

EDITORIAL

Current status of Interventional Pulmonology and Future Direction

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The field of interventional bronchoscopy is rapidly expanding and has emerged as an exciting subspecialty in pulmonary medicine. Interventional pulmonology offers new approaches to the management of variety of conditions including pleural disease, pulmonary lesion, thoracic malignancy, airway obstruction due to other causes, asthma and COPD¹.

Current status of Interventional pulmonology started in the second decade of the twenty first century. Guideline from ATS/ERS and ACCP were based on expert consensus². But now after a decade it remains valid and continue to reflect much of the current practice. Four recent advances in technology are extending the reach of interventional pulmonology procedures:

- Endobronchial ultrasound system (EBUS): An ultrasound probe on the tip of a bronchoscope allows Interventional pulmonologist to biopsy lymph nodes with more precision. Linear EBUS is quickly becoming the standard of care for mediastinal staging of patients with lung cancer and for sampling mediastinal lymph node. Although this procedure can and should be performed by most bronchoscopist, the Interventional pulmonologist can take the lead in incorporating EBUS into day-to-day practice. In addition to its role as a staging instrument linear EBUS-TBNA is being used to obtain more tissue in advanced or recurrent lung cancer cases to guide targeted lung cancer therapy in the new Era of personalized cancer therapy³.
- Electromagnetic navigation bronchoscopy : An advanced system that guides the bronchoscope farther than traditional bronchoscopy allows. This system permits biopsy of hard-to-reach abnormal areas of the lung, which would otherwise require more invasive testing. As the clinical

presentation of lung cancer has shifted from central squamous cell carcinoma to predominantly peripheral adenocarcinoma there has been an increasing use of Interventional pulmonology techniques to diagnose peripheral lesion. Electromagnetic navigation bronchoscope are being used to obtain tissue from peripheral lesion⁴. They are in competition with transthoracic needle aspiration performed by interventional radiologist.

- Bronchial thermoplasty is an interventional pulmonology procedure for certain patients with severe asthma that cannot be controlled with medication. Through the fiber optic bronchoscope Interventional pulmonologist applied heat probe to the wall of airway. The heat destroys the smooth muscle layers of airways whose constriction contributes to asthma symptoms⁵.
- Endobronchial valve placement: This can be performed for persistent postoperative air leak and also for bronchoscopic lung volume reduction (BLVR) a less invasive alternative to lung volume reduction surgery⁶.

Current status of Interventional pulmonology in Bangladesh is not satisfactory. As Interventional pulmonology instrumentation is very expansive, availability of advance bronchoscopy suit is limited both in public and private sector⁷. Interventional pulmonology practitioner is also limited because lack of facilities of organized training program and absence of Interventional pulmonology fellow ship course. EBUS and Autofluorescence bronchoscopy started in 2010 only in single public institution. Cryotherapy and Argon plasma coagulation is also performing in limited center. Conventional TBNA and pleuroscopy is being done as wide spectrum. Foreign body removal from the tracheo bronchial tree using flexible bronchoscope is almost regular practice.

Two most important Interventional pulmonology practice in Bangladesh is promising. One is trachio bronchial stenting which give relief of patient from stenosis of the tracheo bronchial tree from chronic disease, long standing intubation in ICU patients, disorganized cartilage, and in case of tracheo bronchial fistula. Another is Indwelling pleural catheter which is very much effective procedure for recurrent malignant pleural effusion. TIPC is usually used but some center where indwelling catheter kit is not available modified way it can be done using central venous catheter kit which can be kept in situ for 3-4 weeks and aspiration can be done when there is accumulation of pleural fluid in the space.

Although interventional pulmonology procedures carry low risks, they are not risk-free. Uncommon complications of interventional pulmonology procedures include:-Pneumothorax, Bleeding, Over sedation, leading to pneumonia or the need for temporary life support. Interventional pulmonology procedures are generally safer and have a shorter recovery time, compared to surgery. However, surgery remains the best option for diagnosis and treatment of many lung conditions.

The future of interventional pulmonology

The future of Interventional pulmonology seems to be very bright. As the lung cancer epidemic continues, except only slightly decreasing trends in developed countries but on the rise in developing countries. For the fore seeable future, patients will continue to present with cancerous central airway lesion that require ablative therapy or stenting. EBUS is both for staging and diagnosis and is rapidly being brought from the academic center to the community. Interventional pulmonology instrumentation is expansive so major concern is what to do in developing countries, where lung cancer is being diagnosed more frequently. Volunteerism on the part of Interventional pulmonology trained personal and generosity on the part of industrialist will remain the only means of transporting Interventional pulmonology to developing countries for the fore seeable future.

In future Interventional pulmonology practice

must become more evidence based. Most of the medical literature in Interventional pulmonology is from single institutional case series. But now Interventional pulmonology research is shifting to randomized controlled multicenter studies, often with sham controls (5,6). This type of research can best serve patients and can only lead to improve the status of Interventional pulmonology within the medical world.

Although it was relatively easy to define IP, it remains difficult to define at present who is an interventional pulmonologist. This is an important question that needs to be defined in future. Possibly a board exam will help to answer the question but that seems many years away in Bangladesh where there is no handsome number of Interventional pulmonology Skill persons. In addition to acquiring procedural skill, Interventional pulmonology fellows must develop knowledge based on area such as thoracic malignancy, complex airway disorder, and pleural diseases⁸. Interventional pulmonology required more training and experience than is available in Bangladesh in most pulmonary and thoracic surgery residency.

We have been fortunate enough to be involved with the Interventional pulmonology community since the beginning. Over last 10 years we have collaborated with and become friends with many Interventional pulmonology practitioners from deferent countries. Interventional pulmonology is an international specialty. The diseases that Interventional pulmonology confronts are global and in future we must make sure that the care Interventional pulmonology offers is also global.



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