### Supplemental materials.

### 1. Non-invasive breast cancer with mastectomy only

- Diagnosis: Abnormal findings in your breast were detected during a recent mammography; therefore, an additional biopsy was performed. You were then diagnosed with breast cancer in situ. You have basic blood and hormonal tests.

- Symptoms: No specific symptoms

- Treatment: You require surgery to remove your whole breast. If your tumor is found to be hormone receptor-expressing on your blood test, you will have to receive anti-hormone agents for 5 years.

- Progress and prognosis: Pain at the operation site may last for a substantial amount of time. You require 4 to 6 weeks for the operation wound to heal. You may have some discomfort in your arm or shoulder at the surgical site for approximately 1 year, which will gradually improve via exercise. You may feel a decrease in your femininity because of removal of your breast. If required, hormonal therapy frequently may cause hot flushes and rarely an increased risk of endometrial cancer. You should have regular follow up visits for breast examination and mammography every 6 months or 1 year. Your 5 year survival probability is 99 to 100% and the risk of breast cancer recurrence is approximately 5%.

## 2. Non-invasive breast cancer with mastectomy and followed by reconstruction

- Diagnosis: Abnormal findings in your breast were detected during a recent mammography; therefore, an additional biopsy was performed. You were then diagnosed with breast cancer in situ. You have basic blood and hormonal tests.

- Symptoms: No specific symptoms

- Treatment: You require surgery to remove your whole breast. Breast reconstruction surgery is performed during the initial surgery or several years later. If your tumor is found to be hormone receptor-expressing on your blood test, you will have to receive administer anti-hormone agents for 5 years.

- Progress and prognosis: Pain at the operation site may last for a substantial amount of time. You require 4 to 6 weeks for the operation wound to heal. You may have some discomfort in your arm or shoulder at the surgical site for approximately 1 year, which will gradually improve via exercise. The impact on your femininity will be minor due to breast reconstruction. If required, hormonal therapy frequently may cause

hot flushes and rarely an increased risk of endometrial cancer. You should have regular follow up visits for breast examination and mammography every 6 months or 1 year. Your 5 year survival probability is 99 to 100% and the risk of breast cancer recurrence is approximately 5%.

### 3. Non-invasive breast cancer with breast-conserving surgery and radiation therapy

- Diagnosis: Abnormal findings in your breast were detected during a recent mammography; therefore, an additional biopsy was performed. You were then diagnosed with breast cancer in situ. You have basic blood and hormonal tests.
- Symptoms: No specific symptoms
- Treatment: You require breast-conserving surgery, which removes not all breast but only cancer lesion. After surgery, you should receive radiation therapy in order to lower the risk of recurrence. You require 5 to 6 weeks of radiation therapy (5 days per week, 5 minutes per session). If your tumor is found to be hormone receptor-expressing on your blood test, you will have to receive anti-hormone agents for 5 years. Progress and prognosis: Pain at the operation site may last for a substantial amount of time. Although the operational wound remains in your breast, most of the breast and nipple is preserved. Radiation may cause pigmentation or itchiness of the skin. If required, hormonal therapy frequently may cause hot flushes and rarely an increased risk of endometrial cancer. You should have regular follow up visits for breast examination and mammography every 6 months or 1 year. Your 5 year survival probability is 99 to 100%

# 4. Invasive breast cancer with surgery (mastectomy or breast-conserving surgery), radiation therapy and/or chemotherapy

and the risk of breast cancer recurrence is approximately 5 to 10%.

- Diagnosis: Abnormal findings in your breast were detected during a recent mammography; therefore, an additional biopsy was performed. You were then diagnosed with early breast cancer. You have basic blood and hormonal tests.
- Symptoms: You can feel a mass in your breast and experience nipple discharge or skin irritation or dimpling. There are no specific symptoms.
- Treatment: You require surgery to remove your breast (a mastectomy or breast-conserving surgery) and the removal of some of the lymph nodes under your arm. If you undergo breast-conserving surgery, you

should receive radiation therapy in order to lower the risk of recurrence after surgery. You require 5 to 6 weeks of radiation therapy (5 days per week, 5 minutes per session). If you are at risk of recurrence, you should receive adjuvant chemotherapy. Chemotherapy means the administration of an anticancer drug into a vein in your arm. You have to visit an outpatient clinic every 3 to 4 weeks for 3 to 6 months. If your tumor is found to be hormone receptor-expressing on your blood test, you will have to receive anti-hormone agents for 5 years. In case of mastectomy, breast reconstruction may be delayed until a later date.

