INDIAN ASSOCIATION OF PAEDIATRIC ANAESTHESIOLOGISTS

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Editorial

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Mumbai

Anaesthesia Considerations for Paediatric Patients in COVID Times: Difficulties and Dilemmas

In the wake of the Corona virus disease-19 (COVID-19) pandemic, the entire healthcare community is facing unique challenges pertinent to their field of expertise. Paediatric anaesthesiologists cater to children in whom anatomic, physiologic and pharmacologic aspects differ from adults. The pathogenesis and clinical findings of COVID-19 presentation in children also differ from that of adults.[1] Anaesthetising a child during the pandemic poses additional challenges. This review aims to discuss certain salient features of COVID-19 in paediatric patients and their implications for paediatric anaesthesiologists.

With the outbreak reaching its peak, there has been a steady increase in the number of paediatric patients infected by COVID-19. The number of COVID-19 infected paediatric patients coming to hospitals for emergency or semi elective procedures is also on the rise. There are guidelines in place for the conduct of anaesthesia in such children.[2] However, there are certain limitations in following these guidelines which can inadvertently cause a breach in protocol, with disastrous consequences for healthcare workers (HCWs) and other patients if not remedied.

According to available international data, the combined rate of asymptomatic, mild and moderate cases in children is much higher than those affected with severe illness. The severity of illness is higher in infants aged less than one year.[3] Globally and in India as well, the attack rate (proportion of the population who become ill after a specified exposure) as well as case fatality rate (proportion of deaths due to a disease compared to total number of patients) of COVID-19, is lower in children than in older adults.[4,5] Though this may seem encouraging, it does increase the number of asymptomatic carriers which pose a hazard to HCWs. The common symptoms of COVID-19 in children are; cough (48.5%), sore throat (46.2%), fever (41.5%), diarrhoea (8.8%), rhinorrhoea (7.6%%), cutaneous manifestations and other nonspecific symptoms. They may also exhibit Kawasaki syndrome like features in later stages of disease or even after recovery.[6,7]Children often develop upper respiratory tract infections (URTIs) due to common respiratory pathogens like respiratory syncytial virus, human influenza virus. It becomes difficult to differentiate between the symptoms caused by non COVID URTIs and a false negative RT-PCR report is a common problem.[8] The chances of detecting the virus can be as low as 32% from the pharyngeal swab.[1] Chest radiographs are not diagnostic. Computed tomography (CT) scan of the chest is highly sensitive which may show peripheral ground glass opacities even in asymptomatic patients.[8] However, performing a CT scan in young children requires sedation, which exposes the anaesthesiologist or paediatrician and radiologists to the risk of exposure to the virus from these carriers. Management of paediatric patients with suspected or confirmed COVID-19 is also complicated by the need for parents and caregivers who are likely to be infected, to accompany the child and therefore present further infection risk to HCWs and other patients.

Wherever possible, telephonic a pre-anaesthetic review should be carried out to avoid exposure to the patient. A video call can be utilised to assess the airway in a syndromic child. According to a study, 0.2% povidone iodine or 1% hydrogen peroxide mouth rinse helps to decrease the viral load in the oral cavity, but have no effect on the tracheal or pulmonary secretions.[1] This can be advised in older children who can follow instructions. The guidelines for conduct of anaesthesia and infection control in the operating room (OR) for a COVID positive patient have been established by many societies.[2,9]They mandate operating in a negative pressure or at least neutral pressure operating room with a designated entry, exit and preoperative holding area.

Detailed below are some practical aspects of the guidelines for the conduct of anaesthesia:

1. The child should be transported to the OR complex wearing a mask whenever possible to enforce even in younger children.
2. Minimum personnel are recommended to be present inside the operating room (OR) during aerosol generating procedures (AGPs). Preferably two experienced anaesthesiologists along with an assistant need to be present during induction, to avoid haste in donning personal protective equipment(PPE) during an emergency situation or adverse event.

3. Donning of PPE needs to be carried out in an appropriate way to prevent any breach in the chain of protection. Unfortunately, fogging and poor visibility are very common with the protective visor/googles, which can add to the difficult predicament of the paediatric anaesthesiologist especially in a challenging intubation or difficulty in securing vascular access scenario.
4. Premedication is highly recommended to minimize crying and coughing which cause aerosolization. Oral premedication is preferred to nasal premedication to avoid sneezing following in the absence of an intravenous line.
5. Whenever possible, intravenous induction is preferred, to prevent dissemination of virus during inhalational induction. Children are averse to needle sticks and the struggle and crying which ensue while trying to secure venous access can well generate aerosols. In the absence of an intravenous line, inhalational induction after premedication may be a better option.
6. The anaesthesia circuit must incorporate two filters, one on the expiratory limb at the machine end and the other at the patient end. For neonates and infants this can increase in the dead space, cause drag on the anaesthetic circuit and hypercarbia. The use of the Jackson Rees modification of the Ayer's T-piece is discouraged considering the high fresh gas flows and open-ended reservoir bag leads to contamination of the OR environment. The closed circuit with small diameter tubing should be available especially for induction in neonates.
7. A rapid sequence induction (RSI) is recommended, one may have to use a modified RSI with gentle bagging to avoid hypoxia during the apnea period in smaller children.[10]
8. Intubation with a cuffed tracheal tube is recommended to ensure a tight seal and prevent leakage of gases. The smallest Microcuff® endotracheal tube is 3.0 mm ID, which is recommended for use in infants weighing more than 3 kg and therefore a cuffed tube cannot be used in smaller neonates. A video-laryngoscope is preferred to increase the distance between the laryngoscopist and the patients' airway.[2]
9. If using a supraglottic airway, second generation devices are preferred as they provide a better seal.
10. Spontaneous ventilation is recommended with a supraglottic airway however, ventilation often needs to be assisted or controlled in smaller children to overcome resistance of the circuit.
11. Plastic covers/barriers can be placed over the patient, which trap the aerosolised viral particles and reduce exposure of OR personnel to high viral loads during high risk aerosol generating procedures (AGPs) like intubation, extubation and endoscopic procedures.[11]
12. The use of an intubation box has been recommended by some anaesthesiologists during AGPs however, they can be cumbersome to use in paediatric patients making an easy intubation difficult. There are no guidelines as to when to remove the box in the absence of an air extraction mechanism without contamination of OR environment.[12]
13. Invasive procedures like central venous catheter or arterial line insertions, can be cumbersome to perform with PPE due to small size of vessels and small margin of error in an already compromised situation.
14. Initially laparoscopic surgery was considered contraindicated in COVID positive patients due to the risk of environmental contamination during desufflation and venting. Recent evidence indicate that laparoscopy could be advantageous due to a self-contained operative field with avoidance of spillage and enabling the surgeon to be slightly remote from the operating field. Smoke evacuation devices and prudent use of electrosurgical devices leads to decrease in the environmental contamination from smoke and insufflated CO_2.[13]
15. Extubation should be carried out in a deep plane preferably to avoid coughing or bucking. The patient should be observed in the OR for an extended period and shifted directly to the ward to minimise exposure to personnel in recovery areas.
16. A minimum of 12-15 air changes should occur before the OR can be used again. The recommendations for disinfection should be stringently followed at the end of the surgery.

