

# Korean Medicine Therapy as a Substitute for Chemotherapy for Metastatic Breast Cancer: A Case Report

Dong-Hyun Lee   Sung-Su Kim   Shin Seong   Nari Kim   Jae-Bok Han

Soram Korean Medicine Hospital, Seoul, South Korea

## Key Words

Breast cancer · *Cordyceps sinensis* · *Euonymus alatus* · *Prunella vulgaris* · *Trichosanthes kirilowii* · Wild ginseng

## Abstract

A 46-year-old Korean woman was diagnosed with stage III breast cancer and underwent 8 cycles of neoadjuvant chemotherapy, breast conservation surgery and adjuvant radiotherapy. However, the cancer recurred in the right upper lung (RUL) and the right pulmonary hilum after 8 months. The RUL nodule was removed through a wedge resection, and the pathologic finding was revealed as a metastatic adenocarcinoma. Adjuvant chemotherapy was recommended, but she refused it because she feared adverse reactions to chemotherapy. Instead, Korean Medicine Therapy with intravenous wild ginseng pharmacopuncture (WGP), *Cordyceps sinensis* pharmacopuncture, *Trichosanthes kirilowii* pharmacopuncture, *Euonymus alatus* pharmacopuncture (EAP) and *Astragalus membranaceus* pharmacopuncture was started. After a month, the disease looked stable, but findings of newly occurring metastatic lymphadenopathies appeared on CT after 6 months. Salvage chemotherapy was recommended, but she also refused it. At this time, *Prunella vulgaris* pharmacopuncture was started. Finally, a complete resolution was confirmed on PET-CT after 5 months, and she has remained in stable condition for more than 6 months with WGP, EAP, a Soram nebulizer solution inhalation and the oral intake of Soramdan S and Hangamdan S.

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## Introduction

In South Korea, breast cancer is the most common cancer in females (except for thyroid cancer). The annual occurrence was 14,277, 14.3% of 99,339 total cancer occurrence in women in 2010. The age-adjusted incidence of female breast cancer in a population of 100,000 is increasing from 24.5% in 1999 to 45.4% in 2010, at a rate of 6% per year [1]. The traditional surgery for breast cancer was radical mastectomy, including axillary lymph node dissection, but breast conservation surgery (BCS) has become the majority nowadays. BCS is performed after lowering the stage with neoadjuvant chemotherapy in regionally progressed breast cancers. Adjuvant chemotherapy may decrease the recurrence and the death rate in case of axillary lymph node metastasis, and radiotherapy may reduce the recurrence rate after the surgery of a large mass with an insufficient resection [2, 3]. Nevertheless, breast cancer shows a high incidence of recurrence and metastases. About 40% of patients suffer from a recurrence after their curative resection, and common metastatic sites are the bones, lung, liver, lymph nodes, chest wall and the brain [4].

This report is about a breast cancer patient who suffered from repeated recurrences in the lung and the mediastinal lymph nodes, had surgery, but refused adjuvant or salvage chemotherapy.

## Case Presentation

A 46-year-old Korean woman was diagnosed with stage III (T2N3M0) right breast cancer at a medical center in September 2011. She underwent 8 cycles of neoadjuvant chemotherapy with Adriamycin + cyclophosphamide (4 cycles) and docetaxel (4 cycles) from September 16, 2011, to February 6, 2012. She underwent right BCS on March 7, 2012, and adjuvant radiotherapy (5,600 cGy/28 fx) from April 4, 2012, to May 17, 2012. However, a 10.8-mm nodule in her right upper lung (RUL) was found on follow-up CT in March 2013, and it increased to 13.4 mm in June 2013. The PET-CT performed on June 27, 2013, showed a hypermetabolic pulmonary nodule in the RUL and focal hypermetabolic lesions in the right pulmonary hilum (fig. 1a). The RUL nodule was removed by wedge resection on July 8, 2013, and the pathological findings were revealed as being a metastatic adenocarcinoma. Thus, adjuvant chemotherapy was recommended, but she refused because she was afraid of adverse reactions to chemotherapy that she had already experienced during neoadjuvant chemotherapy before her BCS. Instead of chemotherapy, she chose a Korean Medicine Therapy (KMT) to increase her immune power; she was then admitted to our hospital. From August 2, 2013, she was treated with intravenous wild ginseng pharmacopuncture (WGP) 10 ml, *Cordyceps sinensis* pharmacopuncture (CSP) 10 ml, *Trichosanthes kirilowii* pharmacopuncture (TKP) 10 ml, *Euonymus alatus* pharmacopuncture (EAP) 10 ml, and *Astragalus membranaceus* pharmacopuncture (AMP) 10 ml 3 times a week (table 1). On a CT performed on September 9, 2013, no findings of a recurrence were visible.