- Progress and prognosis: Pain at the operation site may last for a substantial amount of time. You require 4 to 6 weeks for the operation wound to heal. You may have some discomfort in your arm or shoulder at the surgical site for approximately 1 year, which will gradually improve via exercise. You may feel a decrease in your femininity because of removal of your breast. Twenty to thirty percent of patients with lymph node removal can suffer from edema, numbness, or motor disturbance around the operation site. Radiation may cause pigmentation or itchiness of your skin. If you receive adjuvant chemotherapy, you may experience loss of appetite, nausea, vomiting, myalgia, numbness, or edema. Chemotherapy may lower your hematopoietic function and increase the risk of infection. If required, hormonal therapy frequently may cause hot flushes and rarely an increased risk of endometrial cancer. You are likely to experience a number of emotions, from fear of recurrent cancer or death from cancer to depression.

You should have regular follow up visits for breast examination and mammography every 3 to 6 months for 3 years and examination to screen for metastasis every 1 year. Your 5 year survival probability is 92 to 98% and the risk of breast cancer recurrence is approximately 15 to 25%.

# 5. Locally advanced breast cancer with radical mastectomy and radiation therapy

- Diagnosis: Abnormal findings in your breast were detected during a recent mammography; therefore, an additional biopsy was performed. You were then diagnosed with early breast cancer. You have basic blood and hormonal tests. You have additional tests such as ultrasonography, computed tomography, or MRI to evaluate cancer stage.
- Symptoms: You can feel a mass in your breast and experience nipple discharge or skin irritation or dimpling. If cancer cells spread to your lymph nodes, you may feel masses in your armpit.
- Treatment: You require surgery to remove your whole breast and lymph nodes under your arm. You should receive radiation therapy after surgery. You require 5 to 6 weeks for radiation therapy (5 days per

week, 5 minutes per session). As you are at risk of recurrence, you should receive adjuvant chemotherapy. Chemotherapy means the administration of an anticancer drug into a vein in your arm. You have to visit an outpatient clinic every 3 to 4 weeks for 3 to 6 months. If your tumor is found to be hormone receptor-expressing on your blood test, you will have to receive anti-hormone agents for 5 years. In case of mastectomy, breast reconstruction may be delayed until a later date.

- Progress and prognosis: Pain at the operation site may last for a substantial amount of time. You require 4 to 6 weeks for the operation wound to heal. You may have some discomfort in your arm or shoulder at the surgical site for approximately 1 year, which will gradually improve via exercise. You may feel a decrease in your femininity because of removal of your breast. Twenty to thirty percent of patients with lymph node removal can suffer from edema, numbness, or motor disturbance around the operation site. Radiation may cause pigmentation or itchiness of your skin. If you receive adjuvant chemotherapy, you may experience loss of appetite, nausea, vomiting, myalgia, numbness, or edema. Chemotherapy may lower your hematopoietic function and increase the risk of infection. If required, hormonal therapy frequently may cause hot flushes and rarely an increased risk of endometrial cancer. You are likely to experience a number of emotions, from fear of recurrent cancer or death from cancer to depression.

You should have regular follow up visits for breast examination and mammography every 3 to 6 months for 3 years and examination to screen for metastasis every 1 year. Your 5 year survival probability is 70% and the risk of breast cancer recurrence is over 50%.

### 6. Inoperable locally advanced breast cancer

- Diagnosis: Abnormal findings in your breast were detected during a recent mammography; therefore, an additional biopsy was performed. You were then diagnosed with early breast cancer. You have basic blood and hormonal tests. You have additional tests such as ultrasonography, computed tomography, or MRI to evaluate cancer stage.
- Symptoms: You can feel a mass in your breast and experience nipple discharge or skin irritation or dimpling. If cancer cells spread to your lymph nodes, you may feel masses in your armpit.
- Treatment: You require chemotherapy to decrease the cancer size before surgery. Chemotherapy means the administration of an anticancer drug into a vein in your arm. You have to visit an outpatient clinic every

3 to 4 weeks for 3 to 6 months. If the cancer size us reduced following chemotherapy, you may choose to undergo surgery to remove your whole breast and lymph nodes under your arm. You should receive radiation therapy after surgery. You require 5 to 6 weeks for radiation therapy (5 days per week, 5 minutes per session). As you are at risk of recurrence, you should receive adjuvant chemotherapy. If your tumor is found to be hormone receptor-expressing on your blood test, you will have to receive anti-hormone agents for 5 years. In case of mastectomy, breast reconstruction may be delayed until a later date.

