Background
Endocrine cancers—those that affect the thyroid, parathyroid, adrenal gland and pancreas—occur in more than 35,000 people in the United States each year. The most common of these, thyroid cancer, is diagnosed in 30,000 patients each year and there are 1,500 deaths from the disease. The burden of thyroid cancer lies disproportionately with women; there are three times as many female patients as male. In fact, thyroid cancer is the fastest growing cancer in the United States. With the exception of ovarian cancer, thyroid cancer is the leading cause of endocrine cancer deaths and is one of few cancers with an increasing mortality rate.

Research into the causes of endocrine cancer and the development of new and better treatments allows new many patients to be cured of the disease. There are currently 350,000 thyroid cancer survivors in the United States, though some of these have persistent or recurrent tumors. UCSF wants the number of survivors to climb even higher and, for those who survive, to be completely free of disease. That is the goal of the Endocrine Surgical Oncology Research Program. The Program was established in 1990. The Program focuses on surgical training combined with basic, clinical and translational laboratory research (using new basic science discoveries to improve patient care). Through this Program, UCSF is improving treatment, while at the same time training tomorrow’s leaders in the care of patients with thyroid cancer and other endocrine tumors.

The Endocrine Surgical Oncology Research Fellowship
Research has borne out what some might suspect—outcomes in thyroid operations improve with surgeons’ experience. It is therefore in the patients’ best interest to be treated by surgeons who have had the opportunity to gain specialized training in endocrine surgery. At UCSF, fellows in the Endocrine Surgical Oncology Research Program provide this opportunity. The Endocrine Surgical Oncology Research Program has a track record of producing groundbreaking results and leaders in the field of thyroid cancer treatment. Each fellow publishes over ten papers in scientific and medical literature. At the conclusion of their training, past fellows have secured faculty appointments at world-class institutions, including: Cornell, Columbia, UCSF, UCSD, Johns Hopkins, Northwestern, Cleveland Clinic, University of Pittsburgh, University of British Columbia, University of Wisconsin, MD Anderson Cancer Center and the University of Iowa.

The Endocrine Surgical Oncology Research Program gains much of its strength from its distinguished leadership. The Program is overseen by a group of endocrine surgical oncologists who are recognized both nationally and internationally for their clinical and research accomplishments.

Research
A key component in the Endocrine Surgical Fellowship Program is research. To achieve the ultimate goal—understanding the mechanisms involved in the initiation and growth of endocrine cancers and using this knowledge to improve the care of patients with these cancers—the Program emphasizes both clinical and laboratory research.

Clinical Research
Rigosltazine and Valproic Acid Clinical Trials: UCSF researchers are testing these newly developed drugs in clinical trials to see if they can enable difficult-to-treat, poorly differentiated thyroid cancers to revert back into differentiated tumors. Once this happens, as the Program has already been able to demonstrate in thyroid cancer cell lines, the tumors may respond to conventional radioiodine treatments.

Amgen and Astrazeneca Clinical Trials: In collaboration with these two drug companies, UCSF researchers have been conducting trials using new “designer” drugs that may give hope to patients with advanced thyroid cancers that are unresponsive to current chemotherapy and radiation treatment. Initial results suggest that the drugs cause tumor regression in about 20% of patients and tumor stabilization in about 50% of patients.

Diagnostic and Prognostic Biomarkers of Thyroid Cancer: UCSF researchers have identified novel diagnostic and extent of disease biomarkers for thyroid cancer. They are conducting a prospective clinical trial to determine the clinical utility of these markers.

Thyroid Tumor Invasion Studies: Researchers in the Program are working to understand the biochemical pathways that allow thyroid tumors to invade surrounding tissues and organs. The goal of this research is to find ways to inhibit this process and stop the spread of thyroid cancer.

Genetic Profiling of Thyroid Cancers: Researchers are determining the genetic profiles of thyroid tumors and correlating these profiles with clinical outcomes. This discovery could lead to diagnostic tests that will allow doctors to judge whether a small tumor is likely to cause serious problems. In cases where tumors show a benign genetic profile, patients could be spared unnecessary surgery and lifelong hormone replacement therapy. Identifying specific genetic profiles may also help to develop new therapies.

Genetic Diseases of Familial Non-Medullary Thyroid Cancer: About 5% of non-medullary thyroid cancers are caused by a genetic defect that is passed down through families. So far, this gene has not been identified. UCSF researchers are conducting genetic studies in collaboration with the Department of Human Genetics in order to identify the responsible gene or genes. Finding the specific gene(s) will both aid diagnosis and drug development and improve survival.

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Dr. Orlo H. Clark leads the Endocrine Surgical Oncology Research Program. He was trained at Cornell University Medical School and UCSF. Dr. Clark did an Endocrine Surgical Fellowship at the Royal Postgraduate Medical Center in London. He has held many leadership positions in the Department of Surgery at UCSF and has been President of the American Association of Endocrine Surgeons, the American Thyroid Association, and the International Association of Endocrine Surgeons. He has also been listed among the top surgeons in America in numerous publications. Dr. Clark has received several occasions for his outstanding teaching accomplishments at UCSF. His research focuses primarily on what makes thyroid and parathyroid cancers grow and spread to other areas of the body. He is also interested in understanding the genetic basis of familial thyroid cancer.

Dr. Quan-Yang Duh is the Chief of Endocrine Surgery. He attended medical school and residency in surgery at UCSF. He has an extensive research program including grants from the NIH, American Cancer Society and the Robert Wood Johnson Foundation. Dr. Kebebew has an extensive research program investigating the mechanisms of thyroid and adrenal cancer. He supervises several endocrine research fellows each year.

Dr. Jessica Gosnell attended medical school at the University of Washington. She did her residency and post-doctoral work at UCSF. East Bay, followed by a fellowship in endocrine surgery at Royal North Shore Hospital, Sydney, Australia. Her research focuses on clinical trials of new drug treatments for thyroid cancer.

Dr. Min Shen attended medical school and completed his residency in surgery at UCSF. His basic science research is focused on identifying new treatment agents for patients with aggressive or invasive thyroid cancer, and developing an endoscopic approach for the removal of these tumors. His research is funded by the National Cancer Institute (NCI) and the American Cancer Society (ACS). Dr. Shen has a strong academic interest in the history of surgery.
Who Will Benefit

The Endocrine Surgical Oncology Program is the embodiment of the UCSF’s three-fold mission of teaching, research and—most important—patient care. Through its fellowships it offers surgeons a chance to specialize and hone their skills. This opportunity directly benefits patients by providing them with the best-trained surgeons possible. In addition, patients are also served by the research accomplished in the Program. The clinical research carried on by the fellows offers the possibility of better treatment for thyroid cancer patients, even those who have exhausted conventional treatment options. The laboratory research will lead to a fundamental understanding of thyroid cancer biology, and help doctors and scientists to develop better diagnostic and predictive tests and drug treatments.

If you are interested in participating in the research studies, please feel free to contact any of the surgeons in the Endocrine Surgical Oncology Research Program.

If you would like to support the Endocrine Surgical Oncology Research Program at UCSF, please contact Regan Botsford, Director of Development, at (415) 502-1573 or rbotsford@support.ucsf.edu.

Please visit us online:
http://endocrine.surgery.ucsf.edu