In spite of the guidelines, there have been incidences of inadvertent breach of protocol. In a leading hospital in Mumbai, while anaesthetising a COVID positive infant with subdural hemorrhage, the intubating anaesthesiologist was compelled to remove the visor and googles due to poor visibility. The anaesthesiologist had to be quarantined for 14 days thereafter.[14] Apart from vulnerability to infection, anaesthesiologists can also experience adverse mental health issues like anxiety of contracting the virus and spreading the contagion to family members, feeling of loneliness during isolation periods, stress due to financial constraints etc. Many of us have had colleagues contracting the illness and some of our colleagues have sadly succumbed to the infection. The uncertainty and the stress of being a front-line worker can aggravate depression already pervasive due to the pandemic.[15,16]Online training sessions and webinars addressing various aspects of anaesthesia management and providing psychological support are the need of the hour. Anaesthetising a paediatric patient in these trying times is challenging, requires patience and utmost adherence to guidelines. Every institution must have protocols in place, adequate and appropriate PPE and ensure a safe working environment for its health care personnel.

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INSIDE THIS ISSUE

ACTIVITIES: 2019 - 2020

Report on IAPA National Webinar on 'Paediatric Anaesthesia Care in COVID Times' held on July 4th 2020.

The severe acute respiratory syndrome corona virus 2 pandemic 2020 has certainly challenged health care providers caring for patients with this highly communicable disease. At the same time anaesthesiologists have had to ensure they take precautionary measures to protect themselves and their colleagues and family members. Anaesthesiologists have been pushed to the forefront in these times and are particularly at risk since they are predominantly responsible for airway management, which causes wide spread aerosolization of the virus.

Dr Raja Narsing Rao from LVPEI and Dr Muralidhar from Niloufer Hospital, Hyderabad along with the National IAPA took the initiative to organize a very relevant and timely Panel Discussion on Pediatric Anesthesia Care in COVID Times. The experienced panelists took a very practical approach and discussed their hands-on experience dealing with COVID-19 patients.

The discussions were moderated by Dr Elsa Varghese (President, National IAPA), Dr MSRC Murthy (Secretary, National IAPA) and Dr Raja Narsing Rao, Consultant Anaesthesiologist, LVPEI/GVK – EMRI, Hyderabad. The case scenarios were created by Dr Aavula Muralidhar (Treasurer, National IAPA)

The following panelists enriched us with their practical and knowable approach to the various problems discussed: Prof. Sandhya Yaddanapudi (PGIMER, Chandigarh), Dr Chandrika YR (HOD, IGICH, Bangalore), Prof. Ekta Rai (CMC, Vellore), Dr Nandini M Dave (Sr Consultant & Head SRCC Children Hospital, Mumbai), Dr Jayanthi (Sr Consultant KKCTH, Chennai), Prof. Anjolie Chhabra (AIIMS, Delhi), Dr Gita Nath (Consultant, Rainbow Hospital, Hyderabad), Dr Aavula Muralidhar (Associate Professor, Niloufer Hospital, Hyderabad).

The problems were addressed around five case-based discussions. Each case discussion highlighted a different aspect of anaesthetic management during the COVID Pandemic. A case scenario of a child with a foreign body in the airway who required bronchoscopic removal, an aerosol generating procedure (AGP) was discussed by Dr Elsa, Dr Jayanthi and Dr Anjolie on how to prevent and reduce aerosolization and procedures to protect ourselves.

The case of a COVID-19 positive infant requiring emergency surgery for an obstructed hernia was discussed by Dr Murthy, Dr Nandini and Dr Gita Nath. Tracheal intubation and extubation protocols in patients with COVID-19 for emergency surgery were reviewed and the IAPA advisory recommendations were highlighted. The use of viral filters and their problems in children and sterilization of anaesthesia equipment and the operating room were also discussed. 'How to plan elective cases during this pandemic' was dealt by Dr Raja, Dr Chandrika and Dr Murali. They talked about preoperative COVID-19 testing, using PPE kits, use and safe reuse of N95 masks and tracheal intubation with conventional laryngoscopes vs. video-laryngoscopes. A video of tracheal intubation in a neonate using an intubation box was shown. Dr Murthy, Dr Sandhya and Dr Ekta discussed the management of day-care procedures during this crisis. The main focus was on aerosol spread during various anaesthetic techniques; general anaesthesia vs. regional anaesthesia vs. sedation and MAC, inhalational vs. total intravenous anaesthesia and the issues concerning aerosol generation with the various airway devices such as face mask, supraglottic airway devices and endotracheal tubes. Towards the end an active discussion ensued on the psychological and stressful toll this crisis has had on our colleagues working in the fore front.

Over 200 members logged in and were present through the major part of the programme. The participants were actively involved and asked a large number of questions through messages which were moderated by Dr Murthy and discussed by the panelists. The feed back we received was very encouraging and many participants considered it a useful experience

For those members who missed the webinar the following YouTube link: https://youtu.be/2jDcuGcicoE

Report on the July 2020 IAPA Maharashtra Chapter Webinar on 'Paediatric Inhalational Anaesthesia'

Dr Anila Malde,
Mumbai

Webinars on COVID-19 have been doing the rounds and it was time to put the focus back on the basics and advances in paediatric anaesthesia. A Webinar on Paediatric Inhalation Anaesthesia was organised by the Maharashtra State Chapter of the IAPA and the Department of Anaesthesiology of Lokmanya Tilak Municipal Medical College and General Hospital, Mumbai did just that. It was held on the afternoon of 18th July 2020, the net platform was provided by Baxter India Limited.

Dr Anila Malde (Professor & Head, Dept of Anaesthesiology, Lokmanya Tilak Municipal Medical College & General Hospital, Mumbai and President, IAPA Maharashtra Chapter) spoke on the topic 'Learn with fun, the uptake and distribution of inhalation anaesthetic'. This was followed by 'Sailing from the awake to anaesthetised state: the art of inhalational induction' by Dr Nandini Dave (Senior Consultant & Head, SRCC Children's Hospital, Mumbai. 'A visit to the world of evidence-based medicine: high five in paediatric inhalational anaesthesia' was the final talk by Dr. Manish Kotwani (Associate Professor, Dept of Anaesthesiology, Lokmanya Tilak Municipal Medical College and General Hospital, Mumbai).

The Webinar was attended by 175 anesthesiologists who greatly appreciated the clarity of the talks and the Q&A interactions.

IAPA Delhi, a New IAPA State Chapter!

Dr(Col) Rakhee Goyal,
Delhi

The concept of creating an IAPA-Delhi Chapter blossomed in February 2020 when a few anaesthesiologists from government and private institutions in the Delhi NCR, who practice pediatric anaesthesia, got together and made it a reality. The executive committee office bearers (effective for a period of 3 years) were voted in unanimously and include:

President: Dr Ranju Singh (Lady Hardinge Medical College)

Vice- President: Dr (Maj Gen) Navdeep Sethi (Indian Army)

Secretary: Dr (Col) Rakhee Goyal (Madhukar Rainbow Children's Hospital)

Treasurer: Dr Divya Tewari (Madhukar Rainbow Children's Hospital)

The five executive members include: Dr Kavita (Maulana Azad Medical College),Dr Anju Gupta (AIIMS), Dr Geeta Kamal (Chacha Nehru Bal Chikitsalaya),Dr Poonam Motiani (Superspecialty Children's Hospital, Noida) and Dr Deepanjali Pant (Sir Ganga Ram Hospital)

The aim of starting the IAPA Delhi Chapter is to enhance safety for children during surgery through education. On 15th Aug 2020 at 1700 hours, the first academic session will be held as an online Webinar, since the current pandemic deters in-person meetings. The link for registration for this Webinar will be sent by email to all IAPA members. The office bearers will be introduced at the beginning of this Webinar. We look forward to many IAPA members attending.