However, findings of lymphadenopathies were seen on a CT performed on December 2, 2013. There were lymph nodes of about 15 mm in size in her right paratracheal, the interlobar hilar and the subcarinal area (fig. 2). Therefore, salvage chemotherapy was recommended, but she refused it again and wanted to continue her KMT. On December 2, 2013, *Prunella vulgaris* pharmacopuncture (PVP) was started instead of AMP (table 1). On a follow-up CT performed on May 30, 2014, all the increased lymph nodes were decreased to less than 10 mm in size (fig. 3). A PET-CT of the same day showed no significant increase of FDG uptake in her whole body (fig. 1b). Starting in July 2014, intravenous pharmacopuncture was re-

duced to WGP (10 ml), EAP (10 ml) (3 times a week), and instead, Soram nebulizer solution inhalation (8 ml, 3 times a week), oral intake of Soramdan S (8 g, 3 times a week) and Hangamdan S (1 g, 3 times a day) were administered (table 1). Finally, no recurrence was observed on PET-CT performed on November 14, 2014 (fig. 1c).

## Discussion

Major medical treatments for breast cancer are surgery, chemotherapy and radiotherapy. At first, this patient was diagnosed pathologically as suffering from estrogen receptor/progesterone receptor/Her-2 receptor (2+/ 2+/-) adenocarcinoma, and the radiological stage was T2N3M0. Our patient underwent neoadjuvant chemotherapy, surgery and adjuvant radiotherapy; however, the cancer radiologically recurred and metastasized to a lung and probably to the lymph nodes within a year. She underwent a second surgery for the diagnostic removal of the lung nodule, and it was identified as metastatic breast cancer. She refused any further chemotherapy. Instead of adjuvant chemotherapy, she chose KMT. Unfortunately, other suspicious metastatic lymphadenopathies arose within 6 months. She refused salvage chemotherapy and was treated with KMT. Finally, all the lesions resolved within 5 months, and she has remained in stable condition for more than 6 months so far.

Pharmacopuncture is the injection of liquid herbal extracts into acupuncture points or blood vessels. A nebulizer therapy is the nasal inhalation of distilled liquid herbal extracts in the form of mist (with a nebulizer). Oral herbal medicine is made out of single or several kinds of herbs in the form of pills, capsules or fluids. All pharmacopuncture and nebulizer solutions in this case were produced in the pharmacopuncture manufacturing room of our hospital. All solutions were produced through a distillation process. Briefly, a certain amount of herbs was decocted in distilled water for some hours, and the decoction was distilled to produce a certain amount of pharmacopuncture fluid, which, in turn, was filtered with 0.45- and 0.2- $\mu$ m filters and sterilized in vials. WGP 1,000 ml, CSP 2,000 ml, TKP 2,000 ml, EAP 2,000 ml, AMP 2,000 ml and PVP 2,000 ml was produced with wild ginseng 100 g, wild *C. sinensis* 150 g, *T. kirilowii* root 300 g, *E. alatus* 300 g, *A. membranaceus* 300 g, and *P. vulgaris* 300 g, respectively. Soram nebulizer solution 1,500 ml was produced with wild ginseng 200 g, and wild *C. sinensis* 200 g. Each nebulizer therapy was performed with this solution and an ultrasonic nebulizer (OMRON, NE-U17) for 20 min.

Soramdan S was made out of wild ginseng and high-temperature, high-pressure processed ginseng in the ratio of 7:3. Powdered herbs (4 g) were mixed with honey (4 g) to make an 8-gram pill. It was then wrapped with gold foils. Hangamdan S was made out of *Cordyceps militaris*, *Panax ginseng* radix, *Commiphora myrrha*, *Bovis* calculus, margarita, processed *Boswellia carteri*, processed *Panax noto-ginseng* radix, processed *Cremastra appendiculata* tuber at the ratio of 3:2:2:2:2:4:4. These were ground and filled in 500-mg capsules.

Han et al. [5] reported a case of a metastatic breast cancer patient who could not continue chemotherapy due to severe pancytopenia, but accomplished a complete remission of the metastatic lung lesions with only KMT (including WGP and CSP). Lee et al. [6] reported a case of non-small cell lung cancer that significantly decreased and remained stable for more than 6 months by only using KMT, including WGP, CSP, TKP as well as the oral intake of Soramdan made out of wild ginseng. They also reported another case of metastatic bladder cancer. The patient's metastatic lung lesions were resolved with KMT only, including the oral intake of Hyunamdan, Hangamdan S and by inhaling the Soram nebulizer solution [7].

