THE NEW ZEALAND MEDICAL JOURNAL
Vol 120 No 1265 ISSN 1175 8716

Gynaecomastia in a man and hyperoestrogenism in a woman due to ingestion of nettle (*Urtica dioica*)

Mustafa Sahin, Hamiyet Yilmaz , Alptekin Gursoy, Asli Nar Demirel, Neslihan Bascil Tutuncu, Nilgun Demirag Guvener

Abstract

Nettle (*Urtica dioica*) is commonly sold as a herbal tea in Turkey. We report a case of gynaecomastia in a man (in which the only aetiologic factor identified was nettle tea consumption) and a case of galactorrhoea in a woman (in which the only aetiologic factor identified was also nettle tea ingestion).

The term gynaecomastia describes the enlargement of the male breast so that it mimics the female breast in appearance.[1] Gynaecomastia is the commonest condition affecting the male breast.[2] Breast enlargement in men can occasionally be a sign of serious endocrine or systemic disease and deserves evaluation.

Galactorrhoea (due to hyperoestrogenism) is inappropriate secretion of milk from the breast.[3] By definition, it occurs in the absence of parturition or greater than 6 months postpartum in a non-lactating woman.[3] Galactorrhoea may also be a reflection of an underlying endocrine disorder.[4]

Herbal products can be associated with galactorrhoea in women.[5] Nettle tea is a commonly used commercial herbal tea in Turkey. We report one case of gynaecomastia in which the only aetiologic factor identified was nettle tea and another case with galactorrhoea in which the only aetiologic factor identified was nettle ingestion.

Case 1

A 33-year-old man was admitted to our clinic in September 2006 with unilateral breast enlargement. He had no medical history of smoking or alcohol abuse. The enlargement was elastic and painful upon palpation. He had no galactorrhoea or lymph node enlargement. Results of the rest of the physical examination were normal. Results of all renal, liver, and hormonal function tests (including FSH, LH, oestradiol, β-HCG, AFP, PSA, total and free testosterone levels, and thyroid function) were also normal. These tests ruled out malnutrition, hepatic and renal diseases, gonadal insufficiency, testicular tumours, paraneoplastic syndromes, and hyperthyroidism.

Ultrasound examination of the testes and computerised tomography (CT) of the chest showed no signs of testicular or bronchogenic carcinoma. Breast examination, mammography, and ultrasonography confirmed marked enlargement of the left breast (18×9×9 mm) with a retroareloar glandular component.

There was no traumatic (castration, trauma) aetiology. The patient had drunk nettle tea (2 cups/day) since 1 month before gynaecomastia onset; no other herbal product or drugs were taken.

Consumption of nettle tea was stopped after the diagnosis (September 2006). As a result, ultrasonographic and physical examination revealed s significant decrease in the gynaecomastia (8×5×5 mm) in the 2 months without nettle tea ingestion.

No previous reports of this reaction had been reported. Gynaecomastia simply appeared after the nettle tea was taken. Gynaecomastia was still present but subsided 1 month after stopping nettle tea.

Case 2

A 33-year-old woman presented with a history of galactorrhoea for 1.5 years. Her menses had always been regular before the onset of galactorrhoea. A physical examination revealed nothing abnormal apart from the galactorrhoea. She did not have hirsutism, and her Ferrimann-Gallway score was less than 4. She had never taken any medication known to affect prolactin levels or cause galactorrhoea (dopamine antagonists, monoamine oxidase inhibitors, oestrogen-containing pills). Her liver and renal function tests as well as her thyroid function tests were normal.

Early follicular phase oestradiol was very high: 543 pg/ml; FSH and LH levels were low: 1.2 mIU/ml and 1.7 mIU /ml, respectively. Total and free testosterone levels (45.1 ng/dL and 3.02 ng/dL) were within normal limits. And prolactin was 27 ng/ml.

Ultrasound of mammary glands revealed complicated cysts in the right mammary gland. Pituitary imaging was also normal. Then when she was asked in detail, it was discovered that she had consumed stinging nettle (*Urtica dioica*) tea for 1 month before her admission to our clinic.

