Case Report

Quite Uncommon Entity: Gynecomastia as an Initial Manifestation of Thyrotoxicosis

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Gynecomastia, as a cutaneous feature of thyrotoxicosis, is seen in 10%–40% of cases.[1] As per literature, gynecomastia is a well-recognized but rare feature of hyperthyroidism and accounts for up to 2% of all cases of adult gynecomastia.[2] Gynecomastia, in a patient of hyperthyroidism, is usually bilateral and tender. Unilateral gynecomastia as the presenting feature of the condition is very rare in primary hyperthyroidism.[3-6] However, it is recognized that even with clinically unilateral gynecomastia, bilateral gynecomastia may be present on histology.[7] Recognition of this infrequent presentation of a frequent disease like thyrotoxicosis is important to avoid unnecessary investigations and to ensure accurate management.

Case Report

A 27 year old man presented in medicine outpatient department with symptoms of painful left-sided breast enlargement for about 25 days. On taking detailed history, complaints of weight loss, excessive sweating, and excessive eating were disclosed. History of insomnia and palpitation was also revealed. There was no history of loss of libido and erectile dysfunction were reported. The patient was married and had two children. There was no significant history. On physical examination, the patient was thin built (body mass index 20 kg/m²); pulse rate was 108/min and regular; blood pressure was 126/78 mm/Hg; he was mildly anemic and had fine postural tremors in both hands. There were no eye signs or dermatological signs. He had left-sided painful gynecomastia [Figure 1]. He had Tanner stage 5, normal penile length, and normal testicular volume of 20.6 cm³ by ultrasonography bilaterally. Investigations revealed normal complete blood count, fasting blood sugar of 100 mg/dl, and liver function and kidney function tests being within normal limits. Thyroid function test revealed free thyroxin - 4.1 mg/dl, free triiodothyronine - 9 pg/ml, and thyroid-stimulating hormone - 0.02 mIU/ml. Serum testosterone level was 1712 ng/dl (normal 250–1600 ng/dl), serum estradiol was 82 pg/ml (normal 10–40 pg/ml), serum luteinizing hormone (LH) was 18.2 IU/L (normal 1.2–7.8 IU/L), serum follicle-stimulating hormone was 5.6 mIU/ml (normal 1.8–6.8 mIU/ml), and serum prolactin was 11.2 ng/ml (normal 2.5–20 ng/ml). The patient was diagnosed as a case of thyrotoxicosis with gynecomastia and treated with carbimazole and propranolol. Within 2 weeks of instituting treatment, the patient started to show improvement, and a follow-up review after 2 months revealed that gynecomastia completely resolved.

Discussion

It is reported that gynecomastia appears as a result of imbalance between stimulative effect of estrogen and the inhibitory effects of androgens (increase in free estrogen/androgen ratio) in the breast epithelial cells. Although progesterone has additive effect, prolactin does not usually

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have direct effect on the development of gynecomastia. In thyrotoxicosis, the changes in sex hormones in male are raised total testosterone, dihydrotestosterone, sex hormone-binding globulin, estradiol, and LH. While the increase in sex hormone-binding globulin leads to a reduction in free testosterone; increased peripheral conversion of androgen to estrogen appears to contribute to high estradiol concentration in hyperthyroidism.\cite{5,8}

**Conclusion**

Concluding the discussion, we should emphasize the recognition of this unusual presentation of hyperthyroidism that will help to avoid unnecessary investigations or surgical procedures as the condition is totally reversible with antithyroid drugs.

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**Conflicts of interest**
There are no conflicts of interest.

**REFERENCES**

1. Ho HK, Loh KC. Hyperthyroidism with gynaecomastia as the initial complaint: A case report. Ann Acad Med Singapore 1998;27:594-6.
2. Ismail AA, Barth JH. Endocrinology of gynaecomastia. Ann Clin Biochem 2001;38:596-607.
3. Gordon DL, Brown JL, Emanuele NV, Hall L 3rd. Gynecomastia as the initial manifestation of hyperthyroidism. Endocr Pract 1997;3:80-1.
4. Cheah JS. Gynaecomastia in hyperthyroidism. Singapore Med J 1971;12:241-3.
5. Becker KL, Winnacker JL, Matthews MJ, Higgins GA Jr. Gynecomastia and hyperthyroidism. An endocrine and histological investigation. J Clin Endocrinol Metab 1968;28:277-85.
6. Jayapaul M, Williams MR, Davies DP, Large DM. Recurrent painful unilateral gynaecomastia-interactions between hyperthyroidism and hypogonadism. Andrologia 2006;38:31-3.
7. Braunstein GD. Clinical practice. Gynecomastia. N Engl J Med 2007;357:1229-37.
8. Glass AR. Gynecomastia. Endocrinol Metab Clin North Am 1994;23:825-37.