

MABIP NEWSLETTER

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CHAIRMAN'S CORNER

Dear MABIPians,

Year 2020 has come to an end and the new year 2021 has begun. COVID-19 pandemic has made a lot of changes in human life in 2020. Stepping into 2021, it is expected that the human race will not be able to go back to the 'old normal' in a short period of time. A lot of adjustments need to be done. Human communications including meetings, congresses, teachings, trainings and gatherings have gone online. The lack of face to face interaction has its own disadvantages, but online

The MABIP has successfully organized its first ever virtual congress in 2020. As for APCB 2021, given the risk of travelling and mass gatherings, the MABIP has decided to hold a virtual congress.

pathway potentiates the ability of the human race all around the world to communicate in a more convenient way. All the COVID-19 frontliners' names should be recorded for posterity. The MABIP has successfully organized its first ever virtual congress in 2020. As for APCB 2021, given the risk of travelling and mass gatherings, the MABIP has decided to hold a virtual congress, following the footsteps of the MABIP 2020 virtual and the 21st World Congress of Bronchology and Interventional Pulmonology 2020 (WCBIP 2020).

HIGHLIGHTS:

- Chairman's Corner
- MABIP Board Updates
- Overseas and Local Experts' Column
- Lung Transplant Program in Malaysia
- Flashback of MABIP 2020 Virtual Congress
- Preparation for APCB 2021 (Virtual)
- Upcoming Events

Despite the current difficult situation, the MABIP want to progress further. The MABIP will not slowdown, instead we will double down in our effort to trainings and teachings to fellows and pulmonologists, including basic and advanced interventions. The MABIP will

continue to support pulmonary fellows to publish journal articles and attend world class congresses.

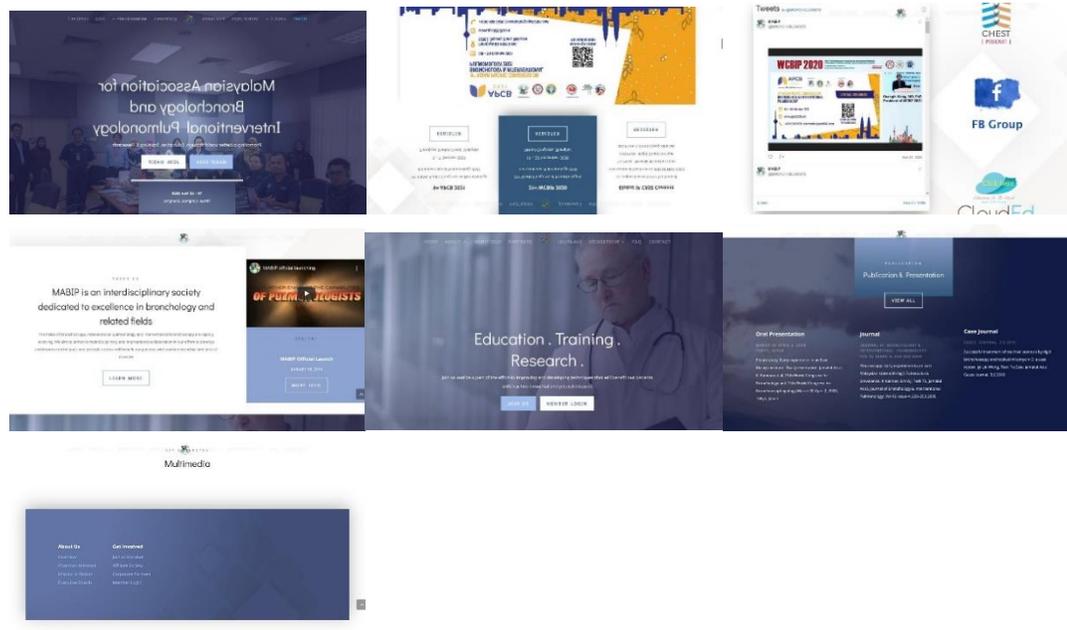
We all hope that the pandemic will come to an end soon, so we can meet again physically like in the good old days.

MABIPians, please continue to take care of yourselves, stay safe and stay strong for a better future!

