Panax Ginseng: A Newly Identified Cause of Gynecomastia

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Gynecomastia or benign proliferation of the male breast glandular tissue is not uncommon for adolescent males. Its pathogenesis has been attributed to a transient imbalance between estrogens and androgens. Ginseng is a popular herb with a long history of medicinal use. Oriental folk medicine describes it as both a tonic for restoring strength and a panacea. The term “ginseng” generally refers to a plant, Panax ginseng. Based on estrogen-like actions of Panax ginseng due to its structural similarity with estradiol, this agent could be speculated to cause gynecomastia. Here we report a 12-year-old Korean-Japanese boy with bilateral enlargement of the breasts with tenderness in the right breast, which was noticed about 1 month before his first visit to our outpatient clinic. He was diagnosed with gynecomastia based on physical, laboratory, and ultrasound examinations. Detailed questioning about his medications and supplements revealed that he had been given red ginseng extract daily to enhance his performance for 1 month before his clinical presentation. He wanted to make his body stronger as an athlete. He was recommended from his grandmother to take Panax ginseng for his purpose. After stopping this, there was no further growth of the masses and no pain when his right breast was pressed. In conclusion, physicians should consider ginseng in the investigation of gynecomastia.

Keywords: ginseng; gynecomastia; physical examination; questioning about supplements; ultrasound

Received August 21, 2012; accepted September 11, 2012. Published online September 22, 2012; doi: 10.1620/tjem.228.143.
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Laboratory examinations showed normal liver and thyroid functions. His hormone profile was normal for a male: estradiol, < 10 pg/ml (normal, < 10 pg/ml); and testosterone, 1.72 ng/ml (normal, 1.31-8.71 ng/ml).

On examination of his breasts, elastic masses were found bilaterally, more prominent on the right than on the left side, and concentric around the nipple-areolar complex. The right breast was tender, and pressing on his right breast sometimes caused pain. No breast fluid was observed. There was no skin dimpling or nipple retraction and no palpable supraclavicular, axial, or cervical lymph nodes. An ultrasound evaluation showed flat, smooth-margined, hypoechoic concentric masses, measuring 21 × 22 × 8 mm on the right and 17 × 15 × 5 on the left, under the nipple-areolar complex (Fig. 1). Based on these findings, we concluded that the breast masses were consistent with gynecomastia and ruled out malignant breast tumors and neoplasms secreting human chorionic gonadotropin.

Detailed questioning about medications and supplements revealed that he had started taking 500 mg of red ginseng extract daily 2 months earlier, i.e., 1 month before the clinical onset, to enhance his performance. The questioning also revealed that he wanted to make his body stronger as an athlete. He was recommended from his grandmother to take Panax ginseng for his purpose. It was suspected that the ginseng was related to his breast symptoms, based on the close temporal relationship. After stopping the ginseng, there was no further growth of the masses and no pain when his right breast was pressed.

**Discussion**

We concluded that ginseng ingestion was probably the main cause of the patient’s gynecomastia, based on the close temporal relationship between when he started taking ginseng and the onset of his symptoms. This temporal relationship between ginseng ingestion and appearance of
estrogen-related symptoms was similar to that in a patient reported by Palmer et al. (1978): a 70-year-old woman who developed swollen, tender breasts with diffuse nodularity after taking ginseng powder regularly for 3 weeks. Our patient’s clinical improvement after stopping the ginseng supports our speculation. Physiological factors might also have been associated with his symptoms, as the breast changes associated with physiological gynecomastia may appear at least 6 months after the onset of secondary sex characteristics (Sass and Kaplan 2012). Physicians should be aware of this issue, and it is hoped that further investigation might elucidate the relationship between ginseng and gynecomastia.

Johnson and Murad (2009) mentioned the importance of patients’ history and the physical examination in the clinical setting of gynecomastia, reporting that a predisposing medical condition or causative medication was detected in 83% (110) of 132 gynecomastia patients. In addition, all breast cancer cases in their series presented with a dominant mass on clinical examination or other signs suggestive of malignancy (Johnson and Murad 2009). Our patient should remind physicians to inquire about the ingestion of herbal remedies such as ginseng when investigating gynecomastia.

**Conflict of Interest**

The authors declare no conflict of interest.

**References**


