Abdomino-pelvic Mass Vanishing after HRT in a Young Girl

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Ovarian cysts are common causes of gynaecological surgery. However, some ovarian cysts arise due to endocrine disorders and hence do not require any surgical intervention. Primary hypothyroidism is a common endocrine abnormality resulting from thyroid hormone deficiency that in turn may lead to multisystem impairment. We report a case of 10 year old girl presented with abdominal pain and distension for four months and occasional per vaginal bleeding for one and half months. On examination, she had classical features of hypothyroidism. Abdominal and pelvic ultrasound revealed enlarged ovaries with multiple thin-walled cysts and mild ascitic fluid. After treatment with levothyroxine for 4 weeks and norethisterone for 3 weeks volume of ovarian cyst regressed along with cessation of per vaginal bleeding. Spontaneous ovarian hyper stimulation syndrome (SOHSS) can occur following hypothyroidism. Ultrasonography and hormonal assay facilitates diagnosis and monitoring of this syndrome.

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Introduction

Hypothyroidism is a condition in which the thyroid gland is underactive and doesn't make enough thyroid hormone. Hypothyroidism is the most common thyroid disorder affecting children. However, children with hypothyroidism display different symptoms from adults.[1,2] If left untreated, hypothyroidism in the newborn (congenital hypothyroidism) can lead to intellectual disability and profound developmental delays.[3,4] The most common manifestation of hypothyroidism in children is declining growth velocity, often resulting in short stature. The growth delay tends to be insidious in onset, and it may be present for several years before other symptoms occur, if they occur at all. Thus, any child with declining growth velocity should be evaluated for hypothyroidism.

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Case Report

A young girl 10 years of age presented with lower abdominal pain and distension for 5 months in outdoor of Shaheed Sayed Nazrul Islam Medical college Hospital during mid July of the year 2015, She also noticed occasional irregular per vaginal bleeding for one and half months. On clinical examination she had classical features of hypothyroidism. Her height was 37 inches and weight 19.5 Kg. Her thyroid gland was normal. Per abdominal examination revealed a mass cystic in nature, non-tender and extended from lower pelvis to upper abdomen. Per vaginal examination revealed vulva developed but swollen. Investigation of hormone profile was TSH >60 µIU/ml, FSH 6.6 IU/L, Serum Prolactin 104.28 ng/ml. Haemoglobin 9.6 Gm/dl. Other haematological findings were within normal limit. Ultrasonographic examination of pelvic region showed right adnexal cyst (11.4 cm × 7.8 cm). CT scan of the brain showed mild atrophic bilateral fronto-temporo-parietal region. Our provisional diagnosis was ovarian cyst. Due to limitation of facilities and services FNAC and Tumor marker not done.

Figure 1. Height of the ovarian cyst

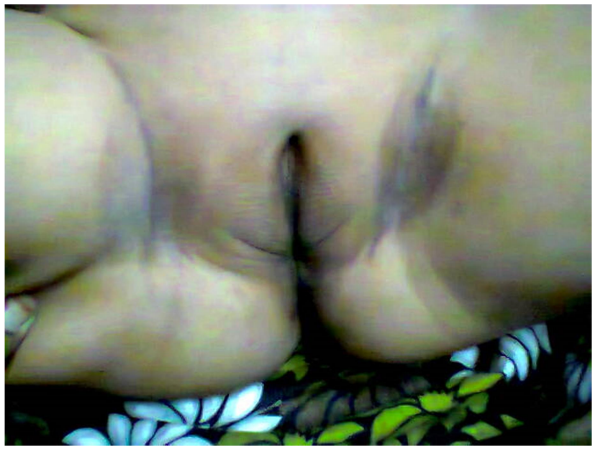

Figure 2. Swollen vulva

For the first time she was prescribed with Tab. Thyroxine (50 µgm) starting from 25 µgm early morning for 1 week then increased 50 µgm for next 7 days and then 100 continued. For irregular bleeding Tab Norethisterone 5 mg bd for 21 days added. After 1 month patient clinically improved and the follow up investigation showed TSH 6.69 µIU/ml, T4 37.42 µIU/ml. Ultrasonographic examination of the pelvis showed marked decreased in size of the right ovary (3.3cm × 2.5cm). Then we advised to consult with an endocrinologist for dose adjustments of thyroxine. Then, Tab. Thyroxine decreased to 50 µgm and continued.