- Progress and prognosis: During chemotherapy, you may experience loss of appetite, nausea, vomiting, myalgia, numbness, or edema. Chemotherapy may lower your hematopoietic function and increase the risk of infection. Pain at the operation site may last for a substantial amount of time. You will require 4 to 6 weeks for the operation wound to heal. You may have some discomfort in your arm or shoulder at the surgical site for approximately 1 year, which will gradually improve via exercise. You may feel a decrease in your femininity because of removal of your breast. Twenty to thirty percent of patients with lymph node removal can suffer from edema, numbness, or motor disturbance around the operation site.

Radiation may cause pigmentation or itchiness of your skin. If required, hormonal therapy frequently may cause hot flushes and rarely an increased risk of endometrial cancer. You are likely to experience a number of emotions, from fear of recurrent cancer or death from cancer to depression.

You should have regular follow up visits for breast examination and mammography every 3 to 6 months for 3 years and examination to screen for metastasis every 1 year. Your 5 year survival probability is 70% and the risk of breast cancer recurrence is over 50%.

# 7. Loco-regional recurrent breast cancer

- Diagnosis: You have already received treatment for breast cancer. Biopsy, ultrasonography, CT, and other tests were performed during follow-up visit. You were diagnosed with breast cancer recurrence.
- Symptoms: You can feel a mass and occasionally a reddish patch or itchy lesion at your operational site.

  Additionally, you may experience severe pain, arm edema, or hemorrhage at the recurrent site.
- Treatment: You require surgery to remove the cancer recurrence. You then require 5 to 6 weeks of radiation therapy (5 days per week, 5 minutes per session). After radiation therapy, you require chemotherapy. You have to visit an outpatient clinic for chemotherapy every 3 to 4 weeks for 3 to 6 months. If your tumor is found to be hormone receptor-expressing on your blood test, you will have to receive anti-

hormone agents for 5 years.

- Progress and prognosis: Pain at the operation site may last for a substantial amount of time. Radiation may cause pigmentation or itchiness of your skin. If you receive adjuvant chemotherapy, you may experience loss of appetite, nausea, vomiting, myalgia, numbness, or edema. Chemotherapy may lower your hematopoietic function and increase the risk of infection. If required, hormonal therapy frequently may cause hot flushes and rarely an increased risk of endometrial cancer. You are likely to experience a number of emotions, from fear of recurrent cancer or death from cancer to depression.

You should have regular follow up visits for breast examination and mammography every 3 to 6 months for 3 years and examination to screen for metastasis every 1 year. Your 5 year survival probability is 50% and the risk of breast cancer recurrence is over 50%.

#### 8. Metastatic breast cancer

- Diagnosis: Abnormal findings in your breast were detected during a recent mammography; therefore, an additional biopsy was performed. You were then diagnosed with breast cancer and the cancer was found to have spread to other organs.
- Symptoms: You can feel a mass in your breast and experience nipple discharge or skin irritation or dimpling. If cancer cells have spread to your lymph nodes, you may feel masses in your armpit. Symptoms may vary depending on the organs affected by metastases. You may experience a dry cough and dyspnea in lung metastasis, headache and vomiting in brain metastasis, and pain in bone metastasis.
- Treatment: Treatment goals in systematic metastasis are relief of symptoms, prolongation of survival, and improvement of quality of life rather than curative treatment. You will require hormonal therapy comprising an oral anti-hormonal agent and chemotherapy. You have to visit an outpatient clinic for chemotherapy every 3 to 4 weeks.
- Progress and prognosis: During chemotherapy, you may experience loss of appetite, nausea, vomiting, alopecia, myalgia, numbness, and edema. Chemotherapy may lower your hematopoietic function and increase the risk of infection. You are likely to experience a number of emotions, from fear of recurrent cancer or death from cancer to depression.

Your 5 year survival probability is 30%, with a mean survival time of 24 to 36 months.