Special Article

Obstetric anaesthesia as a career

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ABSTRACT

Obstetric anaesthesia is emerging as one of the most demanding subspecialities of anaesthesia. Obstetric anaesthesiologists are now an integral part of the multidisciplinary team managing the high-risk obstetrics. It has been recognised that targeted training in obstetric anaesthesia helps to recognise the mothers who need special care and formulate specific plan for delivery. Among the subspecialties of anaesthesia, obstetric anaesthesia has the potential to get established early. Obstetric anaesthesiologists have the prospect of choosing either a team or an independent practice. Group practice with a multidisciplinary team can mitigate some of the constraints and allows professional fulfilment and enough time for personal, family and societal commitments. Obstetric anaesthesia is a well-paid and sought-after speciality, and a dynamic field that demands excellent clinical and interpretative skills in a rapidly changing environment.

Key words: Anaesthesia obstetrical, anaesthesiologists, education, pregnancy high-risk

INTRODUCTION

Anaesthesiology has evolved over many years, and the role of the anaesthesiologist has extended beyond the operation theatre to the field of perioperative care, critical care and pain medicine. The subspeciality of obstetric anaesthesiology is unique in the way that instead of being perceived in the context of surgery and perioperative care, an obstetric anaesthesiologist is often recognised for providing pain relief during labour. Obstetrics itself is a unique speciality as it is the only medical speciality requiring hospital admission even if there is no pathology! The majority of the 'patients' in obstetrics are without co-morbidities. This makes the care of the mother and the child more important with zero tolerance towards maternal and foetal morbidity and mortality.

A change in the lifestyle, increase in the body mass index (BMI), advanced maternal age, increased operative interventions, increase in cardiovascular disease, including grown up congenital heart disease (GUCH), and advanced care in the other specialities has led to increase comorbidities among parturients. The additional issue in the developing nations is the unrecognised medical problems and the concealment of the history about the associated co morbidities due to social reasons. Though the causes are different, maternal mortality is still on the rise both in the developing and developed nations.

It has been recognised that targeted training in obstetric anaesthesia helps to recognise the mothers

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who need special care and formulate specific plans for delivery, that eventually lead to an overall improvement in the maternal and foetal outcomes.[1] Obstetric anaesthesiologists are now an integral part of the childbirth team.

HISTORICAL PERSPECTIVE

Obstetric anaesthesia was born in 1847 when James Young Simpson of Scotland, an obstetrician, introduced open-drop ether labour analgesia.[2] The acceptance of labour analgesia was not easy, as it confronted religious misbelief (considered labour pain as a divine punishment), social and medical opposition.[3] The social acceptance of labour pain relief came after John Snow administered chloroform to Queen Victoria on April 7, 1853 for the delivery of the Queen's 8th child, Prince Leopold.[4] Though Simpson and Snow practised labour pain relief, the medical qualms about the safety of the anaesthetic agents hindered their widespread use. The physiological importance of labour pain was emphasised by Charles Meigs, which further stalled the progress of labour pain relief.[5] The twentieth century saw a shift toward safer practices to reduce maternal and neonatal adverse outcomes.[6] The scientific advances in anaesthesia drugs and techniques along with greater freedom to females in expression of their choices led to improved obstetrical care. The introduction of inhalational anaesthetic agents, neuraxial techniques and safe practice, suppressed the medical opposition to obstetric labour analgesia. Today, obstetric anaesthesia as a subspeciality of anaesthesia has evolved from the facilitation of caesarean deliveries to labour analgesia for both complicated and uncomplicated pregnancies.

OBSTETRIC ANAESTHESIA AS A SUBSPECIALITY

Obstetric anaesthesia is emerging as a most demanding subspeciality. Obstetric anaesthesiologists as a part of multidisciplinary teams strive to improve maternal and neonatal safety. Obstetric anaesthesia encompasses and embraces all the subspecialities of anaesthesia from cardiac, pain medicine, critical care, besides obstetric medicine, or foetal medicine. Obstetric anaesthesiologists deal with management of postpartum pain, maternal sepsis, haemorrhage, hypertension, non-obstetric medical emergencies with multi-organ dysfunction and maternal acid-base disturbances. Obstetric anaesthesiologists are also involved in the development and implementation of preventive and prognostic early warning systems in obstetrics and the management of near-miss cases.

Why should you choose obstetric anaesthesia as your career?

Is obstetric anaesthesia a good career choice? One needs to look at it from various perspectives – clinical workload, public health perspective, research avenues, professional satisfaction and financial remuneration. From a clinical perspective, obstetric anaesthesia is a busy speciality; further it offers the potential to practise across a wide spectrum of medical disciplines – obstetrics, neonatology, maternal-foetal medicine, critical care, surgery while continuing the perioperative anaesthesia practice.[7-12] The Mallampati grades change rapidly in the mother and demand diligent clinical, airway, regional anaesthetic and pain management skills.[13] Maternal comorbidity like anaemia, hypertensive crises, diabetes and cardiovascular diseases can affect maternal wellbeing in the short and long term.