Best wishes,
Jamalul

MABIP BOARD UPDATES

The MABIP has 190 members now, majority are pulmonologists, fellows, doctors and allied health personnel from the adult division. The MABIP hopes to attract more pediatric members. The aims are to promote pediatric interventional pulmonology and to enhance collaboration between adult and pediatric interventional pulmonology. Additionally, the MABIP is moving to a new site effective 1/1/2021. The MABIP virtual membership card is in the members log in page. The domain name remains unchanged (www.mabip.com)



OVERSEAS AND LOCAL EXPERTS' COLUMN



ASSOC PROF ANANTHAM DEVANAND, MBBS, MRCP (UK)

Deputy Head and Senior Consultant

Singapore General Hospital

Specialty: Respiratory and Critical Care Medicine

Sub-specialties: Interventional Pulmonology, Medical Ethics

Dr Devanand was trained in interventional bronchoscopy and clinical ethics at Beth Israel Deaconess Medical Centre, Harvard Medical School and Thoraxklinik, University of Heidelberg. He has clinical interests in rigid bronchoscopy, advanced diagnostic bronchoscopy, sarcoidosis and medical thoracoscopy. His research interests include lung nodule evaluation and navigational bronchoscopy.

Bronchoscopic Thermal Vapour Ablation Therapy for Advanced Emphysema

Dr Anantham Devanand, MBBS, MRCP (UK)

Static and dynamic hyperinflation have important functional and prognostic consequences for patients with emphysema. The Inspiratory Capacity divided by Total Lung Capacity (i.e. $IC/TLC \leq 25\%$) is an accurate predictor of all-cause mortality. In addition, inspiratory muscles stretched in the hyperinflated state operate in an unfavourable position on their length-tension curve. These physiological factors have fueled the development of lung volume reduction surgery. The NETT study has shown that patients with upper-lobe emphysema and low exercise capacity can get a survival benefit from lung volume reduction surgery. However, the widespread use of the procedure has been limited by narrow inclusion criteria and significant post-operative morbidity such as air-leaks.

Bronchoscopic lung volume reduction aims to get functional benefits of surgery while minimizing procedure-related risks. The 2019 GOLD guidelines state that these interventions can be considered in selected patients with severe emphysema. Detailed emphysema assessment based on Hounsfield unit analysis is now possible with Quantitative CT technology. Emphysema severity is assessed by tissue-to-air ratios while emphysema distribution can be calculated through a heterogeneity index as compared to the ipsilateral lobe. Collateral ventilation can also be evaluated by quantifying fissure integrity.

In the COPDGene study, 97% of the patients with emphysema were found to have intra-lobar heterogeneity of emphysema. Currently, thermal vapour ablation is the only technology with which lung volume reduction is possible at the segmental level to target such intra-lobar heterogeneity.

In the STEP-UP trial, vapour ablation was performed on 1 bronchopulmonary segment of an upper lobe. After a 12-week interval, an additional 1-2 segments in the contralateral upper lobe were treated. This therapy resulted in a 12-point reduction in St George's Respiratory Questionnaire at 1 year. Across the two vapour treatment sessions, COPD exacerbations and pneumonia occurred in over 30% of patients. For this reason, patients are given prophylactic antibiotics and there is a low threshold to start systemic steroids.

Selection criteria includes physiological evidence of air-trapping i.e. $RV \geq 175\%$. Patients should also have a $DLCO \geq 20\%$ and have no hypercapnia. In addition, the procedure is avoided in patients with ongoing anticoagulation because of the risk of life threatening hemoptysis. Only patients who are stable with ≤ 3 COPD-related exacerbations in the previous year are suitable candidates. Medical therapy with bronchodilators, smoking cessation and pulmonary rehabilitation should be optimised. Non-contrast CT with slice thickness of 0.5 – 1.25 mm thickness is used and patients with upper-lobe predominant heterogenous emphysema are chosen. There are no restrictions based on the presence or absence of collateral ventilation. Based on the planning software, bronchopulmonary segments with the highest disease severity, heterogeneity index and segmental volume are the best targets for treatment.