*C. sinensis* played a role in modulating the immune system and act as an adjuvant in cancer therapy [8]. The *T. kirilowii* extract has significant inhibiting properties on angiogenesis and tumor cell growth [9]. Kim et al. [10] reported a hot water extract of *E. alatus* (Thunb.) Sieb has a powerful antiproliferative, antioxidative and apoptosis-inducing effect on the SKRB3 human breast cancer cell line. Shon et al. [11] reported that an AMP solution inhibits a free radical formation in HL60 cells. *P. vulgaris* has also been known to have multi-target, multi-pathway effects on anticancer mechanisms [12].

In this case, KMT including various kinds of herb pharmacopunctures, nebulization and oral intake, has been used instead of chemotherapy to treat a recurrent metastatic breast cancer patient. The combination of herbs and pharmaceutical forms as well as administration routes had been changed according to the stage of disease and the general condition of the patient. However, in review of the whole process, it seems that PVP might play a significant role to treat new lymphadenopathies. As this is an estrogen receptor-positive tumor, it is possible that, what is being observed here, is as antiestrogen activity of one of the natural products. The lymphadenopathies can occur due to inflammation. The resolution of lymph node enlargement could be from the anti-inflammatory effect of the herbs. *P. vulgaris* has been reported to exert an antiestrogenic effect [13] and anti-inflammatory activity [14].

As a result, all the lesions resolved and the patient has remained in a stable condition for more than 6 months. She was never treated with modern chemotherapy but with KMT alone. It is impossible to draw any conclusions from the effect of KMT in metastatic breast cancer with 1 case only. This case proposes a clue to use PVP more actively in the treatment of metastatic lymphadenopathy of breast cancer. It also proposes a primitive protocol to use WGP, EAP, Soram nebulizer solution inhalation and the oral intake of Soramdan S and Hangamdan S in the maintenance therapy to prevent a recurrence of breast cancer. More case reports and clinical studies are necessary to establish stronger evidence of the effectiveness of these therapies.

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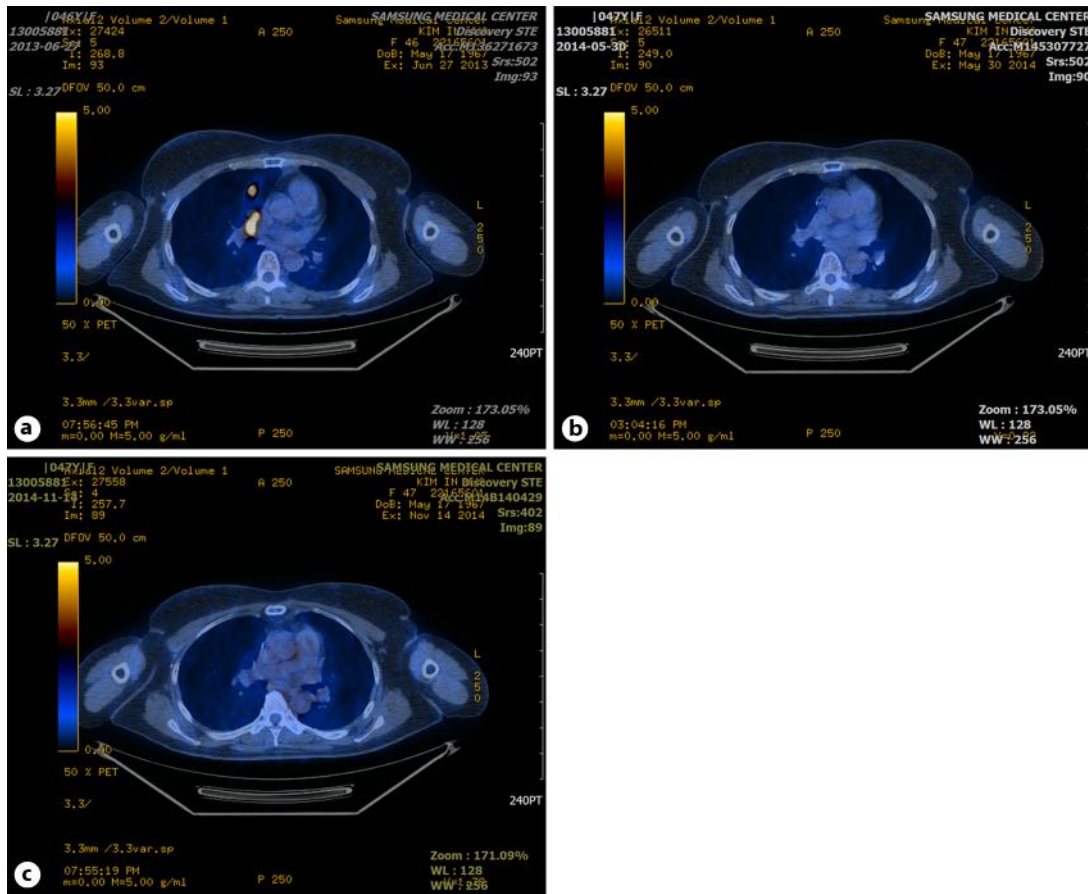
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**Table 1.** Prescriptions from August 2, 2013, to December 5, 2014