Providing safe labour analgesia is now a highly specialised and demanding field in obstetric anaesthesia. It alleviates the stress of childbirth and enhances birthing experience and maternal satisfaction. Further, in parturients with co-morbidities, it provides therapeutic benefits as well.[14] There are enough research opportunities in this subspeciality where the wellbeing of both the mother and the unborn child are important, and labour pain alleviation without any harmful effects is still a challenge. The inventions of various patient control regimes and newer pump designs for labour pain relief, due to change in pain dynamics during labour (Computer Integrated Patient Controlled Epidural Analgesia) are the gift of this speciality.

From a public health perspective, obstetric anaesthesia has an important role in the reduction of perinatal mortality. Good obstetric care in toto can tremendously contribute to the society and wellbeing of the country.

Job stability and professional satisfaction play a big role in the decision to pursue any career. Obstetric anaesthesia as a career is professionally very satisfying as it evokes an anesthesiologist's regional anaesthesia skills, difficult airway management, pain relief modalities, critical care and neonatal care as well. The happiness and smile on the mother’s face after labour pain relief is very satisfying. In high-risk obstetric cases, saving a young mother from death is most gratifying as a professional, as it can save an entire family which is centred around her. Unlike the other

specialities, like neuro/onco/cardiac anaesthesia, the perioperative morbidity and mortality are primarily preventable in obstetrics. The longevity of life offered to the young mother is for several decades. The financial remuneration is comparable to all other anaesthesiology subspecialties.[15] The job-challenge along with work commitment gives a good job satisfaction and a sense of empowerment.

Problems of being an obstetric anaesthesiologist

The main disadvantage associated with obstetric anaesthesia practice is the unpredictability of the work timing and load, which can cause high levels of anxiety. The odd timings of labour, lack of proper pre anaesthetic evaluation, support personnel, maternal and foetal monitoring equipment, access to the blood and blood products and round the clock availability of laboratory facility along with urgency of the caesarean section and skill of obstetrician can add to the challenging work environment both in public sector and private sector practices. It is not mandatory that only obstetric anaesthesiologists should be involved in care of pregnant patients. This can at times lead to professional conflicts between anaesthesiologists with and without special training in obstetric anaesthesia. The practice in the rural or suburban areas may differ due to lack of awarenes of labour analgesia practices, lack of awareness of the recent guidelines for non-obstetric and obstetric emergencies.

Advancements/Intellectual stimulation/Challenges

The requirement of obstetric anaesthesiologists is better recognised among the obstetricians in the tertiary care centres. A focused training in obstetric anaesthesia and high-risk obstetrics helps in the ideal management of American Society of Anesthesiologists (ASA) III or IV parturient, in the tertiary care centres. American college of obstetricians and gynaecologists (ACOG) and Society of Maternal-Foetal Medicine (SMFM) outlined different levels of obstetric maternal care from basic care (Level I), speciality care (Level II), sub speciality care (Level III), to Level IV, which is a 'regional perinatal health care center.'[16] The ASA committee on obstetric anaesthesiology and the Society for Obstetric Anaesthesia and Perinatology, recommended availability of obstetric anaesthesia services as per the level of parturient care. For example, Levels III and IV, which are the two highest levels of maternal care, require a board-certified anaesthesiologist with special training or experience in obstetric anaesthesia. These levels of maternal care have further strengthened the value of obstetric anaesthesia.

The perioperative management of non-obstetric surgeries in the obstetric patients needs to weigh the risk and the benefits of the type of anaesthesia to be given to the mother keeping the interest of both mother and the foetus. The increased incidence of medical disorders complicating pregnancies needs the inputs from the obstetric anaesthesiologist even in deciding the mode of delivery. Being an integral part of the multidisciplinary team managing the high-risk obstetrics, having a better understanding of the physiological changes in pregnancy and its effect on the co-morbidities of the patient, improves the ease of communication with other specialities involved, increasing the coordination in the multidisciplinary team.

Teaching aspects

Recognition of obstetric anaesthesia as a valuable subspeciality will unravel a plethora of opportunities to start fellowships in obstetric anaesthesiology. The clinical and public health potential of obstetric anaesthesia translates to a wider potential for innovative research in perinatal care which can lead to improvement in the obstetric anaesthesia practice, enhance the safety for the mother and decrease the work-stress of the specialists.[17] Obstetric anaesthesiologists contribute significantly to the reduction of perinatal mortality through improvised clinical practice algorithms, clinical safety protocols, crisis management, critical care protocols and scores for early identification of at-risk mothers.[18-21] Other areas of research include transfusion protocols especially in massive obstetric haemorrhage, infection control including surgical site infections and obstetric critical care. Research in obstetric anaesthesia has also led to several training programs for emergency life support and skill upgradation. Research into the public health impact of obstetric anaesthesia is currently hidden within the clinical domains and assumes significance when we consider that most rural areas do not have access to services by trained obstetric anaesthesiologists during pregnancy.

