

**OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE, NIGERIA.**

**INAUGURAL LECTURE SERIES 338**

**THE ANAESTHETIST,  
ANAESTHESIA, MUCH  
MORE THAN SLEEP**

**By**

**ARAMIDE FOLAYEMI FAPONLE**  
*Professor of Anaesthesia*



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An Inaugural Lecture Delivered at Oduduwa Hall,  
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On Tuesday 11<sup>th</sup> June, 2019

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## THE ANAESTHETIST, ANAESTHESIA, MUCH MORE THAN SLEEP

Mr Vice Chancellor Sir, distinguished ladies and gentlemen, it is with a deep sense of gratitude to the Almighty God and profound joy that I stand before you today to deliver the 338th inaugural lecture of this university, ten years after I got my Professorial Chair in Anaesthesia. Indeed God makes all things beautiful in His time and to Him alone be all honour and glory.

Permit me to start with the words of Professor George Temple of Oxford University. In a lecture in 1954, he remarked that ‘the purpose of an Inaugural lecture can, for comprehension purposes, be regimented into three models: ‘the sublime, the prophetic and the familiar’. The sublime refers to the attempt to sketch out the essence of an academic subject and the dignity required of its practitioners. The prophetic proposes a future course of research within a field of study. The familiar is familiar because it seeks to unravel the boundaries of what is common by making it better known, especially to those who by much familiarity, discountenance its utility and relevance.

My task will be to present the past, the present and the future of these three models--- within the context of the practice of the specialty of Anaesthesia in Nigeria. I intend to share with you some of the experiences I have had in my over three decades of anaesthesia practice. I hope that when the lecture is concluded, you will understand what it means to practise in this field of medicine which has been described as an “enigma”, a ‘puzzle’ or a ‘mystery’--- something that is not easily understood or explained.

This is the first inaugural lecture from the Department of Anaesthesia and Intensive Care, one of the oldest of the twelve Departments in the Faculty of Clinical Sciences of the College of Health Sciences. The Department works in close collaboration with several other Departments to promote safety of lives during surgery for which it is more commonly known, but also in several

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other places outside the operating room especially in situations that are deemed critical for the patient. In practical terms, the relationship with surgery especially is quite close. The 'behind the scene' work that the Anaesthetist does actually makes many physicians and even lay people, to think of an Anaesthetist as the person who only makes the patient sleep during an operation and does nothing else!

### **My journey into the field of Anaesthesia**

I qualified from this prestigious university as a medical doctor in 1982. I then proceeded to the old Adeoyo State Hospital, Yemetu, Ibadan, where I spent the next few years doing my Housemanship and the mandatory National Youth Service. I was subsequently employed as a general duty medical officer where I worked in various Departments of the hospital. For the longest period, I worked in the maternity section and actually tried to specialize in that discipline of medicine without success. However during that period, I noticed that the hospital's biggest challenge was that of providing anaesthesia for women who required operations. When the state government therefore announced that it wanted to sponsor doctors to train in anaesthesia, I indicated my interest. I felt that I would return and render services to improve the outcome of surgical services, particularly for pregnant women who had notoriously high mortality and morbidity rates with caesarean sections. At that time, because of the dearth of Anaesthetists in the hospital, the surgeon had to be the Anaesthetist also. They often gave injections to make the patient sleep and nurses gave subsequent doses at his instruction while he continues the operation. Patients often slept for many days after the baby was born, developing complications in the process. This practice also increased the workload of everyone because patients could not be discharged promptly after surgery. I then told my late mother who had been very proud of my achievements, that I intended to go for further training in 'Anaesthesia' at the University of Ibadan/University College Hospital. My mother asked 'Why would you want to leave this nice field of delivering babies and looking

after pregnant women to just be putting people to sleep? Is that also a specialty?'

Mr Vice-Chancellor Sir, this label of 'akunmọ́lọ́orun' has stuck with me and indeed all other Anaesthetists since then. It was not only my mother who regarded anaesthesia as just about 'sleep' but also colleagues and non-colleagues. To everyone, the anaesthetist or 'akunmọ́lọ́orun' is the sleep merchant who puts just about anyone to sleep. When I hear this, I always quickly add, 'and to wake them up again' because that indeed is the difference between anaesthesia and death!

I stand here today as a Professor of Anaesthesia by the grace of God, having gone through years of training, research and community services in my chosen field. I acknowledge the goodness of God in my life that has brought me this far to make this day a reality. I joyfully want to share with you what I have learnt over the years -- Anaesthesia is much more than sleep....

