto 16 to 18 years - only exception - gonads with Y should be removed as soon as diagnosed. Reasons for delayed gonadectomy Smooth pubertal development achieved with endogenous hormone is difficult to achieve with exogenous hormone. Incidence of gonadal tumour is low(5-10%) and is very rare before puberty in AIS

Reconstructive surgeries
   -Vaginoplasty
   -Phalloplasty and clitoridectomy in PAIS

MEDICAL Therapy – HRT
   Psychological Therapy
   To the family - when to expose about the disorder to the children

REFERENCES:


5. Hormonal management of complete AIS from adolescence onwards Betellosis, Dati E, Baroncelli GI-HIORT O,