# HEARTBEAT

ISSUE 3 SPRING 2006

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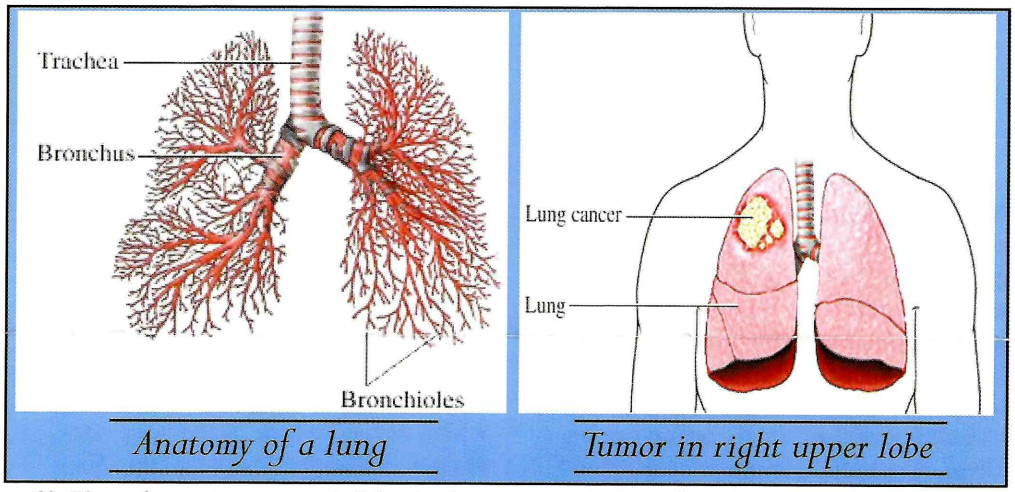
# Cigarettes, Your Lungs, and Cancer

Throughout the last century, what seemed a trivial problem has now turned into a major dilemma. Lung cancer is the number one cancer killer in both men (70/100,000) and women (40/100,000) today. In the United States alone, an estimated **450,000+** preventable smoking related deaths exist per year. Of these deaths, 170,000 occur from lung cancer. The predominant factor causing lung cancer, yes that's right, is cigarette **smoking**. Second-hand smoke, ionizing radiation, asbestosis, heavy metals, and industrial carcinogens are established causes, but much less potent lung carcinogens. Stopping smoking reduces, but never eliminates your risk of developing lung cancer. In an effort to increase patient awareness, it is important to educate patients and their families regarding smoking cessation and socializing in smoke-free environment.




*Anatomy of a lung* *Tumor in right upper lobe*

Some lung cancer patients are asymptomatic at the time of diagnosis with a lung mass detected on a routine chest radiograph (CXR). Patients presenting without symptoms are usually at an early stage in the progression of lung cancer. The demographics regarding lung cancer include age >50, peak age 60-70, and men to women 1.5:1. As the tumor progresses, local growth symptoms include chronic cough, hemoptysis, and obstructive pneumonia. When the disease extends into the surrounding tissue, patients may exhibit hoarseness, chest pain, swelling and shortness of breath. And finally, when metastases spread to the brain and bone, general debility, weight loss, and neurologic symptoms are witnessed.

When patients are first diagnosed with lung cancer, roughly two-thirds are beyond treatment with surgical resection. A meticulous history and physical examination are needed to elicit symptoms of local versus distant disease. Imaging studies include chest radiograph and CT scan of the chest and abdomen looking for metastasis. Confirmation of lung cancer due to an abnormal radiograph study can be done with one of the following: sputum analysis, needle biopsy, or surgical exploration. A metastatic work-up for distant disease will involve a CT scan or MRI of the brain and a bone scan. A relatively new tool in the diagnosis of cancer and the detection of metastases is the PET (positron emission tomography) scan. With this scan, tumors appear as "hot spots" due to increased uptake and metabolism of glusose compared to normal tissue. Currently, it's most significant value is after an abnormal chest xray for further evaluation and identifying metastases in regional lymph nodes and other organs. In the future, it may be possible for a whole body PET scan to replace multiple other scans for staging.

