

APPS Mini-fellowship report

2017

28th November - 9th December, 2018 – Dr. Pankaj C Vaidya

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3rd – 9th December, 2018 – Dr. Ganganath Gunathalika.

Kwong Wah Hospital, Hong Kong

Beijing Children's Hospital, Beijing

Pediatric pulmonology continues to be a relatively new sub-speciality in the Asian subcontinent with very few centres providing structured training and fellowship opportunities to young pediatric pulmonology enthusiasts. In contrast, the burden of lung diseases is ever increasing in the Asian pediatric population with ISAAC phase III study showing a prevalence of self-reported asthma symptoms among 13-14 year olds of upto 6.4%, 6.3% and 10.1% in India, Beijing and Hong Kong respectively - owing to the urbanization and its consequent air pollution and exposure to microbial diversity in living environment.

Also, within the Asian continent there is tremendous variation in the spectrum of illnesses and the way health care is financed. In western world, the bulk of respiratory illnesses in Pediatric Pulmonology services include: cystic fibrosis, interstitial lung disease, gastroesophageal reflux diseases, neuromuscular illnesses, sleep disorders, disorders due to malformations, etc. However, the present profile of Indian pediatric chest services include: asthma, recurrent infections, bronchiectasis, interstitial lung diseases etc. As diagnostic services and awareness increases the profile of patients is bound to change – a transition that young Asian pediatric pulmonologists should be prepared to undertake.

Due to underreporting of some disease entities (Cystic Fibrosis, Primary Ciliary Dyskinesia, Lymphangiomyomatosis etc.), several expensive investigations and therapeutics fail to receive adequate funding by the government. A collaboration of different countries in the Asian continent is an urgent need of the hour to generate epidemiological data to guide allocation of resources and funds to investigate and treat orphan lung diseases.

Asian Pediatric Pulmonology Society awarded three mini - fellowships in 2017, with the aim to foster academic interaction between young Asian Pediatric pulmonologists and experts in the field of respiratory medicine in Hong Kong and Beijing. Following were the highlights of our visit:

1. Hong Kong visit: At Kwong Wah Hospital

a. On our first day – we attended the allergy and asthma clinic – we observed patient – doctor interaction along with computerised documentation of parent interview at each visit, role of different questionnaires (see picture 1) provided to the patients/parents to express level of control of symptoms along with the Spirometry and Peak Expiratory Flow rate measurement.

Most patients with allergic rhinitis underwent nasal smear examination for eosinophils to see the response to intranasal steroids. Use of Nasal saline irrigation /douche methods were re-inforced prior to intranasal steroid spray. The techniques, compliance and method of administration were checked at length by nursing staff.

In the adjacent room, in the sleep clinic follow up we were impressed by the very careful arrangement of BIPAP/NIV masks (see picture 2) based on sizes and brand.