Legend to the picture:

Top (left to right): Dr Anju Gupta, Dr (Col) Rakhee Goyal, Dr Ranju Singh, Dr (Maj Gen) Navdeep Sethi

Bottom row (left to right): Dr Geeta Kamal, Dr Poonam Motiani, Dr Divya Tewari, Dr Deepanjali Pant, Dr Kavita Rani

GOOD READ

Dr Aparna Williams,
Vellore

1. Lin EE, Nelson O, Isserman RS, et al. Management of neonatal difficult airway emergencies in the delivery room. Pediatr Anesth. 2020;30:544–551.
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Modification of Airway Management: Are They Keeping us Safe or Making us Feel Safe during COVID-19 Pandemic?

Dr Ekta Rai,
Vellore

As anaesthesiologists, we must get more clarity on the effectiveness of the various modifications recommended for management of the airway during this COVID-19 pandemic. Looking back at the 1918 Spanish flu pandemic, a “global second wave” is expected in some parts of world whereas other countries are now facing the first wave of the COVID-19 pandemic. Whatever be the stage, it appears that SARS–COV-2 is here to stay for some more time. Therefore, it is important that we confirm the reliability of some of the methods which claim to protect us health care workers (HCWs) from this infection. This review looks into the publications available regarding the effectivity of some of the airway modifications that have been recommended.

Dos

1. Limit number of people in room while intubating
2. An experienced intensivist or anaesthesiologist should perform intubation.
3. All personnel in the operating room should wear N95 mask, face shield, cap, double gloves, surgical gown and shoe cover
4. Attach viral filters between the face mask, endotracheal tube (ETT) or supraglottic airway device (SAD) and the anesthetic circuit or AMBU bag. 2nd viral filter should be connected between expiratory limb and machine

***Fig 1*: Viral filters between the face mask**

1. Aerosol boxes

These were originally designed by Dr Hsien Yung Lai, Mennonite Christian Hospital, Taiwan.[1] The original design is a 50 × 50 × 40 cm box with two armholes of 10 cm diameter. The side panels are rectangular and there is no front panel.[2] This was conceived as an untested aerosol containment device which got popular, as it appeared to protect us from the droplet exposure. In reality, how effective these boxes are in preventing aerosol dispersion, has not been clinically tested or validated for effectiveness.

***Fig 2*: Aerosol box**

The concept of using an aerosol box is that it acts as a barrier between the patient and the HCW and contains the viral load within the interior of the box. Its usefulness increases when the situation is compounded by the lack of availability of personal protective equipment (PPE). A box with a vacuum creating suction, can create a negative pressure inside and can be more effective.

Jeffrey Dalli and colleagues in a recent simulation-based study have reported some concerns regarding the use of the aerosol boxes. These include the fact that clinical evaluation and validation of its effectiveness has not been carried out. Using the box restricts arm movement within the box and this is especially of concern when managing the airway is difficult. It makes the simple process of intubation and extubation more complex. And it may not able to contain the aerosols within the box.[3] There is also a major concern regarding the concentrated viral load within the box and exposure of uncovered part of the incubator’s hand to viral load (area between the gown and gloves). The box may even increase the chances of infection spread.[3]

Simpson and colleagues have published their in-situ study in the journal Anaesthesia.[2] They exposed laryngoscopists to 0.3-0.5 microns sized particle using five aerosol containment methods (aerosol box, sealed box with and without suction, vertical drape and horizontal drape) compared with no intervention. The aerosol box compared with no device use surprisingly showed an increase in airborne particle exposure of all sizes over a period of 5 minutes. This can be interpreted as increased exposure to virus by 5 times. They hypothesize the release of virus through the arm holes leading to such an effect.

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2. Use of video laryngoscopes

The routine use of video laryngoscopes has a been recommended and considered ideal in patients infected with COVID-19 mainly with the aim of increasing the distance between the incubator’s face and the patient’s head, to minimize the risk of contamination.[1] In addition, video-laryngoscopy offers a better view of the glottic opening and can facilitate a better first attempt tracheal instrumentation.[2] It also aids the guidance from an assistant.

However, there are some concerns and these include: i) Removal of the stylet after endotracheal intubation, may increase the risk of contamination. ii) Video laryngoscopes do not reduce the chance of aerosol generating procedures and iii) Disinfection of the entire equipment along with cables is cumbersome.

***Fig 3*: Intubating with a video laryngoscope**

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3. Modified rapid sequence intubation (RSI)

Since the onset of the COVID-19 pandemic, in order to minimize aerosolisation during bag mask ventilation, the routine use of a modified RSI technique of induction and intubation has been recommended. The advantages of this technique include: i) Minimizes the risks of pulmonary aspiration of gastric contents, ii) Enables rapid intubation to optimise oxygenation and ventilation to correct hypoxaemia and iii) Minimizes the duration of exposure of the HCW to patients, which in turn reduces overall exposure to the SARS-CoV-2 virus.
There are concerns regarding the routine use of RSI technique. If the child desaturates during apnoeic phase, RSI can be modified by providing small tidal volume facemask ventilation. One should therefore ensure that 5-minute preoxygenation is performed prior to intubation. Another available option is delayed sequence induction (DSI) in which ketamine is used as the induction agent to preserve the spontaneous ventilation drive and reduce the chances of hypoxaemia during induction.[1]

Reference

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Endotracheal tube (ETT) vs. supraglottic airway device (SGA)

The aim of airway management is to quickly secure the airway without leak to minimize aerosolisation. SGAs have the chance of creating an air leak and aerosolisation and therefore endotracheal intubation is preferred

The concerns with intubating all children include the following:

1. Multiple attempts at intubation will result in more aerosol generation and exposure of operator to infection especially when an experienced anaesthesiologist is unavailable
2. The expertise required to extubate a sick child in a smooth and efficient manner to minimise the chances of coughing and bucking may not be the forte of an inexperience intubator
3. If preoxygenation is required prior to intubation, second generation laryngeal mask airways (LMAs) are preferred to bag and mask ventilation. An adequately placed LMA showing a square waveform $EtCO_2$ is fairly safe and if covered with plastic sheets can contain the minimal aerosolisation and limit spread of infection. Tape the gastric port to minimize the fluid escape and soiling and reduces the fomite borne infection. Ensure proper disposal of the plastic sheets

***Fig 4*: SGA**

My rendezvous with SARS-2 Corona virus: lessons learnt and unlearnt!

Dr Anju Gupta,
Delhi

I recount my experiences over the past four months while working in dedicated COVID-19 intensive care units (ICU) and operating rooms (OR). The first morning when along with other health care workers, I was donning the bright yellow personal protective equipment (PPE), with two infection control nurses helping me get ready, I felt like a warrior getting ready to fight a battle. People were happily posing to capture a picture for social media posts. Walking clumsily up towards the ICU, I felt like an astronaut walking out of a spaceship over the moon surface. On entering the ICU, I must admit that the fear of getting infected and in-turn infecting my near and dear ones was real. However, this was soon overcome by the unrelenting feeling of pride for being able to contribute to the cause of saving lives in the true spirit of our profession as anaesthesiologists.

In AIIMS, New Delhi, people from all strata, caste and creed were admitted, in the ICUs, some fighting for their lives on ventilatory support, some pleading to be sent home, others wanting to talk to their spouse and children, some “happily hypoxic” and a few others who greeted me with a smile despite being in distress. On returning home on the first day on returning home, I had a deep feeling of guilt within me of carrying an invisible demon to my kids and family. I kept myself locked away from my kids for the initial weeks, they were miserable and worried about my health. As the days passed, my faith in being protected by the PPE and the infection control system of my institute kept growing most of my fear vanished.

