Painless Thyroiditis Presenting with Bilateral Painful Gynecomastia: Case Report

Bilateral Ağrılı Jinekomasti ile Prezente Olan Ağrısız Tiroidit

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ABSTRACT Frequency of gynecomastia in thyrotoxic patients is variable. Variety in prevelance may be attributed to ethnic origins. The decreased free testosteron to estradiol ratio, increased peripheral conversion of androgen to estrogen and increased activity of estrogen may be responsible for enlargement of breasts in hyperthyroidism. Painful gynecomastia as a first complaint in thyrotoxic patients is very rare. Our patient admitted to our clinic with complaints of painful breast enlargement unresponsive to analgesics. He was unable to sleep for a month because of severe pain. Thyroid stimulating hormone (TSH) levels were supressed. Free thyroxine (fT4) levels were normal while free triiodothyronine (fT3) levels were elevated. Anti-thyroglobulin antibody and antithyroid peroxidase antibody (Anti-TPO) were negative. In ultrasound examination of breasts, bilateral fibroglandular tissue proliferation was observed. The radioactive iodine uptake test could not be evaluated due to unavailability of test in our hospital. There was near-total supression in Tc-99m thyroid scintigraphy. He was diagnosed with painless thyroiditis. Painful gynecomastia resolved and reliefed once the patient became euthyroid.

Key Words: Gynecomastia; thyroiditis; thyrotoxicosis

ÖZET Tirotoksik hastalarda jinekomasti sıklığı değişkendir. Prevelanstaki farklılıklar etnik kökene bağlanabilir. Serbest testosteronun estradiole oranının azalması, androjenlerin östrojene periferik dönüşümünün artması ve östrojenin artmış aktivitesi hipertiroidizmdeki meme büyümesinden sorumlu olabilir. Tirotoksikozu olan hastalarda ilk yakınma olarak ağrılı jinkomasti görülmesi çok nadirdir. Hastamız, memesinde ağrı kesicilere cevapsız ağrılı büyüme yakınması ile kliniğimize başvurdu. Şiddetli ağrı nedeni ile bir aydır uyuyamıyordu. Tiroid stimulan hormon (TSH) değeri baskılıydı, serbest tiroksin (sT4) değeri normal ve serbest triiyodotironin (sT3) değeri yüksekti. Anti-tiroglobulin antikoru (Anti-Tg) ve antitiroid peroksidaz antikoru (Anti-TPO) negatifti. Meme ultrasonografisinde bilateral memede fibroglandular doku proliferasyonu mevcuttu. Radyoaktif iyot uptake testi hastanemizde çalışılamadığı için yapılamadı. Tc-99m tiroid sintigrafisi totale yakın supreseydi. Hastaya ağrısız tiroidit tanısı kondu. Hasta ötiroid oldukça ağrılı jinekomastisi geriledi.

Anahtar Kelimeler: Jinekomasti; tiroidit; tirotoksikoz

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Gynecomastia is seen in 40% of hyperthyroid patients.[1] However, in a 180-case series which included 47 male patients of Tan et al, none presented gynecomastia in thyrotoxicocis.[2] The majority of men with gynecomastia are asymptomatic.[3] Imbalance of estradiol/androgen may leads to gynecomastia.[4] Painful gynecomastia in thyrotoxicosis without hy-

perthyroidism has not been reported so far. Here, we report a patient with transient thyrotoxicosis presented with painful gynecomastia.

CASE REPORT

A 37 years-old man admitted to our outpatient clinic with a one-month history of painful enlargement of both breasts. He had the pain for a month and relieved neither by nonsteroidal anti-inflammatory drugs (NSAID) nor by Meperidine. He was not able to sleep. He had no significant past medical history. He had no history of smoking, drug intake or iodine exposure. Physical examination of patient revealed bilateral painful gynecomastia. Galactorrhea was not detected. He also had a mildly enlarged, diffuse, painless and symmetric goitre. His pulse rate was regular at 110 beats/min. Body mass index was 28 kg/m^2. Secondary sexual characteristics and examination of external genitalia were found to be normal. Electrocardiogram showed sinus tachycardia.

