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LEADING ARTICLE

# History of Pediatric Anesthesia in Bangladesh

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Children are very special people who require special care in order to provide safe anesthesia. The history of pediatric anesthesia is the steps towards maintaining normal limits of neurologic, respiratory, cardiovascular and other body systems. The goal of the specialty of the pediatric anesthesiology is the reduction of perioperative morbidity and mortality and promotion of monitoring, resuscitation and supportive fields through teaching, research, organizational activity throughout the world.[1,2] Before discussing the history of pediatric anesthesia in Bangladesh I want to discuss what was the global condition. Before introduction of ether in 1846, circumcision, amputation, excision of tumors and correction of gross deformity were performed in infants and children without any relief of pain. Struggling could be controlled by use of force. Pain was accepted as an unavoidable part of life. The outcome for both operation and patient was poor. Among advances in medicine during the past 150 years, the introduction of surgical anesthesia must be considered the greatest gift of medical profession to mankind, especially to children.[3]

Pediatric anesthesia has progressed rapidly throughout the years. The first recorded case of pediatric anesthesia was in 1842. Crawford Long a rural physician administered the first documented ether anesthesia in his office to a child of 8 years old African American boy for a toe amputation on July 1842.[4] He did not publish his work for 3 years. William T.G Morton performed the first successful pediatric ether anesthesia for removal of a mandibular tumor on October 16, 1846. It introduced a new era of surgical anesthesia.[5] Children were at greater risk of nausea and vomiting after ether anesthesia. James Young Simpson and John Snow practiced anesthesia with the more potent chloroform. Chloroform had a narrow margin of error with higher incidence of fatal hypotension and cardiac arrest. First recorded cardiac arrest and death by using chloroform was in 1847.[6,7]

Throughout the first decades of 20$^{th}$ century, most physicians treated children as miniature adults. It is believed that the development of modern pediatric anesthesia started in 1930.[8] The rapid growth of pediatric anesthesia was divided into two chronological categories. First were 1930 to 1950 and the second 1950 to present. During the first period the anesthesia techniques and equipment were developed. In the second phase with further techniques, equipment, refinement, modern anesthetics and vital system monitoring were introduced into everyday practice.[9] Ether and chloroform could be given for orthopedic and limb surgery but problems were with cleft lip, palate, abdominal, ENT and chest surgery.[10] Digital tracheal intubation with a soft rubber catheter was done in 1919. Breathing circuits and AYRE T piece with use of muscle relaxant and intubation was performed successfully.[11]

What about in Bangladesh? The history of pediatric anesthesia in Bangladesh was miserable. In early 1970's the only agent was ether and chloroform to anesthetize the pediatric patient. Only ether was continued due to the toxicity of chloroform. During that time pediatric endotracheal tube, laryngoscope, pediatric circuit and IV cannula was not available. IV channel were maintained by butterfly needle. Open ether anesthesia was practiced particularly in the peripheral and district hospital. The death rate was very high due to aspiration and respiratory depression.[12] The condition was horrible for the anesthetists and surgeon. Pediatric surgeon and pediatric anesthetists were not available. Our great teachers after completing their education from abroad came to the country and modern anesthesia was started.

The sacrifice of the pioneers of the anesthesia in our country brought pediatric anesthesia into a modern stage. Prof. A Kader, Prof. SNS Chowdhury, Prof. Afzalunnesa, Prof. KM Iqbal, Prof. Khalilur Rahman, Prof. Rashiduddin Ahmed, Prof. Kaisar Ahmed, Prof. Fakrunnisa and many other respected teachers contributed to the development of pediatric anesthesia

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in Bangladesh. The Dhaka Shishu Hospital is the pioneer of development of pediatric anesthetist and anesthesia. Prof. Jahanara Alauddin after completing her post graduation degree from England devoted herself in Dhaka Shishu Hospital. Her contribution to develop the pediatric anesthesia and training of the pediatric anesthetists is undoubtedly praiseworthy. Contribution from Prof. SNS Chowdhury, Dr. Zaheda Yusuf Zai, Dr. Abdul Jalil Baro Bhuyian, Dr. Nazir, Dr. Masud, Dr. Bashar, Dr. Maksud Isa and so on are also noteworthy. Currently other pediatric hospitals such as - MR Khan Shishu Hospital in Mirpur, Institute of Child and Mother Health in Matuail, Children Hospital in Chittagong are also established and are contributing to the growth of more innovative and successful pediatric anesthesia and surgeries in Bangladesh.

Pediatric anesthesia in the poor countries has not kept pace with the advances made in the developed countries. Access to safe anesthesia and pain relief during surgery could be considered a basic human right in the 21st century. International standard for safe practice of anesthesia adopted by the World Federation of Societies of Anesthesiologists (WFSA) in 1992, are seldom met in developing countries. In a recent survey only 13% of anesthetists are able to provide safe anesthesia for children.[13]

It is impossible to provide truly a complete history of pediatric anesthesia in our country because of lack of authentic documentation. The article is written with the personal experiences faced during 1980's. Now we have advanced a lot, many names and institutions have grown as a specialty. Many advancements and challenges to pediatric anesthesia are there on the horizon, though we are managing new born and critical patients with difficult intubation with modern devices and managing pediatric ICU and acute and chronic pain.[14] Still we are lacking modern instrumental support, proper medical support and skill training, disaster training and patient safety. In the words of Robert Smith, "We have not yet learned how monitor consciousness, and how to measure pain or fear. When we do and succeed, we not only keep children pink and alive, but also keep them smiling. We shall then have achieved something important[15], but we are much closer than we were in 1975 when those words were written.

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