The most impactful moment while working in this pandemic was meeting small children isolated from their family, many of them were already affected with neurologic or oncologic diseases before this pandemic and COVID-19 snatched away the most important aspect of therapy *i.e.,* their social support system. A 7-year-old child, who kept himself detached from everyone, who didn’t make eye-contact while responding to my questions and refused to eat, though he was conscious and in stable condition caught my attention. A gentle pat on his back, holding his hand and conversing with to him made him converse with me and admit how much he was missing his parents and he then accepted to eat his food. Strategies to tackle this problem were later developed by keeping children in an isolation room where the parents were allowed to be with their child (with personal protection). Another incidence which I remember, is that of an elderly COVID-19 positive person who had to be intubated for a surgery. When intubation turned out to be difficult, we had to institute positive pressure ventilation, though the guidelines recommend otherwise. In another incidence, one of our critical care residents took off his face shield to be able to intubate a patient with a difficult airway. These incidences reiterate that the true spirit of our noble profession lies in service to mankind and that we tend to forget about our own safety.

Lessons learnt and perceptions unlearnt:

1. Life is very unpredictable and it can take a ‘U’ turn at any moment.
2. Infection control practices are the only panacea which exists against corona virus right now.
3. Adaptation is the new norm.
4. The field of medicine is extremely dynamic.
5. A healing touch and sympathetic words can sometimes heal more than the any fancy expensive medicine.
6. Loneliness is the most painful thing to bear
7. The human race is quite vulnerable and no one is immune to adversities.

IAPA Pediatric Anesthesiology Fellowship Training Experience at GKNM Hospital, Coimbatore: Fellow's Perspective

Dr N Dinesh & Dr Mithul V
Coimbatore

Anaesthesiology is a specialty which demands a high level of commitment and is filled with thrilling experiences. This experience is much higher with the sub-specialty of paediatric anaesthesia.

GKNM hospital at Coimbatore is one of the best centers for this sub-specialty. This hospital being a tertiary care and referral centre receives many paediatric patients from Coimbatore and adjacent districts of Tamil Nadu for surgery and intensive care. We would like to thank Dr. Rajani Sundar and Dr. Dinesh Kumar Gunasekaran for their contribution in the development of this department to its current state.

Exclusive pediatric operating rooms and a wide range of pediatric equipment for neonates to older children are available including specialized equipment for difficult pediatric airway management. In addition to invasive venous and arterial pressure monitoring, BIS monitoring, ultrasound equipment and a near infrared vein viewer are in use and have improved the quality of anaesthesia provided to patients. A dedicated team of pediatric OT technicians and staff nurses help to streamline care

In the years immediately after postgraduation, we had encountered difficulties while anaesthetizing small children. To mention a few; failed venous cannulations, desaturations during intubation, difficult caudal access and laryngospasm. Then we realized the fact that we had to improve our knowledge and skills to provide safer paediatric anaesthesia which is why we joined for this fellowship training. We were exposed to nearly 1000 pediatric surgeries of all specialties, outside operating room procedures, pediatric cardiac surgeries and cardiac cath. lab procedures. We also had clinical postings in NICU and PICU.

We believe the biggest asset of this department is the years of experience the teachers have. We realized that children are not just young adults. Every day we had something new to learn. Days passed on with better mask ventilation skills and better success with spinal and caudal blocks. Laryngospasms decreased significantly and extubation became uneventful. It really improved our confidence. We take this opportunity to thank our mentors for their support throughout. A few cases of foreign body bronchus helped us to learn about jet ventilation.

We also learned about safe practices in paediatrics, importance of sterile techniques and temperature management especially in neonates. Avoiding hypothermia remained the biggest challenge despite taking adequate precautions with different methods like warming mattress, warmed blankets, forced air warmers and fluid warmers. All neonates are placed in overhead radiant warmers with temperature monitoring prior to extubation which makes a big difference in outcomes.

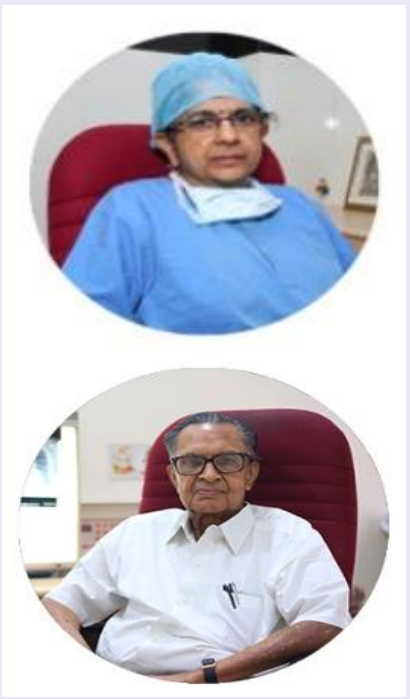
In the pre-operative room, all children are accompanied by their parent usually the mother. We have a wide collection of toys which help to divert the child's attention and create a friendly environment. Older children are allowed to drive seated in toy cars into the OR which help in reducing the need for drugs and separation anxiety. Similarly, all kids are accompanied by their mothers in the PACU, who stay there throughout. This helps in reducing anxiety and pain scores when combined with multi modal analgesia.

The paediatric cardiac anaesthesia unit functions with two dedicated anaesthesiologists Dr Soundravalli and Dr Kaushik Jothinath. They made us gain confidence in central venous cannulations and arterial cannulations. Their academic inputs helped us further.

Regular academic sessions have improved our knowledge especially in pediatric fluid management and handling children with respiratory infection. Thanks to the IAPA subscription for the journal Pediatric Anesthesia at an affordable price which is very useful. Learning Paediatric Advanced Life Support (PALS), neonatal resuscitation protocols, non-invasive ventilator strategies such as high flow nasal cannula, CPAP, surfactant therapy and umbilical arterial and venous cannulation, were useful in intensive care clinical postings.It would be more helpful if WEBINARS are conducted every month to help students across India learn from different teachers.

We would like to thank our beloved pediatric surgeons, Dr. V Ravikumar and Dr. Rajamani for their support during our fellowship. Permission has been obtained from the parents of children photographed

OUR TEAM



IAPA Pediatric Anesthesiology Exit Examination August 2020, Use of Online Platform During COVID Pandemic

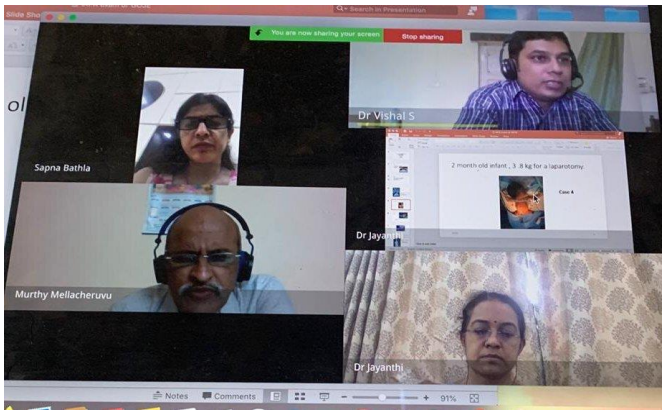
Dr Nandini Dave

(Coordinator IAPA Pediatric Anesthesiology Fellowship)

Under normal circumstances, the July/August IAPA Pediatric Anesthesiology Exit Examination is held during the midterm IAPA Executive Committee meeting. These are strange and surreal times. The COVID-19 pandemic has impacted every aspect of our lives. However, life must go on and we could not let down our IAPA fellows.

This August, five IAPA Pediatric Anesthesiology Fellows had completed their training and were eligible to appear for the exit examination. With the pandemic in full force and travel being restricted, the examination was conducted for the first time online. Candidates were allotted hall tickets and reported to their respective centers of training. Local fellowship coordinators were responsible for facilitating the process of the examination. Two of the candidates had relocated to other cities and their examinations were held in specified centers in those cities. The exit examination consisted of a theory paper in the MCQ format. The practical discussions were held online with examiners interacting with the candidate via a virtual meeting room. This was a new experience for all concerned and we ensured that all participants were satisfied that the examination was conducted in a fair and professional manner.