Vapour ablation is ideally performed under general anaesthesia because steam therapy can induce coughing. The target segment is then identified endoscopically and occluded with balloon-catheter before steam is delivered for 3-10 seconds according to the following energy dose: 8.5 cal/g lung tissue. The entire procedure typically lasts for < 15 minutes. A localized inflammatory reaction occurs over the first 4 weeks. Although patients are typically discharged shortly after the procedure, they are intensively monitored in an ambulatory setting at 7, 14 and 28 days. Volume reduction following thermal vapour ablation occurs gradually over 6 weeks and patients can have the second procedure as per the STEP-UP study protocol, 12 weeks after the first procedure.

The potential for this technology has generated understandable excitement. It is not limited by collateral ventilation and no implants are inserted. In addition, it seems theoretically possible to sequentially ablate the most diseased parts of patient's lungs. Nevertheless, in the absence of robust data, vapour ablation should be performed where the resources are available to intensively support patients through the post procedure period and within the context of a comprehensive disease registry.



Soo Siew Choo, Paediatric Respiratory Physician

HOSPITAL TENGKU AMPUAN RAHIMAH, KLANG, MALAYSIA

Dr. Su Siew Choo is a paediatrician and paediatric respiratory physician in Hospital Tengku Ampuan Rahimah, Klang, Malaysia. She graduated as Bachelor of Medical Sciences (Hons), Universiti Putra Malaysia in 2001 and Doctor of Medicine (M.D.), Universiti Putra Malaysia in 2004. She obtained Membership of the Royal College of Paediatrics and Child Health (MRCPCH), RCPCH (UK) in 2008 and practiced as a paediatrician in 2008. She completed her Paediatric Respiratory Medicine sub-specialty training in 2014 from Ministry of Health, Malaysia; and from Queensland Children's Respiratory Centre, Queensland Children's Medical Research Institute, Royal Children's Hospital Brisbane, Queensland University of Technology, Australia.

Urgent Airways in Children

Dr Su Siew Choo, Paediatric Respiratory Physician, Hospital Tengku Ampuan Rahimah, Klang

Hospital Tengku Ampuan Rahimah, Klang started its Paediatric Respiratory services in January 2015 with a steady increase in the number of cases of airway anomalies encountered. While interventional bronchoscopy services have been well established in the adult respiratory fraternity for many years, it is a relatively new field amongst the paediatric respiratory physicians in the country as well as worldwide. Most flexible bronchoscopy assessments in children are for diagnostic evaluation of respiratory disorders with foreign body removal being the commonest indication for interventional bronchoscopy in children.

Managing airway cases in the paediatric population requires a multi-disciplinary approach among paediatric respiratory physicians, otorhinolaryngologists, anaesthetists, radiologists as well as paediatric surgeons, cardiothoracic surgeons and intensivists for more complex cases requiring surgical intervention.

For paediatric respiratory physicians, the "difficult airway" may refer to either upper airway disorders (laryngomalacia, vocal cord paralysis/disorder, subglottic stenosis, subglottic cyst, laryngeal web/cleft) or lower airway disorders (tracheal stenosis, tracheobronchomalacia, external airway compression from vascular ring, endobronchial lesion, foreign body aspiration).

Urgent airways in children include foreign body aspiration, airway compromise (stenosis/atresia), airway trauma, pulmonary toilet and pulmonary haemorrhage. Here are a few case discussions encountered in our centre requiring airway evaluation and intervention from paediatric respiratory physicians, otorhinolaryngologists and anaesthetists.

Case 1: Subglottic Stenosis

4.5 months girl who was hospitalized for subdural, subarachnoid, interhemispheric bleed secondary to non-accidental injury with history of intubation for 5 days for cerebral protection. She developed post extubation inspiratory stridor requiring non-invasive ventilation, and her condition deteriorated rapidly with increased in work of breathing with worsening inspiratory and then biphasic stridor and lethargy.

An urgent airway evaluation in the operating theatre was performed.