I joined the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC) in 1992 as a Medical Officer (Special Grade) in anaesthesia at the invitation of then Chief Medical Director, Professor Roger Makanjuola. At that time, there was a dire need for physician anaesthetists in the teaching hospital. Professor Makanjuola had asked the Department of Anaesthesia in Ibadan to recommend a diplomate in anaesthesia to him for employment in the hospital. Professor Olaitan Soyannwo, my teacher and head of Department of Anaesthesia in the University of Ibadan advised me to take the offer, promising to continue to mentor me there. It was a difficult step for me to take because I had a young family. However, I have not regretted the move, and the rest, as they say, is history!

During their undergraduate medical training, medical students ordinarily are exposed to only 2-6 weeks of education in anaesthesia in the Nigerian Universities Commission (NUC) benchmark standards. When I joined the academic staff in Ife, in

1999 after receiving my fellowship training in anaesthesia, I taught the final year medical students anaesthesia for only 5 days which consisted of lectures only from morning to afternoon! This compressed schedule was necessitated because the students until then had had no rotation in the specialty and thus had not completed the required rotations to qualify them as doctors. This amount of education in anaesthesia was even less than that recommended in the Nigerian Universities Commission curriculum. Most students had no idea of what to expect with the posting and were extremely astounded at the intensity of the course.

A few years ago, I conducted a study on the influence of undergraduate medical education on the choice of anaesthesia as a career (Faponle, 2002). None of the graduating class would make anaesthesia their first choice of future career, even though 80% of the students stated that anaesthesia was an interesting and important field. Surgery, obstetrics and gynaecology and internal medicine in that order were their first three choices of postgraduate career. The low rate of interest in anaesthesiology among our students contrasted with the rate found in earlier studies in the UK where 8.2% of the respondents selected anaesthesia as first choice of career (Leven et. al. 1979). The rate was also lower than what was found in Ibadan almost 20 years before then (Akinyemi and Soyannwo,1980). Now, almost twenty years in Ife, this result is changing as many more medical graduates are now choosing the specialty, most likely because of the better exposure they have to the course at the undergraduate level. An Australian study had found that a positive role model helped students to choose anaesthesia as a career (Watts, Marley & Worley,1998).

### **Early History of Anaesthesia**

Anaesthesia is about the earliest specialty in the history of mankind and medicine. The Bible in the account of the creation of the first woman, Genesis Chapter 2 verse 21-22 says 'and the Lord God caused a deep sleep to fall upon Adam, and he slept: and he took one of his ribs, and closed up the flesh instead thereof, and the rib,

which the Lord God had taken from man, made he a woman..." (Holy Bible, KJV).

This is an account of the first surgery but obviously it was preceded by the man falling into a deep sleep before his rib could be removed! So, from earliest times, 'sleep' before an operation had been a salient feature of anaesthesia.

### **Origin of the word 'Anaesthesia'**

The Greek herbalist, Discordis (ca, 40-90CE) used the word 'anaesthesia' translated as a "not feeling pain" in conjunction with mandrake wine as a preparation for surgery. Anaesthesia (insensibility) is from 'a' (without) and 'aisthesis' (perception) as distinct from 'anodyne' a pain- relieving remedy, derived from 'a' without 'odune'(pain).

Before the development of anaesthesia, surgery without anaesthesia was common but frightening. Many people avoided the surgeons, or died in the process of being operated, from the 'shock' of Surgery without anaesthesia! A patient in pain will move excessively and the procedure will be difficult to perform. Anaesthetic methods commonly employed in the 18<sup>th</sup> Century were hypnosis, alcohol and opium, by inhalation of its vapour and application of its powder to the wound. Some extreme methods also were employed such as compression of the carotid arteries to cut off blood to the brain. Phlebotomy or bloodletting, when carried out aggressively enough, also caused loss of consciousness and was utilized as a pain killer. Such methods obviously, though causing 'sleep' or unconsciousness, can also promptly kill.

Discordis emphasized that when physicians are about to cut or burn a patient, they should give him the 'wine of mandrake or Mandragora', to cause insensibility! Mandragora is an extraordinary plant that can be inhaled, eaten, drunk or rubbed into the body to induce analgesia. It is even said to have been used by the Romans to minimize the pain of crucifixion. The plant contains alkaloids such as scopolamine which presumably are the basis for its use. There is evidence also that cannabis was used by early

civilizations, especially the Chinese to produce painless operations as early as 200 AD.

Other unconventional anaesthetic methods used included placing a limb for amputation in a bucket of ice to render it numb before surgery. Also, intentional head injury (by hitting the patient's head) was also used to cause unconsciousness. Physical restraint and grit were employed to keep the patient still for surgery. The case of Dr. Robert Liston (the fastest knife in the West End) is an example. He was operating on a patient with a bladder stone; the patient broke free from the restraining arm of Dr Liston's assistant and fled the room. Dr Liston recaptured the man and completed the operation while the man kept screaming!