We sincerely wish the candidates, coordinators and examiners for there cooperation.



Global Pandemic and the Paediatric Anaesthetist: Something Offbeat

Dr Jitamitra Mishra, Bhubaneswar

The path I chose in life was to focus on making the hospital experience palatable for children and their parents. Bring me the sickest patient in the hospital and I'mready for the challenge. Often each day of my clinical practice tends to be long, never knowing the time of day or when it will end, rather stressful and tiring. I am happiest in the operating room environment and much of what I do is routine and predictable. But when crises arise, decisions must be made rapidly and I must be prepared to direct my team of nurses and technicians. My work has kept me away from my kid a lot, but I have always managed to spendquality time with him every now and then. This global pandemic has changed all that. Suspended day careand ageing parents meant thatmy spouse and I had to step in big time. And this is whereI feelmy paediatric anesthesia training hashelped.

I've had to enjoy the company of my surgeon(my spouse) who isoften wrong, but always sure she's right! When it comes to operating room decision making(child rearing), the surgeon often thinksshe is the captain of the ship. If one cannot deal with that sort of personality with grace and a bit of humor, one would be constantly unhappy while trying to coexist with them. As anesthesiologists, in our daily interaction with surgeons, we need to strike the right balance of strength of our backbones and flexibility. In my opinion, we each have our own jobs and should have our strong backs too. The same applies at home.

I have to make peace with the fact that I may not be my childs' favourite parent. The odds are,that he won't remember much about our interactionespecially around bed time, when its exclusively mother-son time. But this allows me the extra bit of 'me' time before I sleep, which unfortunately my wife seldom gets. Similarly, parents of my pediatric patientsmay not remember meor the interaction they had with me as their child's anaesthetist,as much as they did with their childs' surgeon. However, that doesn't bother me andI move on to focus on the next case that I am about to start.

I am fortunate to work with an outstanding home team comprising my wife, my parents and my in-laws who make life seamless for our young kid as he goes about his daily business of exploring the world. I focus on a few aspects of child care, which contribute to my child's overall development. My spouse and I are hardworking doctors and have always wanted it that way. We consider it an honor and a privilege to take care of other human beings. And it becomes even more special for me, when it is a child. Pandemic times have been depressing times for all of us. But it has its silver linings. Being able to see my two-year-old grow up and take rapid strides in life sure is one of them. And I will take that bargain any day.

Answers Crossword IAPA
Across
2. Video, 5. Ace, 6. Closed, 8. Sensitivity, 11. Attack, 12. Inline, 14. Supraglottic, 17. Extubation, 18. Wuhan
Down
1. Respirator, 2. VE, 3. Doffing, 4. HME, 7. GI, 9. N95, 10. Fifteen, 13. Five, 15. RSI, 16. Runner

Answers IAPA Quiz

1. B: Pincer grasp is not a primitive reflex. Palmar grasp, plantar grasp and rooting reflexes are neonatal primitive reflexes which disappear normally. Persistence of these reflexes suggest maldevelopment.
2. B: A: Omphalopagus, B:Ischiopagus, C: Craniopagus, D:Cephalopagus
3. C: Tetralogy of Fallot (Children with tetralogy of Fallot can undergo Tet spells/ cyanotic spells when crying/ during anesthesia induction). Knee chest position helps in increasing the SVR, thus decreasing the right to left shunt across the VSD.
4. A: Infraorbital nerve (Cleft lip): Infra-orbital nerve block can be given for post-operative analgesia in cleft lip surgeries. For cleft palate we can block lesser, greater and naso-palatine nerves.
5. B: The contents come out lateral to the umbilicus (Omphalocele). It is a central defect below the umbilicus, covered by a sac.
6. D: Arndt Bronchial blocker (Bronchial blockers are suitable in younger patients. Univent and Double lumen tubes are appropriate in older children. Tracheostomy tubes cannot provide one lung ventilation.
7. B: Endotracheal intubation and oesophagoscopy (Oesophageal FB). The FB can be seen behind the airway column in the lateral Xray, suggestive of an oesophageal FB.
8. D: A: Transverse process, B: Erector Spinae, C:Rhomboid Major, D: Trapezius. (Erector spinae plane block). The drug is deposited between the erector spinae muscle and transverse process of the vertebra, which penetrates to the paravertebral space.
9. Elastomeric pump: Permits the delivery of local anesthetic at a controlled rate. These devices contain a reservoir of local anesthetic which lasts several hours to days. The reservoir is surrounded by a balloon-like bulb that compresses the reservoir and infuses the drug when filled with air. A flow limiter in the tubing controls the infusion rate.
10. Laryngomalacia: Usually present in younger infants, with stridor which typically gets relieved in prone position. Warrants caution in the post-operative period.

Interesting Facts on COVID-19 & Children

Dr Ekta Rai,
Vellore

- Beta corona virus was identified in Wuhan in December 2019 and is named as SARS-COV-2. Diameter of SARS-COV-2 is 60-140 nm oval or round in shape studded with spike protein. It gains entry to the host cell via the ACE-2 receptor on respiratory epithelia cells.
- The WHO declared a global pandemic on March 11, 2020.
- Routes of transmission:

  Respiratory droplets and contact with respiratory secretions
  Fomite borne
  Feco –oral especially in children
  Aerosol particles especially for health care workers

- Aerosol generating procedures:
  Inhalational induction in uncooperative patient
  Bag and mask
  Suction before intubation
  Intubation
  Tracheostomy
  Extubation
  NIV
  High flow nasal oxygen
  NG placement in awake patients
  CPR
  Defibrillation
  Bronchoscopy
- Recorded infection rates among health care workers
  Wuhan- 3.83%
  Italy-9%
  Spain -14%
- Predicted causes of high infection among HCWs
  1.Prolonged exposure to the virus,
  2.inadequate access to personal protective equipment (PPE)
  3.Inadequate training with PPE
  4.Inadequate Donning and Doffing
  5.Inadequate testing of HCWs

R0: Basic reproductive number (R0) of virus is the number of secondary cases expected to develop from a single infected host, in a population that has no innate immunity. R0 SARS-COV2: 2 and 3.5.

- Average incubation Period: The average incubation period is 6.4 days (range 0-24 days).
- Infection and its severity among children:
  Chinese Data:1% under 8 year population and
  2% under 18 years population
  CDC Data: 1.7% under 18 years population
  Hospital admission in US: 5.7-20%
  ICU admission in US: 0.58-2%
- Attack Rate: The risk of becoming infected if exposed to someone positive for the virus.

  Children Attack rate: 12.3%(Wuhan Children's Hospital)
- Case Fatality Rate: CFR is the number of deaths from confirmed cases. It is lower in children than in adults and particularly elderly adults.

  CFR Adults: 2.3%

  CFR in children: 0.1%
- The mortality in critically ill patients with COVID-19 ranges from 16.7% to 61.5%
- Infection load due to children:1.2-2% (Data from China and Italy)
- Children can spread the infection but adults are primary vectors
- Presentation: Cough, sore throat, fever, diarrhoea, vomiting, abdominal discomfort, shortness of breath, tachycardia
- Laboratory Findings: Low Lymphocyte count (not consistently low), CRP high consistently

PS: COVID-19 is still unfolding in many parts of world and all the facts and figures are as per available literature.