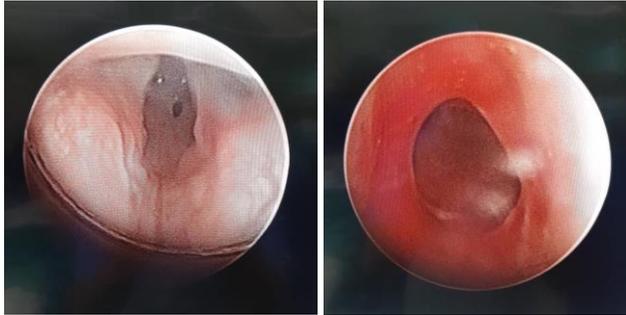


Figure 1a: Subglottic stenosis Cotton Meyer Grade 3 (Pre-dilatation)

Figure 1b: Post-dilatation

Case 2: Tracheal stenosis

2 years 6 months Malay boy with underlying Down Syndrome, Hirschsprung's disease, and hypothyroidism, who had history of an uneventful intubation for colostomy at 11 months old (intubated for a few hours intra-op) with no audible stridor post extubation. He started to have noisy breathing since 6 months old with doctor-documented stridor since 12 months old. He was referred to ENT (FNPLS at 14 months old was normal) and referred to paediatric respiratory physician at 15 months of age.



Figure 2: Complete ring tracheal stenosis at middle and lower thirds of trachea at diagnostic flexible bronchoscopy

Case 3: Foreign body aspiration

3 years 8 months Malay girl who presented with sudden onset of breathlessness and pallor. Her caregiver (maternal aunt) noted half a piece of "cili padi" on the kitchen floor but no witnessed choking. An ambulance call was made and caregiver was advised by the paramedic team to perform the Heimlich maneuver which was unsuccessful. On arrival to the Emergency Department, her oxygen saturation was 89% in room air with respiratory rate of 30 breaths/minute with no audible stridor. Auscultation of her lungs revealed reduced breath sound over right lower zone. She further desaturated to 58% despite on high flow mask oxygen 15L/minute and became cyanosed. She was immediately intubated and stabilized in PHDU, and sent to Hospital Serdang for combined emergency bronchoscope between paediatric respiratory physicians and paediatric otorhinolaryngologist.

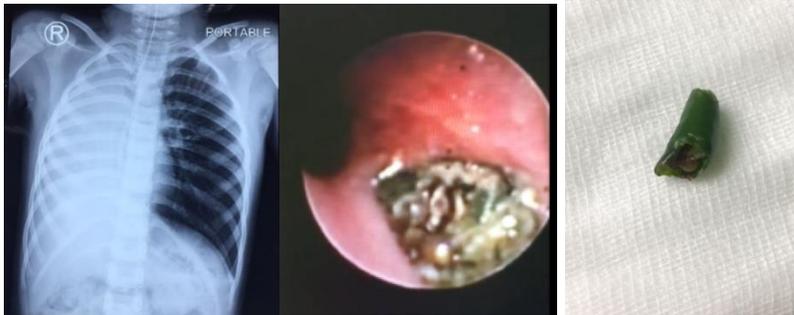


Figure 3a: Chest X-ray

Figure 3b: Foreign body in right main bronchus during bronchoscopy

Figure 3c: Removed foreign body (cili padi)

Case 4: Foreign body aspiration

9-month-old girl with five days history of fever, cough and tachypnoea with no witnessed choking. Physical examination revealed a tachypneic child with mild subcostal recessions and reduced breath sound over the right lung.

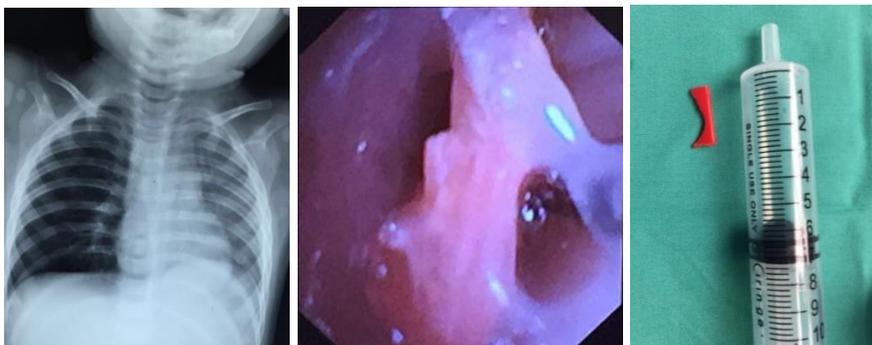


Figure 4a: Chest X-ray

Figure 4b: Foreign body in right main bronchus

Figure 4c: Removed plastic toy object

Case 5: Foreign body aspiration

1 year old boy presented with three-day history of fever, cough, rapid breathing with no witnessed choking. Physical examination revealed tachypnoea, mild subcostal recessions and reduced breath sound over the left lung.



