

Vanishing Large Ovarian Cyst with Thyroxine Therapy - A Rare Case Report

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Abstract: Ovarian cysts are a common cause for gynaecological surgery. However, some ovarian cysts arise due to endocrine disorders and hence do not require any surgical intervention. Our case report demonstrates the causal relationship between hypothyroidism and development of multicystic ovarian cysts, which regress following thyroid replacement therapy, without the need for any surgical intervention.

Keywords: Ovarian cyst, thyroxine therapy

1. Introduction

Ovarian cysts are a common cause for gynecological surgery. However, some ovarian cysts arise due to endocrine disorders and hence do not require any surgical intervention. Our case report demonstrates the causal relationship between hypothyroidism and development of multicystic ovarian cysts, which regress following thyroid replacement therapy, without the need for any surgical intervention.

2. Case Presentation

A16 years old girl presented to OBG OPD with the complaints of heavy menstrual bleeding for the past four months. Investigations revealed severe hypothyroidism (TSH 100 u IU / ml) and bilateral cystic ovarian masses USG;

A large cystic mass with multiple septations in right adnexa measuring 7.7 x 7.3 cm,

A large cystic mass with multiple septations in left adnexa measuring 11.7 x 8.1 cm MRI was done which revealed large multiloculated cystic lesions in both ovaries.

Serum prolactin was 45.20 ng/ml.

Tumor markers CEA, AFP, CA 125, LDH were found to be within normal limits.

Thyroxine was started and after 6 weeks repeat TSH 2.65 u IU/ ml and her cycles were also regularized with normal flow.

There was significant reduction in the size of ovarian cysts after thyroxine therapy USG;

Right ovary 4.6 x 3.9 cm and a cyst within measuring 2.2 x 3.0 cm with no septations and internal vascularity within.

Left ovary 8.1 x 3.9 cm, a complex cyst measuring 4.0 x 3.5 cm with septation measuring 7 mm with no internal vascularity.

	Size of cyst before thyroxine therapy	Size of cyst after thyroxine therapy
Right ovarian cyst	7.7 x 7.3 cm	2.2 x 3.0 cm
Left ovarian cyst	11.7 x 8.1 cm	4.0 x 3.5 cm

3. Discussion

Ovarian function, i.e. production of steroid hormones and ova, is subject to regulation by endocrine factors derived from the brain. This brain-gonadal axis is the core unit for the maintenance of endocrine balance and fertility. Failure to recognize hypothyroidism as an etiology of ovarian cysts could lead to inadvertent oophorectomy.

Many studies have shown that ovarian enlargement in severe hypothyroidism is probably due to the stimulation of FSHRs by unusually high TSH levels proven to have a weak FSH-like activity. It has been shown that TSH could interact directly with the FSHRs to elicit gonadal stimulation, because TSH has a small FSH- and luteinizing hormone (LH)-like effect. Strong immunostaining of TSHR was demonstrated in the ovarian surface epithelium and in the oocytes of primordial, primary and secondary follicles, with minimal staining in the granulosa cells of secondary follicles, which supports the view that TSHR may participate in the regulation of ovarian function

There is evidence that supplementation with thyroid hormone can lead to the complete regression of such multicystic ovarian cysts. Surgical exploration in these cases should be performed only in emergency cases such as ovarian torsion and rupture. Surgical excision should be considered only when adequate thyroid replacement therapy fails to resolve ovarian enlargement.

4. Conclusion

This case report highlights the rare and often missed association between hypothyroidism and ovarian cysts. Although rare, profound hypothyroidism that can cause ovarian cysts in an adolescent should always be kept in the differential diagnosis to avoid unnecessary ovarian surgery so as to not compromise fertility in the future.

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