When COVID-19 Strikes Home

Dr Leah Raju George, Vellore

Living in the twenty first century, one felt in control of life and deemed oneself lucky. Little things in life are taken for granted. Medicine with its numerous subspecialties has grown rapidly in leaps and bounds, until we were suddenly struck by a little virus that caused a pandemic and panic.

As a doctor couple working in a busy tertiary hospital, handling work-life balance with a 5-year-old and 3-year-old twins is a challenging and ever-learning process. This situation became even more demanding, when my husband went to the USA for a 10-month course. Despite having very supportive parents, circumstances did not allow them to stay with us and I had managed with the help of maids and caring neighbours. After being stranded for a month, my husband managed to return home in June 2020 and was then quarantined before we could finally spend time as a whole family again. My coping strategy to stressful situations has always been in my faith that God will not put me through more than I can handle.

Within a week of joining work in the COVID wards, my husband became symptomatic and was COVID positive. The implications of testing in our district were strict and all positive cases had to be admitted even for a mild disease. So again, we were separated, my husband in the hospital and I with the three kids and my live-in help were isolated at home. This was a trying time, the challenges of handling three young children within the confined spaces of our apartment for close to three weeks and the immense stress when my husband's fever and myalgia did not settle for 12 days, was overwhelming. Despite the low risk of complications, as a medico one always worries, considering the worst possibilities. We were fortunate that each of us at home had only mild symptoms of low-grade, transient fever, sore throat and headache. The loss of smell came as a blessing in disguise considering multiple potty washes for the kids!

The hospital community we live in was very helpful with supplies of food, snacks and cake popping in every other day and warm conversations of concern and support. I have always been someone with the strong faith that God is in control of everything and this was my firm pillar during this time. When my husband's fever finally crashed and he came home, we were immensely grateful to God for taking us through this ordeal. During the last few days of quarantine, we spent quality time together and really bonded.

Now that we are back to COVID work with higher antibody levels, I want to reassure you all, my friends in the medical fraternity that despite the uncertainties that still lie ahead, we can rest assured that God will see us all through.

From the Heart of the Pandemic

Dr. P Benjamin, Dr N Kesarkar, Dr P Muneshwar, Mumbai

The world as we know it, has undergone a major change in the past few months due to COVID-19, as our governments and economies continue to grapple with this pandemic.

Traditionally India spends less on public health (~2% GDP), while ironically most of her population depend on government health services. The initial days of the pandemic highlighted this disparity with the inadequate availability of testing, PPE, quarantine facilities and even food. Rumours and fake news ran amok in the general population and among health care workers (HCWs) as hard knowledge and evidence-based medicine was not available and a distant reality. This dearth in knowledge sometimes resulted in people fleeing from HCWs who came to test them and residential societies did not allow HCWs into their homes and on rare occasions resulted in ugly altercations.

These happened in the early days. Many of us thought that the global pandemic would just go away and all we needed to do was to go on with our lives, just as how we cope yearly when the rain and floods in Mumbai come and go and life goes on; this too would also pass. Mumbaikars are a resilient people and the lock-down appeared to have brought the situation under an uneasy control. Sadly, a pandemic does not pass on that easily and as we saw some countries, with far better health systems than India, get completely overwhelmed, we knew that we would be hit and affected badly in the near future. Fortunately, we were lucky in one aspect that India has an overall younger population, which translates to lower mortality.

The lock down and general fear of the public, reduced the regular patient load in our hospitals. During this period of relative calm before the storm, there was an explosion of innovations to safeguard the HCW while ensuring quality patient care. These included; practice drills on regular patients while wearing PPE, makeshift cut-out card-board boxes with store-bought polythene sheet covers made way for acrylic intubation boxes. Video laryngoscopes were procured and used more frequently. Auscultation was no longer a routine practice. We could even convince some paediatricians to use muscle relaxants routinely for endotracheal intubation.

Steadily the trickle of patients turned into a stream and then a flood with seemingly no control. The images on social media and news outlets of dead bodies lying unattended in the hospitals alongside patients, the general lack of HCWs, was just the tip of the iceberg and our stark frightening reality. Several HCWs were infected with COVID-19. Sadly, there were HCWs who treated COVID-19 patients who later succumbed to the disease themselves due to the non-availability of a ventilator. Shared residential facilities with common bathrooms in hostels made controlling the spread among resident doctors difficult.

Now the pandemic has become part of our everyday life. Once a month we get posted in the COVID hospital for a period of ten days, followed by a mandatory rest period of five days. Protocols are now in place. Mortality has improved. Taj food boxes provide us with ATP energy. The COVID-19 positive patient load has gradually decreased with the integration of private facilities and opening of large centres to handle mildly sick patients. The availability of equipment and the strength of the work force has improved significantly.

That old fear has gone away as well. People have gotten used to it. We no longer look with suspicion at the slightest sniffle. It no longer surprises us to see kids ask to use the hand sanitizer before promptly plunging their hands into the nearest new gadget. We are even comfortable breathing through an N-95 mask!

CORONA Warriors

Dr Pratishtha Yadav, Delhi

Just like any one of you, I have had three years of rigorous training in anesthesia so much so that it literally runs in my veins. Accustomed to being invisible, none of us ever imagined being at the forefront of this unexpected pandemic and branded as 'Corona Warriors'. Bruce Wayne alias Batman, without any inhuman superpowers saved Gotham city from a quintessential villain, The Joker. Sometimes I feel we are like Batman, all donned up in our PPE and face shields trying to be superheroes. What actually lies behind this N95 mask apart from our gasping breath and exhausted face? Despite actively working in the COVID area for three months now, I can still feel a cloud of stress constantly hovering around my head. I now understand how it actually feels like 'catching a breath'. Each task takes double the effort and minutes pass like hours inside the plastic bag called PPE. After a long struggle with my dexterity and performing my duties diligently, I finally get to doff. After tedious duty hours when I need the comfort of my family, the COVID-19 virus strikes again. I deliberately physically distance myself from my loved ones but thanks to video conferencing, I am closer to them now than ever before. I must thank COVID-19 virus for making me realize the importance of the invisible heroes of our lives; our family, friends and last but not the least the air we breathe.

Experiences of a Frontline COVID Warrior In KEM Hospital, Mumbai

Dr Vishal Saxena,
Mumbai

I spent the last 21 years of my life in the Armed Forces, particularly last 17 years as a uniformed soldier in the Indian Navy and Army. I have had my fair share of brushes with grit, adventure and danger which triggered liters of adrenaline on a number of occasions. So as a battle-hardened soldier at 40 years of age, I joined KEM hospital, Mumbai for my DM in Paediatric Anaesthesia. Only to realise that this battle here, was something different.

Covid-19 reached exploding levels in Mumbai by April 2020. It was the most affected city right from the earlier days. Soon all departments had to stop their routine training and plunge into managing the enormous COVID workload. In no time, I found myself in a COVID ICU in the midst of chaos, uncertainty and stress, accompanied by a deafening silence inside an overwhelming PPE. As the news reached home, this sudden COVID-19 posting worried my parents, my wife and 6-year-old son too. I could see the worry and stress on their faces when I left for duty. But being the family of a defense doctor, they could come to terms with the commitment that this task demanded from me. For the duration of COVID duty, I decided to leave home and stay in the hospital accommodation for the safety of my loved ones.

