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Unilateral Gynaecomastia - An Unusual Presentation of Thyrotoxicosis

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Introduction

Thyrotoxicosis along with its usual signs and symptoms like palpitation, weight loss, tremors, sweating, heat intolerance, diarrhea, exophthalmos, tachycardia, and warm extremities, can also present with gynaecomastia and as many as 80% of the patients may have histological evidence of gynaecomastia¹⁻⁴. Although association of thyrotoxicosis with gynaecomastia is well documented, its presentation as the initial or the predominant complaint in a subject with undiagnosed hyperthyroidism is extremely rare⁵. Gynaecomastia in thyrotoxicosis may predominate over other commonly recognized symptoms. A patient who presented with tender unilateral gynaecomastia secondary to thyrotoxicosis is described.

Case Report

A 52 year old man was referred for evaluation of gynaecomastia. He had history of a tender lump on the right breast and difficulty in walking for the past two months. He also complained of weight loss and disturbed sleep for the last three months. He was married and had three children and denied any sexual problems. On physical examination his weight was 54kg, pulse rate 96/minute and blood pressure 130/70 mmHg. Fine tremors of both hands were present and there was no proptosis and thyroid was not enlarged. Heart rate was 96/minute with no murmur or gallop.

Examination of chest showed that the right breast had a 2 x 2 cm tender mobile lump under the areola. Left breast was normal. He had difficulty in getting up from squatting position without support. Rest of the physical examination was unremarkable.

Chest X-ray, complete blood count, fasting blood sugar and urine analysis at the time of presentation were within normal limits. He was advised to get his thyroid functions done which revealed free thyroxine (fT4) 3.9 ng/dl (0.8-1.9), thyroid stimulating hormone (TSH) <0.1uU/ML (0.40-4.0), serum sodium chloride and bicarbonate were within normal limits whereas serum potassium (K) was 3.6 mmol/L (3.8-5.2). He was prescribed Carbimazole 30 mg daily and propranolol 10 mg TID. On follow-up visit six weeks later, his physical examination revealed that his weight was 57 Kg, blood pressure 120/80 mmHg, pulse 72/minute and there were no tremors. He could easily get up from squatting position without support. The lump in the right breast had completely receded. His fT4 was 0.9 ng/dl and serum K was 3.9 mmol/L. TSH was still suppressed to <0.1 p.IU/ml.

Discussion

Gynaecomastia is common in teen age boys, obese and elderly men and in patients suffering from chronic liver disease. Drug induced gynaecomastia is also frequent whereas other causes of

gynaecomastia are relatively uncommon⁶.

Association of gynaecomastia with hyperthyroidism is uncommon but has been well documented. Gynaecomastia in patients with hyperthyroidism is rarely present as a primary complaint. When present, it may pose a diagnostic challenge to the clinician⁷.

Information on the effect of abnormal thyroid function on male reproduction is more scanty than that for the females⁸. It has been noticed that patients with thyrotoxicosis have elevated androstenedione production rate⁹ that leads to subsequent increased production of estrogens in extraglandular sites. Therefore the mechanism of elevated estrogen is probably similar to that in liver disease i.e., increased availability of substrate for extraglandular aromatisation¹⁰.

Progesterone has also been found higher in hyperthyroid patients before treatment. Progesterone also enhances estrogen's stimulation of mammary gland¹¹. Androstenedione and androstenediol are active metabolites of dehydroepiandrosterone (DHEA) and DHEA sulphate respectively and have estrogenic activity. Concentration of Androsterone, DHEAS and pregnanolone sulphate in blood are increased in hyperthyroidism. Thyroid hormones may stimulate the synthesis of these steroids contributing to gynaecomastia in hyperthyroidism¹². A case of gynaecomastia, galactorrhea and hypokalaemic paralysis with hyperthyroidism is also documented¹³. Our patient also showed slightly lower values of potassium which returned to normal without potassium supplement.

When there are no obvious causes to explain gynaecomastia, hyperthyroidism should be considered as a possibility.

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