Ethical perspective

From an ethical perspective, obstetric anaesthesia has several intriguing challenges. These include understanding the primacy of the mother or the foetus. It is necessary to reconcile the principles of autonomy and personal and professional considerations and viewpoints on the foetus as a person. The principle of autonomy allows the pregnant woman to retain the right to refuse an intervention voluntarily and

with full information of the benefits or harms of the intervention. These can affect the professional ability of the care provider to provide the best care.

Pregnant women are willing to undergo a great deal of inconvenience, discomfort, pain and even risks to their health to protect the health of the foetus. These give rise to ethical conflicts related to autonomy, beneficence, non-maleficence, prudence and subsequently the increasing imbalance between maternal and foetal harms or benefits. These situations are increasingly prevalent with continuing advances in foetal diagnostics and treatment as well as advanced maternal age and comorbidity patterns.[22] Treatments like intrauterine foetal blood transfusions, substantial treatment of foetal arrhythmias, caesarean section for foetal indications and enduring prolonged bed rest are considered acceptable in the hope of a positive foetal outcome. A more difficult ethical dilemma is when pregnant women make choices to secure the health of the foetus at considerable risk to themselves. Obstetric anaesthesiologists must maintain a foetal centric approach, consider risk-sensitive modus that considers maternal and foetal health, preterm birth risks, and long-term health effects on the mother and neonate, and future reproductive health of the mother.

Speciality during pandemics

The outbreak of recent pandemics has added special challenges not only in clinical management but also environmental perspective to contain the spread within the hospitals. All the elective surgical interventions were minimised during the recent corona virus disease (COVID-19) pandemic, except for the obstetric services. COVID-19 pandemic did not significantly affect the delivery rate.[23] Challenges to the obstetric anaesthetists in the current COVID-19 pandemic include the high incidence of asymptomatic carriers among the pregnant women and those in the incubation period.[24] Though the rate of cross-transmission of COVID-19 to healthcare workers with neuraxial anaesthesia is less, the health care workers can get exposed during labour epidural services, which require exposure to the patient multiple times. Use of proper PPE confers good protection against transmission and should be mandatory.[25]

Financial gains/Security/Work stress

Obstetric anaesthesia as a sub-speciality is the bread winner for many anaesthesiologists. Unlike the other medical and surgical specialities, an anaesthesiologist settles early in job. With team practices, the juniors are absorbed immediately after their postgraduation into the established teams. Among the subspecialities of anaesthesia, obstetric anaesthesia has the potential to get established early, has the prospect of choosing either a team or an independent practice.

Anaesthesiologists are placed at high levels of stress and professional burnout. Obstetric anaesthesia is no exception. Since childbirth does not follow a fixed planned schedule, limitations on time may affect the professional as well as the family relations. Group practice over individual freelancing, proper organisation of workplace schedule, providing adequate support to the juniors in the team, building a multidisciplinary team for ASA III/IV cases and having a medicolegal support, can mitigate some of the constraints and allows professional fulfilment and enough time for personal, family, and societal commitments.

Prestigious universities/institutions of repute that teach/train in this super speciality

Training in obstetric anaesthesiology as a sub-specialty requires an additional one-year fellowship training after qualifying as an anaesthesiologist. The first dedicated obstetric critical care unit was started at Hyderabad, India in the year 1998. One-year fellowship course was started in same centre in 2007. Currently the association of obstetric anaesthesiologists (AOA) India, certified fellowship in obstetric anaesthesia is being offered in Hyderabad and Chennai. The details can be obtained by logging on to www.aoaindia.in. Obstetric anaesthesia fellowship courses are offered in United Kingdom (UK) and United States of America (USA) as post-anaesthesia training programmes.

Future scope

Obstetric anaesthesia is a domain that will survive for many years to come as reproduction remains a human characteristic. Trying to improve the perinatal outcome and wellbeing is a priority and the obstetric anaesthesiologist has a major role in these efforts. The choice of obstetric anaesthesia as a career is thus viable from a professional perspective. Currently, most of the obstetric anaesthesia services are in urban settings and tier 2 cities in India. These services integrate with highly advanced tertiary care services, offering the potential to work with challenging clinical scenarios. The possibility to scale obstetric anaesthesia services to rural areas is high for enterprising entrepreneurs.

SUMMARY

Obstetric anaesthesia is a well-paid and sought-after speciality, an integral part of the childcare team, and a dynamic field that demands excellent clinical and interpretative skills in a rapidly changing environment. Every decision can affect two lives simultaneously and in disparate ways. It is a speciality that allows for transdisciplinary growth and the possibility to lead across several disciplines. Obstetric anaesthesiologists are no longer a silent prop in the labour theatre but a leader directing the childbirth team!

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Conflicts of interest

There are no conflicts of interest.

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