1st prescription (from August 2 to December 16, 2013)	Wild ginseng pharmacopuncture 10 ml intravenous (3 times a week) <i>C. sinensis</i> pharmacopuncture 10 ml intravenous (3 times a week) <i>T. kirilowii</i> pharmacopuncture 10 ml intravenous (3 times a week) <i>E. alatus</i> pharmacopuncture 10 ml intravenous (3 times a week) <i>A. membranaceus</i> pharmacopuncture 10 ml intravenous (3 times a week)
2nd prescription (from December 18, 2013, to June 27, 2014)	Wild ginseng pharmacopuncture 10 ml intravenous (3 times a week) <i>C. sinensis</i> pharmacopuncture 10 ml intravenous (3 times a week) <i>T. kirilowii</i> pharmacopuncture 10 ml intravenous (3 times a week) <i>E. alatus</i> pharmacopuncture 10 ml intravenous (3 times a week) <i>P. vulgaris</i> pharmacopuncture 10 ml intravenous (3 times a week)
3rd prescription (from July 1 to December 5, 2014)	Wild ginseng pharmacopuncture 10 ml intravenous (3 times a week) <i>E. alatus</i> pharmacopuncture 10 ml intravenous (3 times a week) Soram nebulizer solution 8 ml inhalation q.d. (3 times a week) Soramdan S 8 g p.o. (3 times a week) Hangamdan S 1 g p.o. t.i.d. (daily)

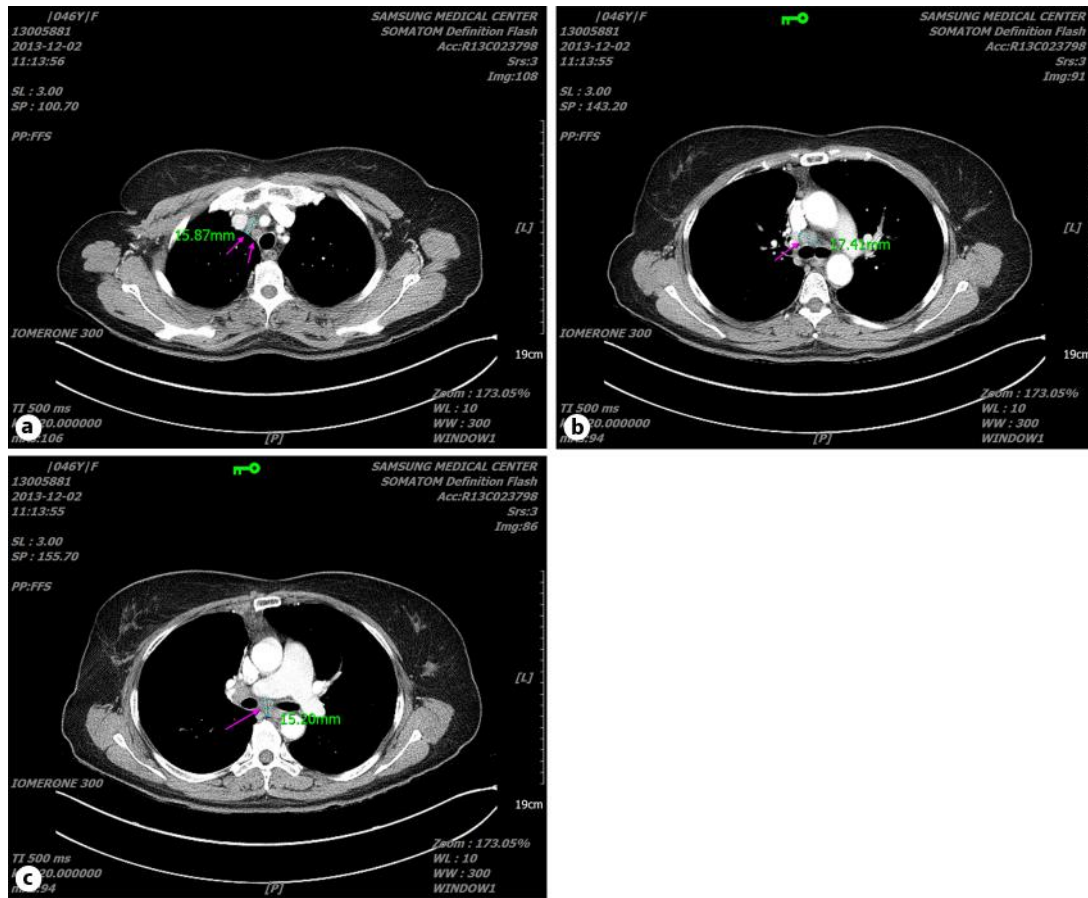
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**Fig. 1.** PET-CT images. **a** Metastatic lesions in the RUL and pulmonary hilum on June 27, 2013. **b** Complete resolution of the lesions in **a** on May 30, 2014. **c** Cancer-free stable condition on November 14, 2014.