*A healthy lung (l) and a diseased lung (r)*

Lymph nodes >2cm in diameter are strong evidence of mediastinal spread of the tumor; therefore, biopsy should be strongly considered before a chest surgery, if radiographic studies suggest significantly enlarged lymph nodes. Bronchoscopy can be utilized for both

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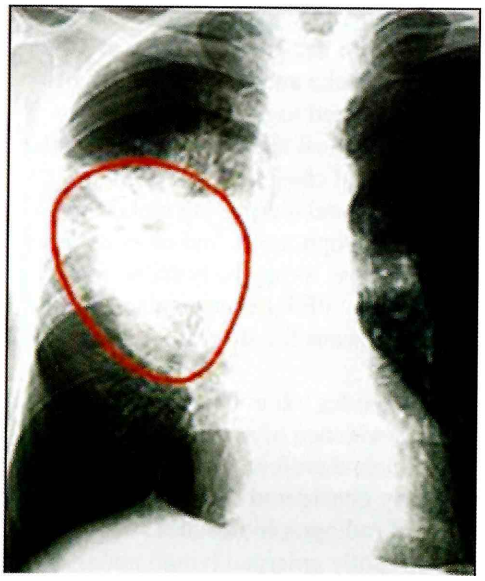
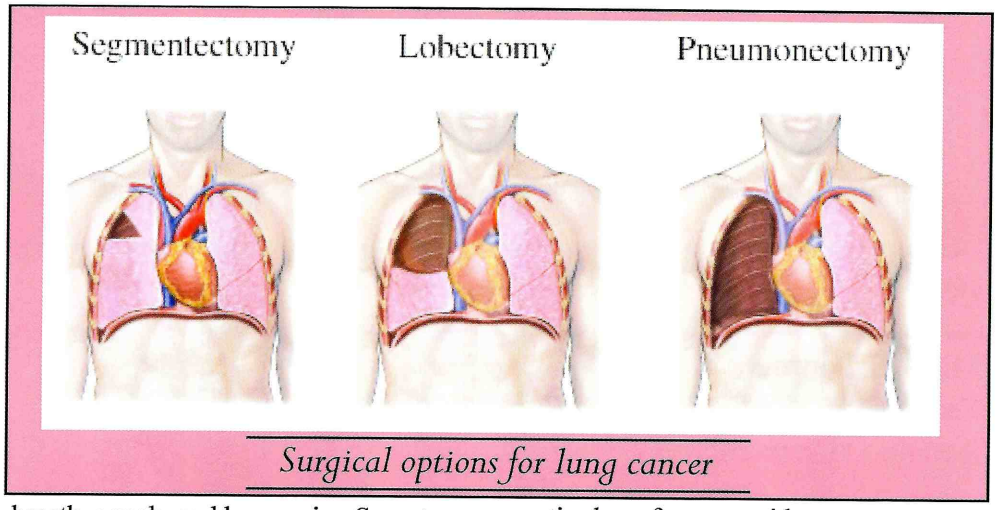
diagnostic and therapeutic measures in the case of lung cancer. The bronchoscope can maneuver through the tiny airway channels allowing for direct acquisition of secretions, cytologic brushes of abnormalities and direct biopsy of suspicious lesions. Accurate clinical staging based on physical exam, CXR, CT scan, and bronchoscopic exam will determine the best treatment options for each lung cancer case.

There are four major types of lung carcinoma: squamos cell carcinoma, adenocarcinoma, small cell carcinoma, and large cell carcinoma. Squamos cell and adenocarcinoma account for 30-35% of all primary tumors. Small cell and large cell carcinoma account for 20-25% and 15%, respectively. Treatment options vary depending on the type of lung cancer and the staging at diagnosis, but include surgical resection, chemotherapy, and radiation therapy. Surgery is the treatment of choice for patients with non-small cell carcinoma; of these people though, only 25% are appropriate candidates for surgical treatment. Combination chemotherapy is used for patients with small cell carcinoma, and occasionally a post-treatment surgical debulking of the primary lesion can be done. Contraindications to surgical resection include extrathoracic metastases, malignant pleural effusion, nerve paralysis, poor general health, severely impaired lung function, and multiple brain metastases. Radiation therapy is used to palliate symptoms, such as shortness of breath, cough, and bone pain. Symptomatic brain metastases are treated with a combination of radiation and corticosteroids.



*Chest x-ray with lung cancer*




*Surgical options for lung cancer*

There are four main surgical operations for patients with lung cancer: 1) wedge-resection, 2) segmentectomy, 3) lobectomy, and 4) pneumonectomy. Wedge resections and segmentectomies are smaller resections reserved for patients with extremely poor pulmonary function unable to tolerate a lobectomy. Lesser resections have an increased rate of recurrence and a decreased long-term survival rate. Lobectomies are among the most common surgical resection, in which the entire lobe of the lung is removed. The right lung has three lobes (upper, middle, and lower) and the left lung has two lobes (upper and lower). Less commonly required is a pneumonectomy, which is removal of the entire lung from one side.

The most important positive treatment for lung cancer is prevention — DON'T SMOKE! And if you have symptoms of a chronic cough or shortness of breath, see your doctor.