COVID wards/ICUs required residents to be on 6 hourly duties every day. Initially the duty rotations were for 7 days but as the cases kept increasing, the duration of rotations also increased to 10 days at a stretch. Each duty required complete attention, alertness and patience. KEM hospital being run by the Municipal Corporation, received only the severe and complicated patients from across the state. The environment in the hospital was tense and serious but this was a test of our training and experience as anaesthesiologists. I immediately decided to communicate with my fellow residents in the ICU who were from different departments, and with who I had never worked together in the past. Soon we were on the same page, executing plans for each patient, one by one, keeping ourselves motivated and positive. The mild patients were shifted to other wards, those that remained with us required oxygen, IV antibiotics, antivirals steroids, thromboprophylaxis, immune modulators and many required plasma and invasive ventilation. As days went by, more and more wards in the hospital were converted into COVID wards. Since March 2020, we have been doing multiple rotations with a few days of rest in between. And I must confess, that while on COVID duty, on an average day, things worked our way, but on most other days, it was a struggle to stay afloat. But there was always hope at the end of the tunnel as the government was continuously creating more COVID Care facilities in the periphery and was streamlining the procedure of admission.

The biggest challenge that I faced is undoubtedly the PPE. Especially in the hot and humid summers in Mumbai, I felt that surviving the PPE was more difficult than treating a COVID patient. Each duty was physically, mentally and emotionally very tiring. Added to that, when patients died in such large numbers- in front of me, it was challenging to hold on to my guard and keep fighting for the others. There are innumerable stories to tell about the COVID ICU, each one unique and often disturbing. We had a mother-son duo who were inflicted with COVID, both in the same ward. The mother, 65-year-old, deteriorated quickly from moderate to severe disease, and was put on a ventilator on day 4, following which she succumbed to the illness, all while her 40-year-old son was just two beds away. The son was thrown into a situation where he was grieving the loss of his beloved mother, yet was anxious about his own self. Within the next week, the son's condition also worsened following which he too succumbed to the illness. This apparent lack of control and helplessness was quite distressing. Amidst all this mix of emotions, sometimes, I woke up after a duty with a sore throat which caused a bit of panic about the impending event that seemed inevitable.

And surely after a few rotations of COVID ICU, one morning I woke up with fever, sore throat and a splitting headache. While giving the RT-PCR sample, deep down inside I knew that the test would be positive, and it was. I was admitted in the isolation ward at the Naval hospital Asvini for 23 days. The fever was bone-breaking for about 8 days and the cough still hurts. Since the oxygenation was under control, I was given hydroxychloroquine and antibiotics. For an otherwise healthy and independent person that I am, this feeling of exhaustion being in the midst of a ward full of COVID positive patients was quite frustrating. My fellow patient, a 73-year-old retired fighter pilot, who served the country in the 1965 and 1971 wars, was also unhappy about the nasal prongs that were poking in his nose. He made friends with me and slowly and steadily we both recovered. Though I tested positive again on Day 14, I was lucky to recover completely in the following days.

Despite this being an ephemeral experience compared with most critically unwell patients, the role reversal of going from clinician to patient provided me with a different perspective about clinical care. One major issue was a perception of being shot and maimed in this battle of COVID, which used to aggravate that sick feeling. This led to uncertainty in my own mind and potentiated fears that I already possessed regarding my clinical condition. Thanks to some excellent nursing care and empathetic communication from the treating physicians, I managed to walk out of the hospital after three weeks of admission.

Being admitted to a COVID ward was truly a unique experience. More so since I am also a clinician who had treated numerous patients with the same illness before my own admission. It forced me to indulge myself and heal my own self. Thanks to the treating doctors who could strike a fine balance of dealing with a person who was both a colleague and patient. But the whole COVID-19 experience, both as a doctor and a patient has been a life-changing event. May God help the world heal itself quickly.

As Carl Perkins said, "If it weren't for the rocks in its bed, the river would have no song".

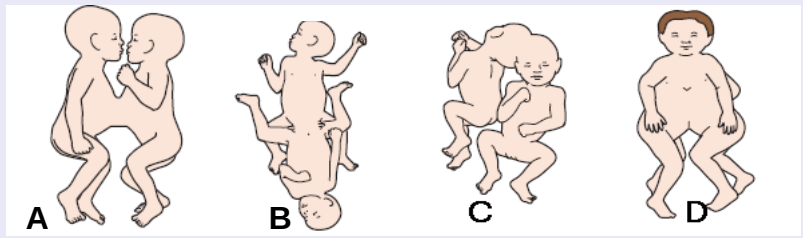
IAPA NEWSLETTER QUIZ

Dr Mridul Dhar,
Rishikesh

1. Which of the following are not primitive reflexes?

2. Match the type of conjoint twins correctly to the figures.

a) A:Cephalopagus, B:Ischiopagus, C: Craniopagus, D:Omphalopagus
b) A: Omphalopagus, B:Ischiopagus, C: Craniopagus, D:Cephalopagus
c) A: Omphalopagus, B:Cephalopagus, C: Craniopagus, D:Ischiopagus
d) A:Ischiopagus, B:Omphalopagus, C: Cephalopagus, D: Craniopagus

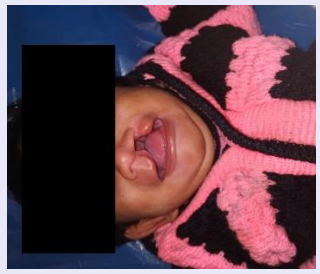


3. What congenital heart lesion is this child most likely to have based on the intervention being done?

a) Atrial septal defect
b) Ventral septal defect
c) Tetralogy of Fallot
d) Patent ductus arteriosus

4. In this child with a lip defect, blocking which of the following nerves will provide analgesia post-surgery?

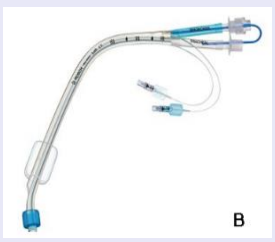
a) Infraorbital nerve
b) Supraorbital nerve
c) Mental nerve
d) Inferior alveolar nerve

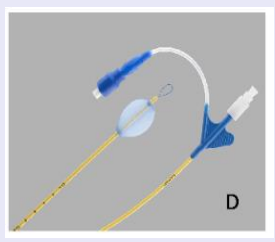


5. Which of the following is an incorrect statement regarding the neonatal abnormality shown in the figure?

a) It is generally associated with other congenital anomalies
b) The contents come out lateral to the umbilicus
c) A sac covers the abdominal contents
d) Less chances of metabolic derangements

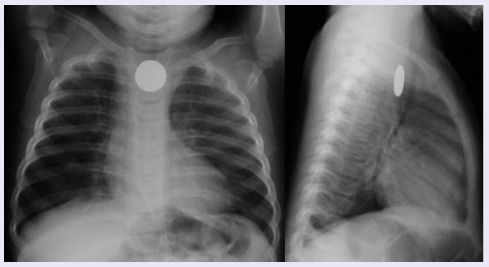
6. A 3-year-old child is being taken up for decortication surgery for chronic empyema. The surgeon has requested you to provide one lung ventilation. Which of the following techniques is best suited in this child?





