Evolution of Interventional Pulmonology (IP) aka "Bronchoscopy Service"

By Laura Peluso, RN, BSN

During the past 40 years, the area that was known as "the bronchoscopy suite" has morphed into a high tech computer based branch of pulmonary medicine. Originally located on 6 East, it had 1 small room for procedures and a room for patient recovery. From there, it moved to 5 East for a period of time before relocating in 1990 to its present home on the 3rd floor, south wing. Now it is known as Interventional Pulmonology which encompasses all the diagnostic and therapeutic procedures that are performed there. From such relatively routine procedures such as bronchoscopies, thoracenteses, and chest tubes, the IP department has evolved into an area that specializes in Pleurx catheters, laser treatment of tumors, airway stent placement, percutaneous tracheostomies, mediastinal lymph node biopsies, and the location and biopsy of small nodules in the lungs using a GPS-like system called Electromagnetic Navigation Bronchoscopy.

We have several new tools to help diagnose our patient's chest abnormalities with a greater measure of safety than more invasive techniques. Two of our new diagnostic tools used to identify and biopsy structures in the chest use ultrasonography to locate lymph nodes and pulmonary nodules. (EBUS) scope has an ultrasound probe (convex probe) at the tip of the bronchoscope. It is used to identify mediastinal lymph nodes that surround the airways. Once the node is located, a small needle is inserted into the node and cells are aspirated. The cells are then placed on slides, stained by cytology techs, and then read by onsite pathologists. Patients can be diagnosed and staged in one procedure. The Radial Endobronchial Ultrasound is a long thin catheter with a miniature

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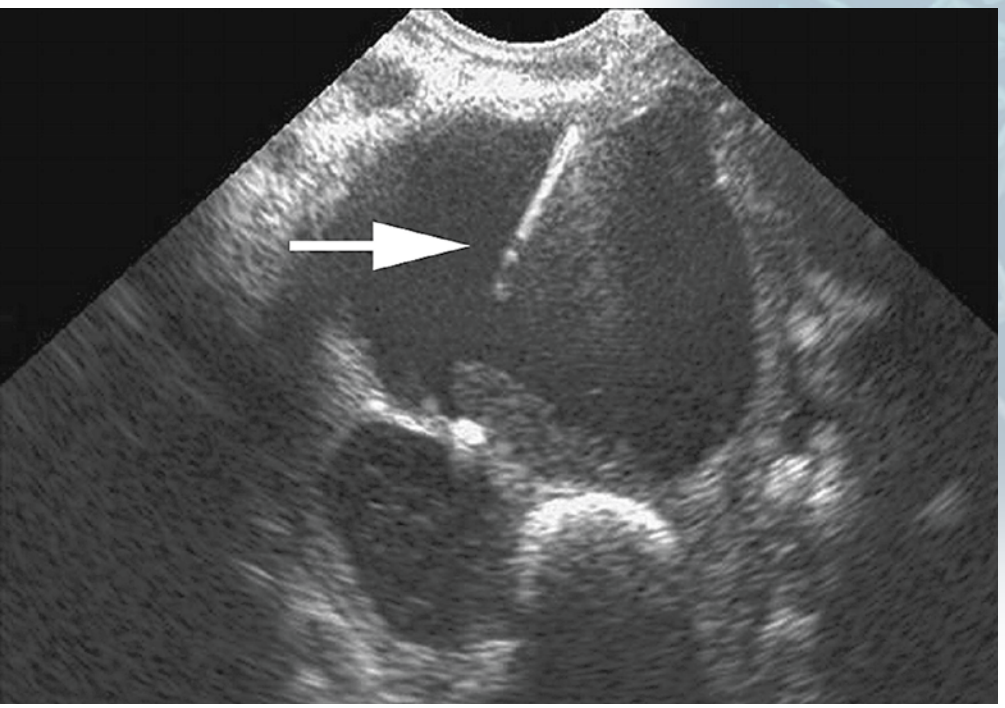