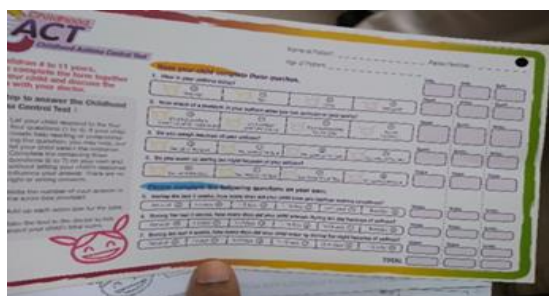


Figure 1 Childhood Asthma Control test Questionnaire

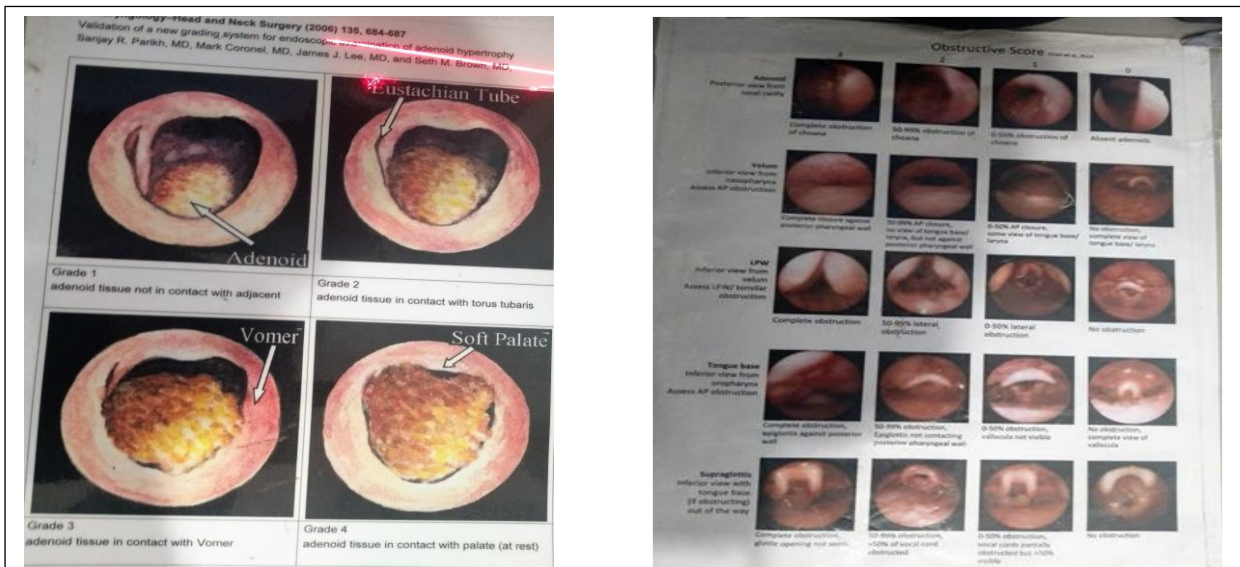


Picture 2. NIV masks arranged and labelled in sleep clinic

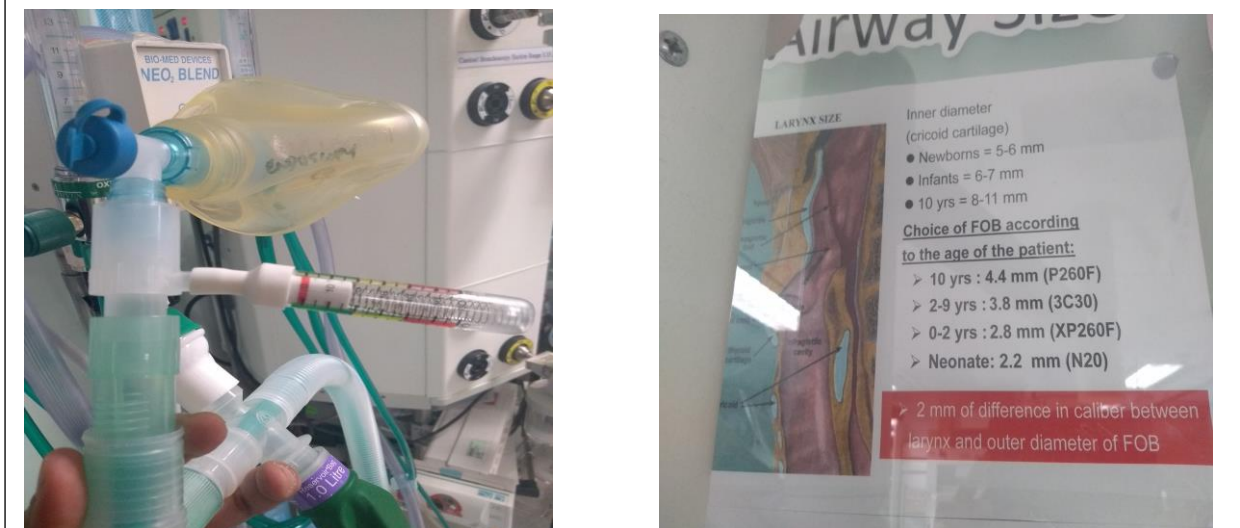
b. On the second day we visited the sleep lab at Kwong Wah Hospital Sleep Centre– Ms. Lau demonstrated the Polysomnography machine and technique of interpretation of reports. After this we attended the PFT lab where we observed technique of Body Plethysmography and Exercise Challenge PFT.

c. On the third day we attended Nasal Endoscopy under guidance of Prof Daniel K Ng –

- i. Parents of OSA patients were shown anatomical cartoons of adenoidal and tonsillar region (see picture 3,4) prior to performing nasal endoscopy. Videos of adenotonsillar hypertrophy of their child at the end of procedure were demonstrated to the parents to appropriately convince them for the need of CPAP and thus ensure compliance.
- ii. At the same setting CPAP titration was done using appropriate size mask and guided by pressure manometer and under direct visualisation of nasal endoscopy (see Picture 5)



Picture 3 and 4 – Adenoidal hypertrophy grading and Obstructive score based on nasal endoscopy.



Picture 5 and 6. CPAP titration during nasal endoscopy

- iii. Multichannel intraluminal Impedance monitoring demonstration was done by Prof Daniel K Ng (picture 6 and 7).
- iv. Endobronchial block for one -lung ventilation was also demonstrated (picture 8 and 9).



Picture 6 and 7 Multichannel intraluminal impedance monitoring



Picture 8 and 9. Demonstration of Endobronchial block for one lung ventilation.

2. Beijing Children's Hospital Visit:

a. First day :

- i. Under the guidance of Prof Zhi – Fei Xu we visited the sleep lab, and discussed research work being conducted at the Beijing Children's Hospital sleep lab. Prof Zhi Fei Xu took a class on the basics of PSG and sleep medicine.
- ii. Next, we attended Bronchoscopy sessions where patients with tracheomalacia underwent follow up bronchoscopy to monitor for epithelialisation/granulation tissue formation at site of balloon expandable stents.

b. Second day:

- i. In the morning we visited respiratory medicine indoor patients and discussed cases and management.

- ii. Post lunch, we visited the PFT lab – observed impulse oscillometry and Spirometry for monitoring lung function in Hematopoietic Stem cell Transplant patients.
- iii. We next visited the Ciliary Lab where we interacted with Prof Zhi-Fei Xu who demonstrated us the Leica 6000MB HSVM unit, procedure of sampling, mounting the slides for diagnosis of Primary Ciliary Dyskinesia.

c. Third day:

- i. We observed interventional pulmonology procedures – cryotherapy delivered via flexible bronchoscopy in a patient with post intubation subglottic stenosis, bronchoscopic cryotherapy for right main stem bronchus ablation, removal of multiple laryngeal papillomatosis using dormia basket.
- ii. Finally we visited the Allergy lab where we were demonstrated the process of Skin Prick Testing and the lab for immunological testing. (see Picture 9 and 10)



Picture 9 and 10 . Skin Prick Test and Phadia 250 for immunol. testing



The benefits of this fellowship are both immediate and long term:

We have been able to share and pick up ideas and technologies from each other which may be easily implementable in our own setting.

This may lead to earlier diagnosis of some conditions which may otherwise not be common in our part of the world.

We feel fortunate to be part of a team of young Asian pediatric pulmonologists and hope this collaboration will eventually benefit science and the patients of the Asia Pacific region.

How it can be improved –

We had an immensely educational experience – more sessions of interventional pulmonology would be beneficial. Pediatric Intensive Care rounds for one day may help new fellows share practices in critical care.

