

## Department of Surgery

### Division of Chest Surgery, Breast and Endocrinology Surgery

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#### General Summary

The Divisions of Chest Surgery and of Breast and Endocrinology Surgery were established in June 2005. Since then, all staff members have been active in surgical practice, research, and education. Many studies are ongoing.

#### Research Activities

##### *Chest surgery*

Thoracoscopic surgery is the focus of our clinical activity. This minimally invasive surgery produces fewer postoperative complications and sequelae and is especially beneficial for elderly, high-risk patients. Thoracoscopic surgery requires advanced skills, and we have independently developed total thoracoscopic surgery using only a thoracoscope and video monitors to provide intraoperative views. Our method of thoracoscopic surgery can be used to treat many chest conditions, such as juvenile pneumothorax, peripheral lung nodules, mediastinal tumors, and lung cancer.

Operative procedures, including wedge resection, segmentectomy, lobectomy, and pneumonectomy of the lung, are all safely performed, in addition to resection of mediastinal tumors or the thymus. Surgery for lung cancer requires much more advanced skills and oncological considerations, which have also been independently developed. We select high-risk patients with such complications as advanced pulmonary emphysema, impaired pulmonary function, and extremely high age, as candidates for thoracoscopic surgery. Of the mediastinal procedures, thymectomy is usually performed via thoracoscopy rather than via a conventional median sternotomy. As our thoracoscopic skills have advanced, the indications for thoracoscopic surgery have been safely expanded to include higher-risk patients. In our department more than 90% of the chest operations are performed via thoracoscopy, which we assume to be the highest rate in the world. The minimal invasiveness of thoracoscopic surgery is being investigated with prospective clinical studies. These studies include a comparative study of video-assisted lung cancer surgery with open surgery, an evaluation of video-assisted surgery for bullous lung diseases in elderly persons with impaired lung function, an evaluation of video-assisted surgery for thymic tumors, and an evaluation of video-assisted thymectomy for myasthenia gravis. New devices are also being evaluated in our

clinical studies, such as narrow band imaging for the thoracoscopic diagnosis of benign and malignant lung diseases, and LaparoSonic Coagulating Shears for small thoracotomy.

Many basic research studies are also underway. In the morphological expression-related advancement of molecular genetic analysis of lung cancer, we are investigating whether carcinogenesis of the lung as reflected by CA19-9 activity is an important marker of de novo carcinogenesis. Biological and genetic characteristics of peripheral adenocarcinoma of lung are investigated to establish the most appropriate surgical procedures.

### *Breast and endocrinology surgery*

Current treatment modalities for cancer include surgery, radiation therapy, and anti-cancer chemotherapy. However, responses to anticancer chemotherapy vary with individual tumors, and adverse reactions to therapy may outweigh clinical benefits in some cases. To allow the most effective anticancer agent to be chosen for a given neoplasm, a joint study is in progress at this and other institutions to seek effective drugs for individual patients or cells by analyzing microarrays by means of DNA chips comprising anticancer genes conferring drug susceptibility extracted from tumors.

Sentinel lymph-node navigation has become a standard procedure in breast cancer surgery in Western countries as well as in Japan. However, the use of sentinel lymph node biopsy after preoperative chemotherapy remains controversial. We are investigating its feasibility for standard use, especially after preoperative chemotherapy.

The usefulness of postoperative endocrine therapy for patients with hormone-receptor-positive breast cancer is recognized, but adverse effects, such as osteoporosis caused by aromatase inhibitors, must be considered. A trial to redeem the best therapeutic effect is being performed.

Various antihormonal therapeutic agents have been used for hormone-receptor-positive breast cancer. We are now evaluating some of these new antihormonal agents for patients with metastatic breast cancer refractory to previous antihormonal therapies.

### **Publications**

**Morikawa T.** Thoracoscopic surgery for lung cancer. *Ann Thorac Cardiovasc Surg* 2006; **12**: 383-7.

**Uchida K, Toriumi Y, Kawase K, Tabei I, Yamashita A, Nogi H.** Percutaneous endoscopy-guided biopsy of an intracystic tumor with a mammary ductoscopy. *Breast Cancer* 2007; **14**: 215-8.

**Kinoshita S, Uchida K, Kyoda S, Shioya H, Takeyama H, Morikawa T.** Impact of fine needle aspiration on long-term survival rate and axillary lymph node micrometastasis in patients with early breast cancer. *Breast J* 2007; **13**: 216-7.

**Kinoshita S, Yoshimoto K, Kyoda S, Hirano A, Shioya H, Kobayashi S, Ishiji T, Komine K, Takeyama H, Uchida K, Morikawa T, Sakamoto G.** Malignant melanoma originating on the

female nipple. *Breast Cancer* 2007; **14**: 105-8.

**Nogi H, Kobayashi T, Kawase K, Tabei I, Toriumi Y, Suzuki M, Kawakami M, Morikawa T, Uchida K.** Primary rhabdomyosarcoma of the breast in a 13-year-old girl: report of a case. *Surg Today* 2007; **37**: 38-42.

**Kawase K, Gayed IW, Hunt KK, Kuerer HM, Akins J, Yi M, Grimes L, Babiera GV, Ross MI, Feig BW, Ames FC, Singletary SE, Buchholz TA, Symmans WF, Meric-Bernstam F.** Use of lymphoscintigraphy defines lymphatic drainage patterns prior to sentinel lymph node biopsy for breast cancer. *J Am Coll Surg* 2006; **203**: 64-72.

**Ohii S, Kyoda S, Tabei I, Kouzou Ninomiya K, Sugiyama K, Hashimoto H, Tachibamana T, Ishikawa H.** Establishment and characterization of a cell line (NABCA) derived from metastatic

lymph nodes of breast scirrhous carcinoma. *Human Cell* 2006; **19**: 126-32.

**Shichinohe T, Okushiba S, Morikawa T, Kitashiro S, Manase H, Kawarada Y, Sekido M, Yamamoto Y, Kondo S.** Salvage of a massive esophago-tracheal fistula resulting from a stenting treatment. *Dis Esophagus* 2006; **19**: 299-304.

**Abe M, Hamada J, Takahashi O, Takahasi Y, Tada M, Miyamoto M, Morikawa T, Kondo S, Moriuchi T.** Disordered expression of HOX genes in human non-small cell lung cancer. *Oncol Rep* 2006; **15**: 797-802.

**Miyamoto M, Morikawa T, Kaga K, Ohtake S, Cho Y, Hirano S, Kondo S.** Subcarinal node is the significant node that affects survival in resected

small cell lung cancer. *Surg Today* 2006; **36**: 671-5.

**Yoshida N, Abe H, Ohkuri T, Wakita D, Sato M, Noguchi D, Miyamoto M, Morikawa T, Kondo S, Ikeda H, Nishimura T.** Expression of the MAGE-A4 and NY-ESO-1 cancer-testis antigens and T cell infiltration in non-small cell lung carcinoma and their prognostic significance. *Int J Oncol* 2006; **28**: 1089-98.

**Betsuyaku T, Fuke S, Nasuhara Y, Morikawa T, Kondo S, Nishimura M.** Diverse expression of antioxidants and inflammatory chemokines in terminal bronchiolar epithelium in chronic obstructive pulmonary disease. *Proc Am Thorac Soc* 2006; **3**: 471-2.