Thyroid stimulating hormone (TSH) levels were supressed. Free thyroxine (fT4) levels were normal while free triiodothyronine (fT3) levels were elevated. Anti-thyroglobulin antibody and antithyroid peroxidase antibody (Anti-TPO) were negative. Serum levels of follicle stimulating hormone (FSH) and luteinizing hormone (LH) were normal. Total testosteron levels were elevated, free testosteron and estradiol levels were normal. We were unable to measure sex hormone binding globuline (SHBG) levels because of unavailability of the test in our hospital. Serum levels of prolactin was normal (Table 1). Complete blood count, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), alanine aminotransferase (ALT) and kreatinin levels were all within normal limits. Beta human chorionic gonadotropin (βhCG) was negative.

In the thyroid ultrasonography, right lobe was 16 mm x 15 mm x 44 mm and the left one was 16 mm x 15 mm x 40 mm in diameter. Thyroid gland was diffusely heterogeneous and there was no nodule. The radioiodine uptake test coud not be evaluated because the test was unavailable in our hospital. There was near total supression in Tc-99m thyroid scintigraphy.

TABLE 1: Hormone profile of the patient.

Component	Before treatment	3 months after treatment	Reference range
FSH (mU/mL)	2.81	3.61	1.5-12.4
LH (mIU/mL)	6.66	5.42	1.7-8.6
Estradiol (pg/mL)	40.5	35	7.6-43
Total testosteron (ng/mL)	9.1	7.2	2.8-8
Free testosteron (pg/mL)	9.07	12.5	8.69-54.69
PRL (ng/mL)	11	14	4.04-15.2
TSH (mIU/mL)	0.018	2.45	0.27-4.2
fT4 (ng/dL)	1.61	1.75	0.93-1.7
fT3 (pg/mL)	6.24	3.56	2-4.4
Anti-thyroglobulin (IU/mL)	11	14	0-115
Anti-TPO (IU/mL)	12	17	0-34

FSH: Follicle stimulating hormone; LH: Luteinizing hormone; PRL: Prolactin; TSH: Thyroid stimulating hormone; fT4:Free thyroxine; fT3:Free triiodotyronine; anti-TPO: Anti-thyroid peroxidase.

In ultrasound examination of breasts, bilateral fibroglandular tissue proliferation was observed (50 mmx12 mm and 13 mmx6 mm for right and left breast respectively). Ultrasound examination of testicles revealed no pathology. Hepatobiliary ultrasonography (USG) examination revealed grade 1 hepatosteatosis.

He was diagnosed with painless thyroiditis and treated with 40 mg of propranolol and 1200 mg of ibuprofen orally. Thyrotoxicosis resolved in 2 months. His gynecomastia resolved and his pain gradually relieved as euthyroidism was established.

DISCUSSION

Imbalance of estradiol/androgen may leads to gynecomastia.[4] In hyperthyroid men, hepatic production of SHBG increases by 2 to 5 fold, thus, leading to elevated total testosteron levels and reduced free testosteron levels.[3,5] So the ratio of free testosteron to estradiol is decreased.[6] A correlation has been found between SHBG concentration and the severity of thyrotoxicosis.[7] Our patient had high levels of total testosteron whereas free testosterone levels were in the lower limit of normal. We were not able to measure SHBG levels since the test was unavailable in our hospital.

Increased activity of estrogen may also responsible for enlargement of breasts in hyperthyroidism.[8] Peripheral conversion of androgen to estrogen is increased by thyroid hormones and this results in a higher estrogen/androgen ratio.[9] Pituitary gland responds to this situation by increasing secretion of LH and FSH. Increased LH may also enhance testicular aromatase.[5] Increased levels of androstenediol 3-sulfate, which is an active metabolite of dehydroandroepiandrosterone (DHEA) and DHES sulfate (DHEAS) as well as having active estrogenic activity, may play role in development of gynecomastia in hyperthyroidism.[10]

Our patient had thyrotoxicosis and there was near total supression in Tc-99m thyroid scintigrahy. He had painless, diffuse goitre and painful enlargement of both breasts. His pain and gynecomastia resolved as thyroid hormone levels decreased. Testosteron levels regressed to normal range once the patient became euthyroid. Though many cases of painful gynecomastia in the presence of thyrotoxicosis and hyperthyroidism have been reported in literature, coexistence of painful gynecomastia and painless thyroiditis has not been reported yet.

Thyrotoxicosis presenting with gynecomastia is a rare entity. It may be seen not only in cases such as Graves' disease where thyroid hormone synthesis is increased, but also in thyrotoxicosis without hyperthyroidism cases. Thyroid function tests should be studied in all cases of gynecomastia, so that gynecomastias caused by thyrotoxicosis are not misdiagnosed and patients can have relief of pain in a shorter time.

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