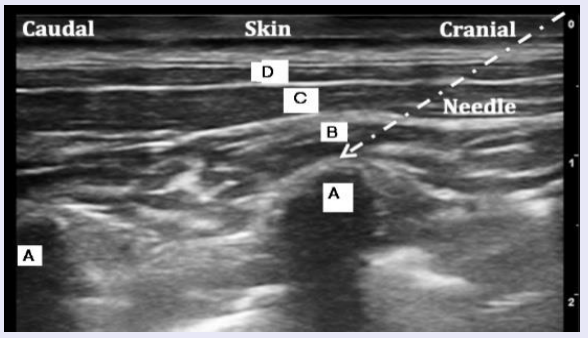
7**.** A child has presented to the emergency department has the following chest x-ray findings. He is taken into the operation room for retrieval. What is the best strategy?

a) Thoracotomy and retrieval
b) Endotracheal intubation and esophagoscopy
c) Endotracheal intubation and rigid bronchoscopy
d) Ventilation by face mask and rigid bronchoscopy



8. A plane block is being given in the back of a 5-year-old child for post-operative pain relief in a thoracotomy. In the USG image choose the correct identification of the structures.

a) A: Transverse process, B: Trapezius, C: Erector Spinae, D: Rhomboid Major
b) A: Transverse process, B: Rhomboid Major, C: Erector Spinae, D: Trapezius
c) A: Erector Spinae, B: Transverse process, C: Rhomboid Major, D: Trapezius
d) A: Transverse process, B: Erector Spinae, C: Rhomboid Major, D: Trapezius



9. Identify this equipment, its use and mechanism of functioning?

10. A 2-month-infant has come for elective inguinal hernia surgery. During PAC parents give history suggestive of on and off stridor. You notice that the infant was lying on the bed as shown in the image below. What is the most likely diagnosis?

Parenting in the Time of COVID-19: A Fine Balancing Act

Dr Anisha De,
Kolkata

"Are we doing it right?" is the question that often troubles doctor parents. In the pre-COVID-19 era, we struggled to strike a balance between work and family. Yes, this pandemic has allowed us to spend more time with our children but the question still remains. For many doctor parents, child rearing has always been a coordinated effort shared among extended family members, neighbours, schools and caregivers. All of a sudden, help is no longer accessible and parents, especially mothers are shouldering the entire load.

In addition to being exposed to all the negativity at the workplace, we are relentlessly grappling with multiple issues e.g. ,fear of transmitting infection to those at home; watching family struggle with isolation, financial stress, job insecurity and even obsessing over a common cold.

Continuous and unfiltered exposure to news and professional medical discussions at home are causing children to be overtly fearful and anxious about death. They are not able to play and spend time with their friends and the lack of social support is affecting their emotional wellbeing.

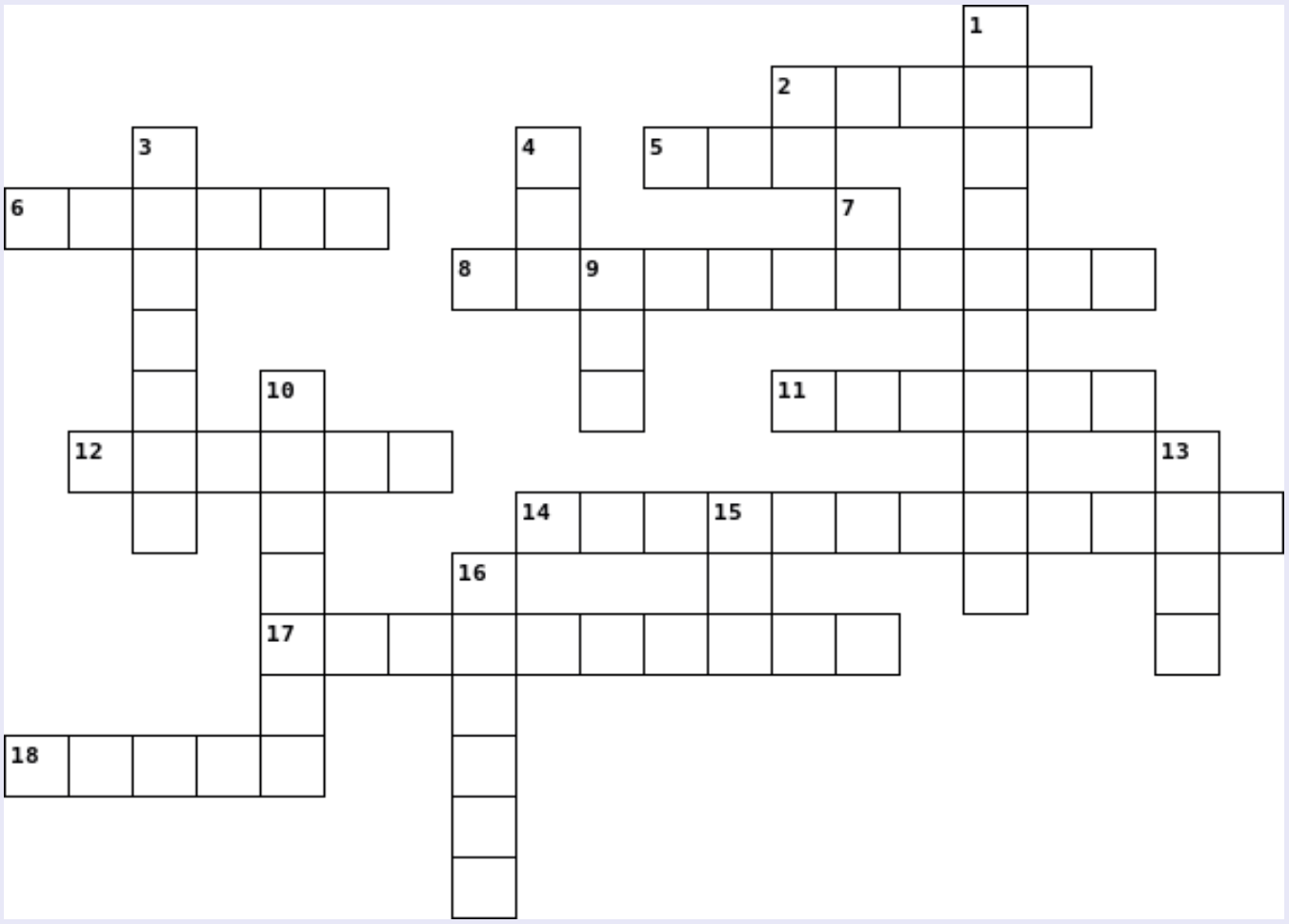
With schools being shut down, children and parents have also had to take the concept of digital home-schooling in their stride. Apart from logistical issues and erratic timings of this arrangement, the exponential increase in daily screen time and sedentary lifestyle also increases the risk of refractory errors, headaches, obesity and inattentiveness.

The truth is that we are struggling to deal with the needs of our children, while simultaneously managing our other commitments without faltering. There is no road map to guide us and we are relying on our instincts in the face of this unprecedented challenge. A patient hand, an honest heart , unconditional love and support seem to be the pillars of survival. In these hours of stress, we can only strive to make the best use of this time, appreciate what we have and create everlasting memories.

As somebody has rightly said "When in doubt, choose the kid. There shall be plenty of time to choose work later“.

Crossword

Dr. Vibhavari Naik,
Hyderabad



Across

2. This method of laryngoscopy is preferred if equipment and expertise is available

5. SARS CoV-2 virus enters the host cell by binding to these receptors

6. This type of anaesthesia circuit is preferred to reduce aerosol exposure

8. Low _____ of RT-PCR testing poses a risk of false negatives

11. Children are less likely to get infected after exposure due to low _____ rate

12. This type of suctioning is recommended to reduce aerosol generation

14. Second generation of these airway devices is preferred as they have higher leak pressures

17. This procedure is more aerosol generating than intubation

18. Novel beta coronavirus was identified in this city of China

Down

1. These devices available as full or half face can protect from 99% of virus particles

2. Preferred grip of hands for holding the mask

3. This is a high risk procedure for infection and should be buddy guided

4. High quality viral filter

7. Apart from respiratory system symptoms, kids with COVID can present with these system symptoms

9. Meaning that it filters 95% of airborne particles

10. At least these many air exchanges per hour are recommended for operating rooms

13. Nasal oxygen less than __ litres/min is unlikely to generate aerosol

15. A technique used to avoid ventilation before intubation

16. Person designated outside the operating room for help