## Patient Corner

# *Do you have leg cramps?*

## Claudication: When circulation problems cause leg pain

Leg pain with walking can be a sign of peripheral arterial disease. This pain, also called claudication, happens most often in the calf but can involve the thigh or gluteal muscles. This circulation problem is primarily due to a hardening of the arteries-or atherosclerosis. Your doctor can perform a few simple studies to determine your degree of peripheral arterial disease and give you

*Call your doctor if you have any of these signs:*

- Leg pain brought on by exercise
- Leg pain that stops when you rest
- Numbness, tingling of the lower legs or feet
- Coldness of the lower legs or feet
- Ulcers or sores that don't heal

# Atrial Fibrillation and Blood Thinners

Atrial fibrillation is commonly seen post-operatively after a patient undergoes coronary artery bypass grafting. Over 2.2 million Americans have been diagnosed with this disorder where the heart's two upper chambers quiver instead of beat effectively. Because blood doesn't completely empty out of the heart, it may pool and clot. If a clot dislodges, it may leave the heart and travel to the brain causing a stroke. To prevent a stroke, it is important for patients to be treated appropriately.

Several approaches are used to treat and prevent the abnormal heartbeats. Medications are used to slow rapid heart rates associated with atrial fibrillation. Electrical cardioversion can be used to shock the heart back into a normal heart rhythm. Radiofrequency ablation may be used to destroy tissue and interrupt aberrant electrical signals.

Drugs used to reduce stroke risk include anticoagulant and antiplatelet medications. Anticoagulant drugs, most often Coumadin, thin the blood and make it less prone to clotting. It is important for patients to keep up with their blood work to ensure the blood is properly thinned. Patient compliance is essential for proper treatment of atrial fibrillation.

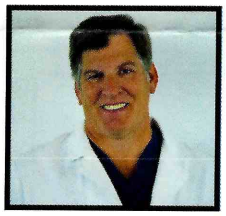
## Welcome!

*Introducing Eva Bernacik to our team. Eva is a 2002 graduate of the University of South Alabama Physician Assistant program. We are excited to have her join us to better serve our patients. As a Physician Assistant she will be working primarily in the operating room, as well as the hospitals and clinics.*

# In Good Hands

Although many think of them simply as *heart surgeons*, the physicians at Cardiovascular Associates are trained in all areas of cardiac, thoracic, and vascular surgery. Their backgrounds include training with the distinguished surgeon Dr. Michael DeBakey of Houston, attendance at various medical schools across the country, and yearly postgraduate courses. All are Fellows of the American College of Surgeons, and hold membership in multiple professional societies.

### *Michael Damrich, M.D.*



General, vascular, cardiovascular and thoracic training with Dr. DeBakey

Diplomate, American Board of Surgery, American Board of Thoracic Surgery

Fellow, American College of Surgeons

### *Carl Maltese, M.D.*

General, vascular, cardiovascular and thoracic training with Dr. DeBakey

Diplomate, American Board of Surgery, American Board of Thoracic Surgery

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### *Ronald O'Gorman, M.D.*

General, vascular, cardiovascular and thoracic training with Dr. DeBakey

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### *William Higgs, M.D.*

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Diplomate, American Board of Surgery, American Board of Thoracic Surgery

Fellow, American College of Surgeons, American College of Chest Physicians, American College of Cardiology

### *Dimitris Kyriazis, M.D.*

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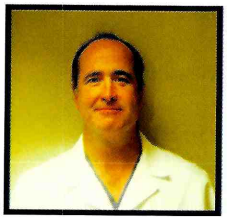
### *David Mull, M.D.*



Cardiovascular and thoracic training at Univeristy of Texas Southwestern Medical Center

Diplomate, American Board of Surgery, American Board of Thoracic Surgery

Fellow, American College of Surgeons

### *Connie Pennington*

Critical Care Registered Nurse and Master of Science in Nursing

### *Terri Rice*

Critical Care Registered Nurse and Master of Science in Nursing

### *Nicole Miller*

Nationally Certified Physician Assistant

### *Christy Paragone*

Nationally Certified Physician Assistant

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## In This Issue...



## Comprehensive List of Surgeries

### Cardiac

*Coronary artery bypass*
*Repair or replacement of valves of the heart*
*Repair of congenital defects and patent ductus arteriosus*
*Implantation of pacemaker and defibrillator devices*

### Thoracic

*Repair of chest wall defects*
*Lung biopsy/Removal of lung lesions/Lung cancer surgery*
*Esophageal repair/Resection of esophageal cancer*

### Vascular

*Carotid endarterectomy*
*Repair of abdominal aortic aneurysms/ Endovascular option*
*Peripheral vascular surgery & peripheral balloon angioplasty*
*Dialysis access grafts*
*Vascular studies*

### Other

*Spinal exposure for neurosurgery and orthopedic surgery*
*Consultant to hyperbaric and wound care center*


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*"We provide comprehensive cardiac, thoracic, and vascular care"*