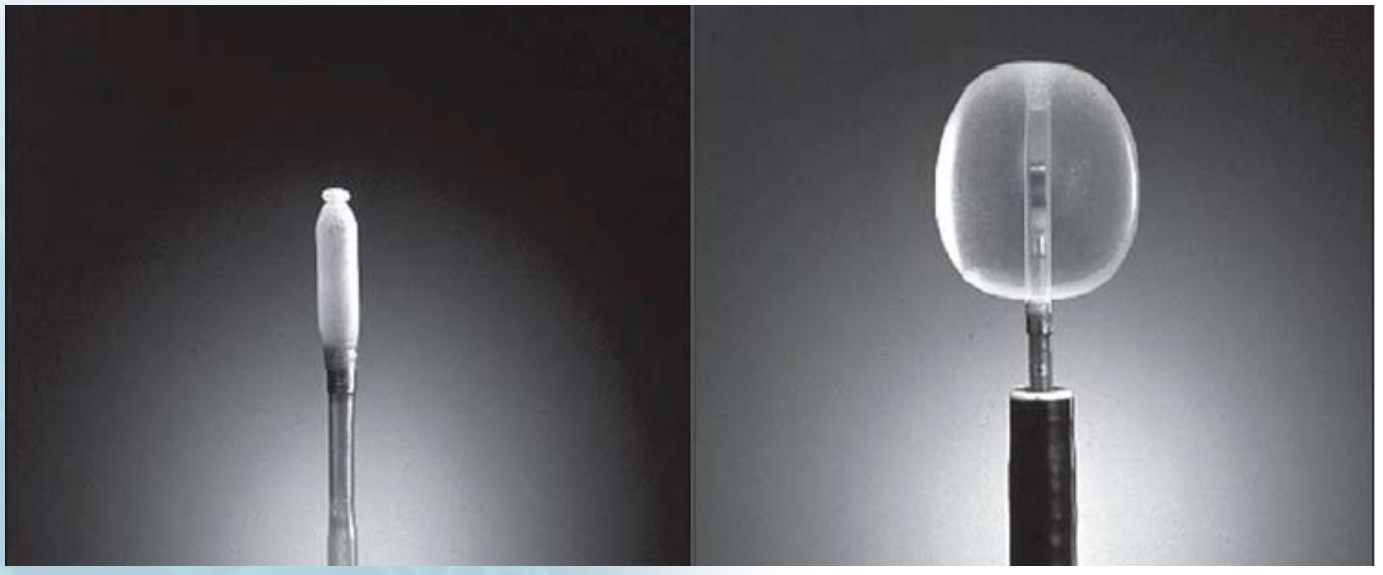

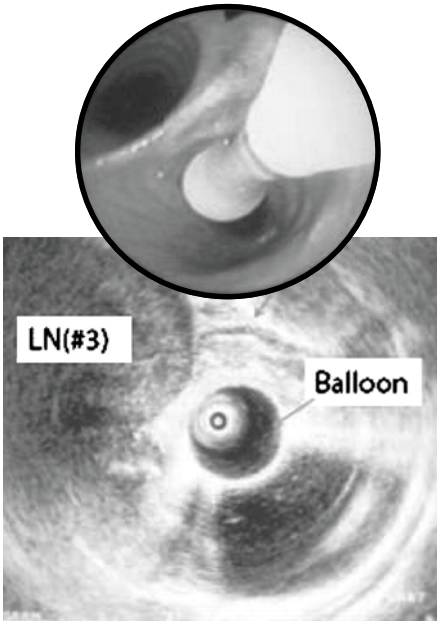

ultrasound probe at the tip. Along with fluoroscopy, the radial probe helps located masses or nodules less than a centimeter in size and assists the physician in taking biopsies, brushings and washings of these difficult to reach places in the distal lung parenchyma.

Our other new tool is called Superdimensions or Electromagnetic Navigation Bronchoscopy. This technology is also used to diagnose pulmonary nodules in the lung. With Superdimensions, a computer program matches the patient's CT scan with the patient's anatomy. The physician places markers in the computer to guide him in steering the catheter in the 3 dimensional chest model. The plan is then loaded into the superdimension computer. During the procedure, a special navigational probe is extended through the bronchoscope and used as a guide to lead the bronchoscopy to the nodule or mass. Once the nodule is located, fluoroscopic guidance is used to obtain specimens. The nurses are all highly trained to assist the physicians in guiding the locator probe to the mass, setting up and operating the Superdimension computer, and obtaining specimens such as biopsies, needle aspirations, brushings and lavage.

The role of the IP nurse is twofold. The technical side of the IP nurse's role is to ensure that all pertinent equipment is setup and functioning properly. The IP nurse assists the physicians in operating the equipment during the case, and afterwards the nurses assist with dismantling, disinfecting and storing the equipment. The IP nurse is also responsible for processing specimens and ensuring that they get to the appropriate lab. The patient care side of the IP nurse's role includes calling the patient the day before the procedure to answer any questions, and to establish a caring bond. On the day of the procedure, the IP nurse does the pre-operative preparation, continues to educate the patient and family, establishes IV access, and continually monitors the patient during the delivery of moderate sedation. Post procedure, the IP recovery nurse continues airway and cardiovascular monitoring while educating the patient and family on post-procedure care and what to anticipate at home. The IP staff have become specialists in the management of difficult airways. Some examples include tracheostomy care, care of transtracheal oxygen catheters, caring for airway stents, and instructions on draining indwelling chest catheters at home. Patient education and support play a big role in our department.

All of these new technologies are used to search for and treat malignancies, infections and other diseases of the lung and chest. But no matter how technologically advanced the department becomes, the Interventional Pulmonary nurses pride themselves on promoting caring nurse-patient relationships and the human touch with each patient.