Figure 5a: Chest X-ray

Figure 5b: Foreign body (clove) in left main bronchus during diagnostic flexible bronchoscopy, which was successfully removed with rigid bronchoscopy

In conclusion, clinical history and thorough physical examination are the key indicators that will pick up majority cases of “difficult airway”. An elective (or at least a semi-elective) airway assessment with flexible bronchoscopy is preferred to an acute presentation of “urgent airway” warranting emergency bronchoscopic assessment and intervention. Unavoidable “urgent airways” include foreign body inhalation, pulmonary haemorrhage and airway trauma. The optimal integration of multiple skills in a team includes paediatric respiratory physicians (flexible bronchoscopist), otorhinolaryngologists (rigid bronchoscopist) and skilled anaesthetists trained in paediatric airway.

Figure 6: Multi-disciplinary team approach in managing paediatric airway disorders comprising paediatric respiratory physicians, otorhinolaryngologists, paediatric otorhinolaryngologists and anaesthetists



LUNG TRANSPLANT PROGRAM IN MALAYSIA

The National Lung transplant program has moved to Serdang Hospital since 2019. This is a collaboration between Serdang Hospital and the National Heart Institute (IJN). The lung transplant meeting between IJN and Serdang Hospital is being held on a monthly basis in IJN. There is a pre-lung transplant assessment clinic in Serdang Hospital that accepts referrals from all over Malaysia. Pulmonologists in Serdang can be contacted to discuss cases prior to referrals.

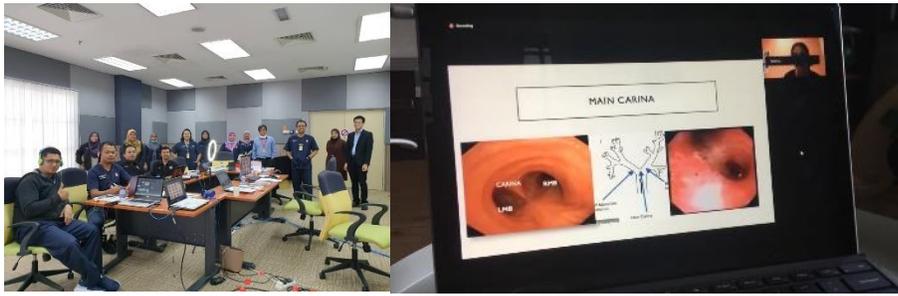
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FLASHBACK TO MABIP 2020 VIRTUAL CONGRESS





The MABIP successfully organized the 6th MABIP Annual Scientific Meeting 2020 as a virtual congress from 2nd – 4th October 2020. The meeting was well attended by local and overseas participants. High quality local and overseas speakers were invited for online presentations. The topics covered included basic bronchoscopic/ pleural procedures, advanced interventional pulmonology procedures, ILD, pulmonary hypertension, lung transplant and pulmonary physiology. Feedbacks from participants were good and encouraging. The MABIP was delighted that knowledge could be passed down and fruitful discussions were still able to be carried out online during this difficult period of COVID-19 pandemic.

PREPARATION FOR APCB 2021 (VIRTUAL)

After some careful discussion looking at the current COVID-19 situation, the MABIP board has decided to conduct a virtual APCB conference in 2021. The MABIP reached this difficult decision reluctantly as this is the socially responsible thing to do to prevent further spread of the pandemic. Postponing the congress is not an option as it will affect the subsequent congress. The MABIP hopes to attract at least 2000 virtual attendees with the much reduced registration fees.

UPCOMING EVENTS

It is still difficult to organize physical workshops this year as COVID-19 pandemic is still raging. Any upcoming events will be announced on the MABIP website. Please check our website or follow us on Twitter (@BRONCHOLOGISTS) for updates.

We're on the Web!

www.mabip.com

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Dr Razul Md Nazri Md Kassim

Dr Soo Chun Ian

Co-opted Members:

Dr Dayang Zuraini Sahadan (Paediatric Representative)

Dr Kumaresh Raj Lachmanan

Prepared by,
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