Spontaneous resolution of secondary amenorrhoea in a patient with mosaic Turner's Syndrome

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Background

Turner's Syndrome (TS) results from a genetic abnormality in phenotypical female individuals where the second X chromosome is either absent or present in a mosaic form. The most obvious consequences are short stature and primary amenorrhoea, although there are often dysmorphic features as well as cardiovascular complications (Table 1).

90% of TS patients experience primary gonadal failure and subsequent infertility. Whilst primary amenorrhoea and pubertal failure is most prevalent, a minority of TS patients may present with secondary amenorrhea after either complete or arrested puberty. The latter is more likely to occur in mosaic forms of TS. Normal puberty, persistent menstruation and unassisted natural conception have all been previously documented in a minority of TS patients (1). With this variable degree of ovarian dysfunction, histologic studies suggest that normal numbers of primordial germ cells, up to 6 weeks' gestation, are subsequently subjected to an accelerated apoptotic process with advancing gestation, by a yet unknown mechanism (2).

Spontaneous recovery of ovarian function after primary ovarian failure in patients with TS has not been previously described in the literature as per our knowledge.

Table 1: Characteristic clinical abnormalities and complications in TS

Skeletal defects with an incidence of ≥50%
Short stature
↑ upper:lower segment
Dental defects
Cubitus valgus
kyphosis
Cardiac malformations
Aortic valve abnormalities (mostly bicuspic AoV)
Dilated ascending aortic
Coarctation of aorta
Pulmonary venous abnormalities
Hypertension
Renal and renovascular anomalies
Auditory abnormalities
Recurrent otitis media
Sensorineural and conductive hearing loss
Visual abnormalities
Myopia
Strabismus

Case report

A 26-year-old female with mosaic TS developed secondary amenorrhoea by 21 years of age. Of note she had a history of Graves' thyroid disease in childhood (serum TSH-receptor antibody level 66 IU/L (>1.5 considered positive)), treated with a total thyroidectomy (histology consistent with Graves' disease). Her serum estradiol level was undetectable (<60 pmol/L) and corresponding FSH and LH levels were 101 IU/L and 52.7 IU/L respectively (post-menopausal range >30). Her serum TSH level was 1.63 mIU/L (normal range 0.3 – 4.7) on levothyroxine replacement. She was started on hormone replacement therapy (HRT).

She later elected to have fertility treatment and two in-vitro fertilization (IVF) attempts, using donated eggs from her sister, were unsuccessful. During her second IVF attempt she was noted to have some underlying ovarian activity on ultrasound scanning. She was thus advised to stop her HRT. By 3 months she has had 2 menstrual cycles. Her AMH was detectable at 8.3 pmol/L and her last menstrual cycle was ovulatory with a day 21 serum progesterone level of 113 nmol/L. Her corresponding serum LH, FSH and estradiol levels at the time were 3.5 IU/L, 4.2 IU/L and 425 pmol/L respectively. She later conceived naturally.

Discussion

Although her previously-documented ovarian insufficiency was ascribed to TS, her past history of autoimmune Graves' thyroid disease may explain a propensity to autoimmune ovarian insufficiency, which unlike that arising directly from TS, is known to remit and relapse. In TS patients with ovarian insufficiency and other underlying autoimmune diseases, consideration should be given to possible recovery of ovarian function prior to attempting fertility treatment due to the possibility of autoimmune ovarian insufficiency being a confounding aetiology.

References

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Reproduction

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