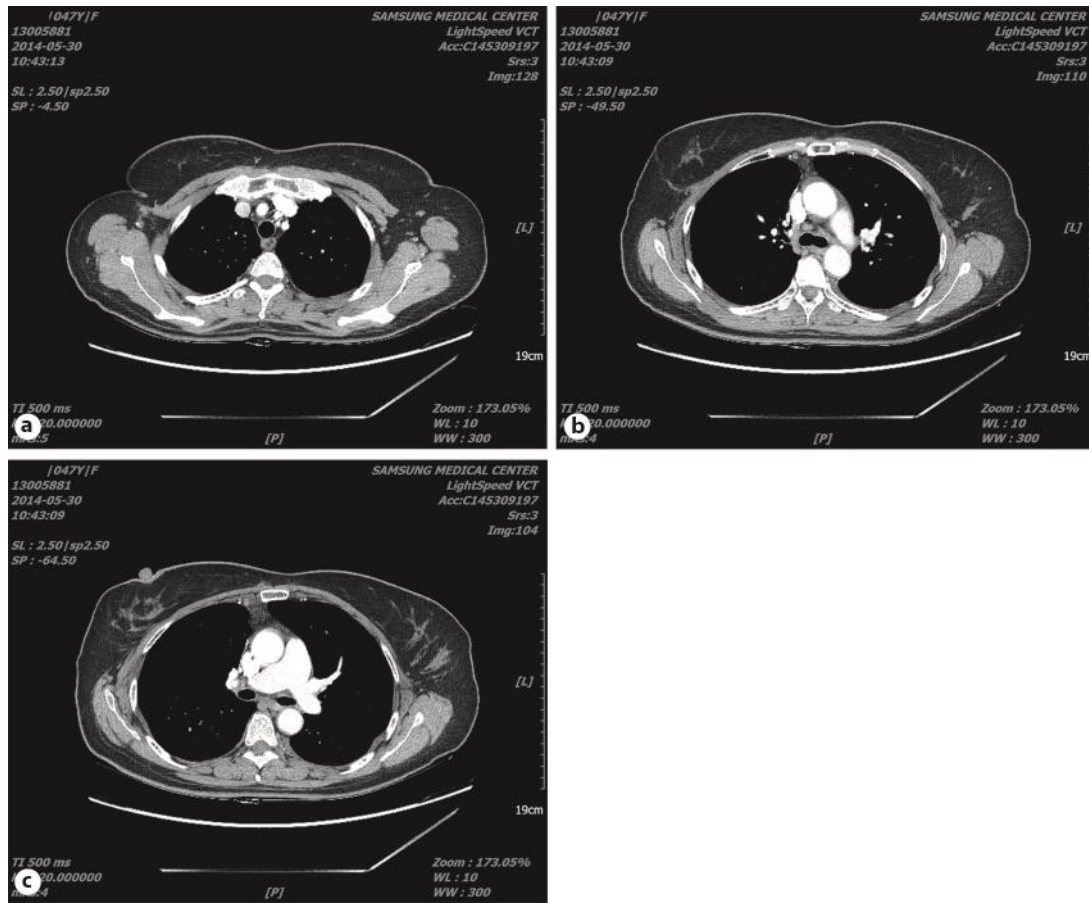


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**Fig. 2.** CT images on December 2, 2013. Arrows indicate the enlarged paratracheal lymph nodes (a), the right hilar lymph nodes (b), and the subcarinal lymph nodes (c).

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**Fig. 3.** CT images of May 30, 2014. **a** Paratracheal lymph nodes. **b** Right hilar lymph nodes. **c** The subcarinal lymph nodes were subsided in comparison to those in figure 2.