Oliver Wendell Holmes, a professor of anatomy and physiology, five weeks after the first public demonstration of ether inhalation in the USA, in 1846 wrote, 'Everybody wants to have a hand in a great discovery. All I will do is to give a hint or two as to names- or the name to be applied to the state produced by the agent. The state I think, should be called 'anaesthesia'. This term signifies insensibility- more specifically 'to objects of touch'. The adjective will be 'anaesthetic'. Thus we might say, the state of 'anaesthesia' or the 'anaesthetic'.

Anaesthesia is one of the greatest discoveries of modern medicine. Progress in medicine has been made possible by the ability to conquer pain. As anaesthesia developed, so did surgery. The most

complex surgical procedures are now possible because of appropriate anaesthesia. Most surgeons now realize that 'without anaesthesia, surgery cannot go on'. Most of today's operations, especially for the very young, very old, or very ill would not be possible without it.

The first documented anaesthetic death occurred in Britain in 1848. A 16 year old girl died from chloroform anaesthesia administered for the excision of an in-growing toe nail. After this mishap, only physician anaesthetists were permitted to practice anaesthesia in Britain. Some other Commonwealth countries have now adopted this policy.

With the development of newer and safer agents, anaesthesia has become safe. The incidence of death from an anaesthetic as the sole cause is now as low as 1:200,000 administrations in many developed countries.

Dr William Morton was the first person to give a public demonstration of ether inhalation at the Massachusetts General Hospital, USA on 16<sup>th</sup> October 1846. A monument in his honour has been erected in Mount Auburn Cemetery in Boston. It reads 'inventor and revealer of inhalational Anaesthesia: Before whom, in all time, surgery was agony; by whom, pain in surgery was averted and annulled; since whom science has control of pain'. World Ether Day is celebrated on October 16 every year.



## **Modern Anaesthesia Practice**

Anaesthesiology is an acute medical specialty which requires an in-depth understanding of physiology and pharmacology, with the need to be practically adept and to have knowledge, skill and attitude that go beyond putting the patient to 'sleep'. These requirements include the use of drugs and techniques to deaden pain in various parts of the body to permit easy performance of surgery. The specialty requires knowledge, understanding, skills and attitudes as well as appropriate communication skills.

Anaesthesia for surgery can be provided via two main routes – the use of drugs to induce unconsciousness or of local anaesthetic agents to block nerve transmission in specific nerves in the body. The induction of unconsciousness is often termed the 'sleep' of anaesthesia.

The first inhalational anaesthetic used for induction of anaesthesia was ether which was synthesized in 1540. The subsequent discovery of nitrous oxide in 1777 and identification of its analgesic action in 1888 were landmarks in the history of anaesthesia. Newer inhalational agents now in common use are halothane, isoflurane, sevoflurane and desflurane.

The use of local anaesthetic techniques such as epidurals (injection of local anaesthetics into the epidural space), spinal anaesthesia (injection into the subarachnoid space) and other peripheral nerve blocks is now common. A local anaesthetic is an agent which when applied to a nerve, at non-toxic concentration, will reversibly block the conduction of a nerve impulse in a limited area of the body. Regional anaesthesia originated about 38 years after the discovery of general anaesthesia. Surgeons were looking for safer alternatives to the general anaesthetic techniques that were in use. The inability to move the lower limbs that usually follows the application of this technique always amazes patients. I remember one of my patients at the Wesley Guild Hospital, Ilesa, who was given a spinal anaesthetic for his operation. He had apparently followed the whole procedure carefully throughout and was

surprised that his abdomen was being cut while he was wide awake and yet he felt no pain. In the recovery room after the operation, he called me aside and asked me quietly to please teach him how to give this injection. He said he needed to administer it on his political opponents because 'he will render them immobile and they will no longer be able to go about antagonising him'!

## **What does the Anaesthetist do?**

An Anaesthetist is a medical doctor who has specialized in the field of Anaesthesia and spends his/her life in practising the profession. The World Federation of the Societies of Anaesthesiologists (WFSA) introduced the terminology 'peri-operative physician' which really encompasses what we do. Peri-operative physicians have specialist knowledge in managing comorbidities, optimizing patients before surgery, providing appropriate anaesthetics for surgery and providing a tailored post-operative recovery package with improved surgical outcome.