After 6 weeks of withdrawing the nettle tea, her blood tests were reevaluated. Her oestradiol level decreased to 45 pg/ml, and FSH and LH increased to 5.9 mIU/ml and 2.9 mIU, respectively. Total and free testosterone levels were normal: 51.2 ng/dl and 3.20 ng/dl. Prolactin was 32.6 ng/ml and galactorrhoea decreased.

Discussion

While there was no clear relationship between hormone levels and gynaecomastia in Case 1, physicians should be aware that nettle consumption may cause gynaecomastia.

Some herbal remedies have significant oestrogen bioactivity especially soy, clover, licorice, hops, and fo-ti.[6] But no studies about the oestrogenic activity of *Urtica dioica* have been reported in the literature. One aetiology may be the local oestrogenic bioactivity of *Urtica dioica* in the breast tissue of males and females.

In previous studies, *Urtica dioica* was found to have beneficial effects in the treatment of symptomatic benign prostatic hyperplasia (BPH) and no side effects were observed.[7–9] The postulated mechanism underlying this treatment was inhibition of the binding of sex hormone-binding globulin (SHBG) by polar extracts of stinging nettle to its receptor on human prostatic membranes.[10]

To the best of our knowledge, Case 1 is the first case reported in which *Urtica dioica* may have been responsible for gynaecomastia in a male. Furthermore, Case 2 is the first known case in which the hyperoestrogenic effect of *Urtica dioica* was observed. The possible mechanism for Case 2 may be the binding affinity of polar extracts of *Urtica dioica* to SHBG that causes elevated serum oestrogen levels.[18] A different mechanism may be involved in breast enlargement due to nettle ingestion.

Author information: Mustafa Sahin, Clinical Specialist; Hamiyet Yılmaz, Clinical Specialist; Alptekin Gursoy, Clinical Specialist; Aslı Nar Demirel, Clinical Specialist; Neslihan Bascil Tutuncu, Clinical Specialist; Nilgun Demirag Guvener, Professor and Director; Endocrinology and Metabolic Diseases Department, Baskent University, Bahcelievler, Ankara, Turkey

Correspondence: Mustafa Sahin MD, Endocrinology and Metabolic Diseases Department, Baskent University, 5. street, Bahcelievler, Ankara, Turkey. Email: drsahinmustafa@yahoo.com

References:

1. On-Line Medical Dictionary. Dept of Medical Oncology, University of Newcastle upon Tyne. http://cancerweb.ncl.ac.uk/cgi-bin/omd?action=Home&query
2. Daniels IR, Layer GT. Gynaecomastia (Review). Eur J Surg. 2001;167(12):885–92.
3. Frantz AG, Wilson JD. Endocrine disorders of the breast. In: Wilson JD, Foster DW, Kronenberg HM, Larsen PR, eds. Williams Textbook of Endocrinology. 9th edition. Philadelphia: WB Saunders Co.; 1998.
4. Kleinberg DL, Noel GL, Frantz AG. Galactorrhea: a study of 235 cases, including 48 with pituitary tumors. N Engl J Med. 1977;296:589–600.
5. Pena KS, Rosenfeld JA. Evaluation and treatment of galactorrhea. Am Fam Physician. 2001;63(9):1763–70. Review.
6. Klein KO, Janfaza M, Wong JA, Chang J. Estrogen bioactivity in fo-ti and other herbs used for their estrogen-like effects as determined by a recombinant cell bioassay. J Clin Endocrinol Metab. 2003;88:4077–9.
7. Safarinejad MR. *Urtica diocia* for treatment of benign prostatic hyperplasia: A prospective, randomized, double-blind, placebo-controlled, cross-over study. J Herb Pharmacother. 2005;5(4):1–11.
8. Dvorkin L, Song KY. Herbs for benign prostatic hyperplasia. Ann Pharmacother. 2002;36(9):1443–52.
9. Lopatkin N, Sivkov A, Walther C, et al. Long-term efficacy and safety of a combination of sabal and urtica extract for lower urinary tract symptoms—a placebo-controlled, double-blind, multicenter trial. World J Urol. 2005;23(2):139–46.
10. Hryb DJ, Khan MS, Romas NA, Rosner W. The effect of extracts of the roots of stinging nettle (*Urtica dioica*) on the interaction of SHBG with its receptor on human prostatic membranes. Planta Med. 1995;61(1):31–2.

