CONFERENCE PROCEEDINGS

The post Covid era has brought about a radical change in the in the understanding of Anaesthesia as a speciality in the general masses and even the medical fraternity. From their role in the operation room to provide anaesthesia , this speciality has evolved to incorporate multiple facets like management of critically ill patients in the intensive care unit, managing chronic pain conditions and providing palliative care . The Department Of Anaesthesia at Bharath Medical College and Hospital conducted an international conference on the topic "Anaesthesiology as a Speciality" on 19th of March 2022 to further this cause and spread awareness regarding this speciality in the students and the faculties. It was an informative and extensive session which covered myriad of topics ranging from history of anaesthesia to the recent advances in this field. TNMC accreditation was sought and credit hours were awarded to the participants.

The program was chaired by our respected Dean Dr Arunachala D Edukondalu and coordinated by the Head of Department of Anaesthesia, BMCH, Professor Dr S Sree Ranjini along with her team. The chief guest was Dr A C Malarvizhi, Professor and Head, Department of Anaesthesia, Madha Medical College who graced the occasion with her benign presence and spoke in detail about the role of anaesthesiologist as a pain physician. Dr K M Lakshmanarajan, specialist cardiac anaesthetist in NMC Royal Hospital, Sharjah, UAE joined online to share valuable insights about cardiac anaesthesia. The speakers discussed in depth about the various aspects of anaesthesia starting from the history of anaesthesia to recent advances.

The history of anaesthesia as it evolved over years was beautifully presented by Professor Dr S Sree Ranjini. Dr M Keerthiga, Senior Resident, spoke in detail about the importance of optimizing a patient for surgery. Dr Deepika, Assistant Professor discussed about the importance of ethics in anaesthesia. The different techniques of anaesthesia was illustrated in detail by Dr S Sevukar Raja , Senior Resident. Dr R Aishwarya , Assistant Professor, spoke about burnout and health issues in the anaesthesiologist, an important aspect in today's stressful times. Dr R S Deeksha , Senior Resident concluded the academic event with her talk on the role of anaesthesiologist as ICU physician.

The history of anaesthesia as it evolved over years was beautifully presented by Professor and Head, Department of Anaesthesiology, BMCH, areDr S Sree Ranjini .Since times immemorial, surgery was most feared. The reason being, 'PAIN'. In ancient times, surgery such as an 'amputation' was performed by crude methods, without anaesthesia, mainly restraining the patient as they screamed with pain and fear. But pain itself can cause neurocardiogenic syncope, shock and even death – with a mortality rate of 14% attributed by researchers. Hence substances to reduce pain were the need of the hour and the concept of "anaesthesia" was born. "Anesthesia" – the word was used for first time in 1846 by Oliver Wendell Holmes to mean 'Reversible loss of consciousness and sensation'. It was derived from the Greek word "anaisthēsia" in Hippocratic Corpus; an-, meaning "without" and aisthēsis, meaning "sensation."

Going through the timeline of anaesthesia starting from antiquity to the present; herbs such as cannabis, aconitum, hemp, mandragora and opium were being used in ancient India as early as 4000BC, given the fact that Indians were pioneers in surgery. By 1500 BC use of cocaine started. Around the same time, Acupuncture was popularized by Shang dynasty in China. It was based on a technique for balancing the flow of energy or life force — known as chi, which is believed to flow through pathways (meridians) in the body; by inserting needles into specific points by which energy flow will be re-balanced.

In the Middle Ages (5th -15th ce Ad) – 'Ether' was supposedly created by Jabir Ibn hayyan (721-815), an alchemist from the middle east in 8th century. In the Renaissance period (15th -17th Ce ad),

Paracelsus (1493–1541) of Germany isolated substances that resulted from interaction of alcohol and vitriol and in 1525, demonstrated its action in chickens. He noted chickens enjoyed sweet vitriol [ether] - after which they "underwent prolonged sleep and woke up unharmed". But he did not extend this discovery from farm animals to people.

In the 19th century, there occurred the biggest breakthrough in anaesthesia. On 16th October 1846, at Massachusetts General Hospital, Boston; WTG Mortan administered Ether anaesthesia to one Mr. Abott, for removal of a neck tumor by surgeon Collins warren. This day is celebrated all over the world as "World Anaesthesia Day". The place is preserved as 'The Ether Dome' - the surgical operating amphitheater in the Bulfinch Building at Massachusetts General Hospital in Boston.

Slowly other agents were synthesized and introduced. Nitrous oxide was used for General Anaesthesia in 1844 by US dentist Horace Wells, but was unsuccessful and again brought in to practice from 1920s onwards. Chloroform was popularized by Dr. John Snow (1813-1858) for obstetric anesthesia, when he administered chloroform to Queen Victoria for the birth of Prince Leopold (1853) and Princess Beatrice (1857).