Figure 3. Ultrasonographic scan

After 3 weeks follow up the patient rapidly improved both physically and mentally, and showed interest in daily activities.

Discussion

Spontaneous OHSS can occur both in pregnant and non-pregnant women. De Leener classified spontaneous OHSS syndrome into three types based on clinical presentation and FSH receptor mutation. Type I is associated with the mutated FSH receptor and this type may cause recurrent spontaneous OHSS. Type II is secondary to high levels of human chorionic gonadotropin (hCG) as in hydatidiform mole and multiple gestation and is the most frequent one. Type III is related to hypothyroidism.[5,6,7]The pathophysiology of spontaneous OHSS associated with hypothyroidism is not studied well. The explanations given are (a) excessive estriol via the 16-hydroxylation pathway instead of the normal 2-hydroxylation that has been demonstrated in hypothyroid patients. Excessive gonadotropin release, due to decreased feedback regulation caused by substitution of estradiol by the less potent estriol, would result in spontaneous OHSS in those subjects;(b) High levels of thyroid stimulating hormone can directly stimulate ovaries in women with hypothyroidism and can cause ovarian hyperstimulation.[8,9,10]

A description of spontaneous ovarian hyperstimulation syndrome (SOHSS) in two members of the family recently has been published. But there are few studies focusing on ovarian volume and cyst regression after thyroxine replacement therapy.[11,12] Imaging findings of OHSS include multiple large and thin walled cyst and ascites. The exclusion of diagnosis of ovarian cancer is made by ultrasonography, CT scan, MRI. Furthermore the reduction of ovarian volume regression of detected cyst during close observation and management and ultrasonic follow up can differentiate OHSS from other diagnosis.[13,14]

Here, we described vanishing of the ovarian cyst and normalization of the size of the ovary, our patients, within 1 and half month after thyroxine replacement. It is noted that severity of the symptoms are closely related with the TSH level and the size and function of the ovarian cyst. In one study of hypothyroid patient considerable regression of the cyst was observed after three months but our case improved within one and half month and improved both physically and mentally and also had no per vaginal bleeding. Congenital hypothyroidism is usually detected during routine newborn examination. Blood samples may revealed abnormally low level of T4 and TSH suggesting of hypothyroidism. The standard treatment for hypothyroidism involved daily use of the synthetic levothyroxine. This oral medication distorts adequate hormone level reversing the sign symptoms of hypothyroidism. Levothyroxine causes virtually no side effects when use in an appropriate dosage is relatively inexpensive. Certain medication supplements and events may affect ability to absorb such as iron supplements, aluminum hydroxide and calcium supplements. Left untreated in newborns, hypothyroidism can lead to intellectual disability. Untreated hypothyroidism may also lead to anemia, low body temperature, and heart failure. The goal of treatment is to restore hormone levels to normal. Some children will require hormone replacement therapy for the rest of their lives, while others appear to outgrow the disorder, often by age of three. Regular monitoring of your child's thyroid hormone levels during the course of treatment can help the doctor diagnose the child's condition more accurately.

Conclusion

Supplementation with thyroid hormone may lead to the complete regression of multicystic ovarian cysts for hypothyroidism. 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. Hypothyroidism and other endocrine disorders should be considered in the differential diagnosis of adult females presenting with multicystic ovarian tumours to avoid unnecessary ovarian resection and young patients with ovarian cysts should be recommended to undergo screening for hypothyroidism.

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