In the 19th Century, Spinal / epidural anaesthesia was introduced when drug cocaine was given by American neurologist Corning. He injected cocaine between the spinous processes of the lower dorsal vertebrae in a young dog. This paved the way for regional nerve blocks. Local anesthetic drugs were synthesized. In 1920s, lignocaine was used and later bupivacaine.

In the 20th century, another breakthrough occurred in the form of 'Muscle relaxant'. Strychnos Toxifera was used by the tribals of Amazon jungle to paralyze animals during hunting and the drug stored in bamboo tubes. This was observed by explorers and the drug was called tubocurarine / curare. On 23 January 1942, Griffith and Johnson administered curare to a young man undergoing appendicectomy, using which they successfully performed a tracheal intubation

By the 20th century, newer Drugs were introduced and anaesthesia revolutionised. Inhalational agents such as Halothane, Isoflurane, Sevoflurane, Desflurane; Narcotics such as Morphine, Fentanyl, Buprenorphine, Butarphanol; Induction Agents such as Thiopental, Ketamine, Etomidate, Propofol; and Muscle Relaxants like Atracurium were used. Newer techniques came in to vogue such as Tracheal intubation, Tracheostomy, Endoscopy and Ultrasound guided blocks.

With all these, the Mortality under anaesthesia which was in earlier times 6.4 per 10000 anesthetics in the 1940s came down drastically to 0.04 per 10000 in present times, largely because of the introduction of safety standards and improved training.

In the 21st century, advancements continue with the closed-loop anesthesia delivery system (CLADS) which relies on a completed or "closed" feedback loop; Electronic medical record and anesthesia information management systems (AIMS) which act as hubs for information gathered by the provider, monitors, and anesthesia workstation; introduction of Telemedicine and its application to the perioperative surgical home model of care.
With better drugs, equipment and training, the expertise of anesthesiologist has moved away from a simple control of pain during surgery. They are now actively involved in critical care, emergency care and interventional pain management, in addition to anaesthesia for surgery; due to their expertise in control of hemodynamics, managing airway, control of neurological status / consciousness, highly skilled Invasive lines, Infection control, Resuscitation & advanced life support and improved knowledge of general medicine and subject relevant to the surgery. They are now truly - '*perioperative physicians.*

Thus, anaesthesia has evolved as a specialty and is one of the most humane, as it puts an end to patients' pain and suffering.

Ethical knowledge about anaesthesia practices provides guidance to the practicing anaesthesiologist to do their work meticulously. These ethics are reinforced by professional bodies like National Medical Council. The importance of ethics in anaesthesia was discussed by Dr Deepika, Assistant Professor. She explained about the role of written informed consent, documentation and record keeping and threw light on the technical aspects of Consumer Protection Act. Detailed knowledge about ethical and medicolegal issues helps the anaesthesiologist in delivering proper standard of care.

Pre- operative evaluation of a patient is an important and mandatory step before taking up a patient for surgery. The importance of this was highlighted by Dr M Keerthiga, Senior Resident. The goals of pre-operative evaluation are to sensitize the patient for the entire surgical process, problem identification in the patient and planning for anaesthesia technique. It is a sequential step of history taking, physical examination and investigations. It helps in identifying the issues which remain hidden over a long period of time. The role of optimizing a patient pre operatively for any surgical procedure was discussed in depth by the speaker.

The services of the anaesthesiologists are utilized throughout the hospital and beyond. The operating theatres are the most common venue but anaesthesia services are delivered in labour ward, day care surgeries, intensive care, emergency room, interventional radiology, Computed tomography, Magnetic resonance imaging and in the wards during emergency care and transfer of acutely unwell patients. The different techniques of anaesthesia were illustrated in detail by Dr S Sevukar Raja, Senior Resident. The choice of technique will be influenced by specific patient, surgical and anaesthetic factors as well as the level of one's experience in the speciality.

Dr R Aishwarya, Assistant Professor, spoke about burnout and health issues in the anaesthesiologist, an important aspect in today's stressful times. With the advent of Covid and increasing role of anaesthesiologist in the pandemic their mental and physical health was compromised beyond repair. Various studies conducted revealed alarming levels of burnout and depression in the community. The importance of acknowledging this problem and seeking steps to address this issue was highlighted by the speaker in her talk.

Anaesthesiologists are not only considered as perioperative physicians. They are also uniquely qualified to coordinate the care of patients in the intensive care unit because of their extensive knowledge about clinical physiology and resuscitation. Their role in the ICU setting includes the provision of patient assessment and diagnosis, airway management with respiratory support, cardiovascular support and infection control. Dr R S Deeksha, Senior Resident concluded the academic event with her talk on the role of anaesthesiologist as ICU physician.

This academic event was a didactic session with active participations from the audience. Feedback forms were distributed and the valuable feedback was sought. The session was ended with a vote of thanks by Dr M Keerthiga.