From the head of the operating table, the anaesthetist provides intra-operative care of the surgical patient. This care includes induction of the anaesthetic state and airway management before the operation can start, continual observation and monitoring of the patient, pain control and fluid management. Paying attention to details is important and the ability to respond appropriately to sudden changes in the patient's condition is of utmost importance whether the patient is asleep or awake during surgery. The anaesthetist is on alert, keeping close watch on not just the patient but also on the surgeon, the nurse, the theatre operating room environment and anything else that may pose a threat to the successful outcome of the operation.

An important duty of the Anaesthetist is documentation of patients events during the operation. This is an important part of monitoring. Record charting and keeping during anaesthesia demands accuracy and completeness for patient's safety and medico-legal and research purposes.



The variables that are monitored should be recorded frequently and regularly. Documentation allows the attending anaesthetist to assess the trends of the physiological variables and to treat appropriately. Patients who have lost a lot of blood during surgery have decreasing blood pressure, increasing heart rate, declining body temperature and little or no urine output. The anaesthetist's appropriate response to the situation is to give blood or more fluids to restore the blood pressure and other vital signs. Thus, the anaesthetist keeps the patient alive while the surgeon concentrates on 'cutting and repairing'!

The anaesthesia chart is a complete record of all the pre-operative, intra-operative and post-operative events in every surgical case. It also serves as a legal document as it will indicate the difficulties encountered during anaesthetic application. The anaesthetist's chart is part of the patient's records and can be referred to in any repeat anaesthetics for the patient to guide management and ensure previous errors are not repeated. Thus, while the patient is 'sleeping', the anaesthetist must dutifully watch the patient and keep a record of all events going on and the state of the patient. Team spirit is also a crucial aspect of successful surgical care. The World Health Organisation in 2015 endorsed the Anaesthesia Safety Checklist to be started before induction of anaesthesia to help assure patient safety in the operating room.

The nature of anaesthetics requires the Anaesthetist to work in the background away from the view of the patient who may never know the important role the anaesthetist played in the success of the operation. If ever you have a successful operation, when you have recovered, please thank your anaesthetist.

### **What is the nature of the 'Sleep' of Anaesthesia?**

Anaesthesia and anaesthetics are often referred to as 'sleep' state. However, during ordinary sleep, many things can wake you up.... loud noises, breathing difficulties, being too hot or too cold, a full bladder, physical pain or just about anything that is peculiar to you. However under general anaesthesia such factors would likely not

wake you up. The deepest ordinary sleep is not as deep as anaesthesia (measured by response to stimuli). Thus, 'going to sleep' during anaesthesia is not a form of sleep as we know it, but an oversimplification of the whole process.

General anaesthesia seems like reversible coma. Electroencephalographic readings of brain activity during anaesthesia are not like those of any stage of sleep. Indeed the readings are more like those of a comatose patient. Being under general anaesthesia is very different from sleeping. Although anaesthesia and sleep are often considered much alike, they have clear differences. During general anaesthesia, consciousness, pain, and motor function are lost completely. As the anaesthesia deepens, low frequency and high amplitude activity increases. Electroencephalographic (EEG) activity spreads symmetrically across the brain and reaches wider areas than in sleep. Also, muscle atonia and resulting apnea may occur. Whereas anaesthesia is categorized into four phases, nocturnal sleep is divided into rapid eye movement (REM) sleep and non-rapid eye movement (NREM) sleep. REM sleep occurs at intervals of 90 to 120 minutes, accompanied by rapid eye movement and depression of muscle tone. During three stages of no rapid eye movement sleep, body temperature and pulse decline simultaneously. As in anaesthesia, low frequency and high amplitude activity increases as sleep deepens, but EEG activity spreads asymmetrically. During nocturnal sleep, muscle tone and normal breathing are maintained. EEG differences between anaesthesia and sleep are listed in the table below.



Comparison of characteristics of anaesthesia and natural sleep onset, maintenance, and offset (Jihyun Song, Yoo Hyun Um, 2018)

	<b>Anaesthesia</b>	<b>Sleep</b>
Onset	<p>Induced with medication</p> <p>Less notable effect of environmental factors</p> <p>Operated regardless of circadian rhythm or homeostasis</p>	<p>Naturally initiated</p> <p>Notable effect of environmental factors</p> <p>Operated by circadian rhythm</p>
Maintenance	<p>Dose dependent depth and duration</p> <p>Less notable effect of environmental factors</p>	<p>Circadian rhythm and daily cycle dependent duration</p> <p>Cycle of multiple stages of sleep</p> <p>Notable effect of environmental factors</p>
Offset	<p>Delayed recovery of alertness</p> <p>Alertness dependent on dose and duration</p> <p>Immediate follow-up anesthetization is possible</p> <p>Probable adverse effects</p>	<p>Quick recovery of alertness</p> <p>Alertness dependent on duration and circadian rhythm</p> <p>Immediate follow-up sleep is difficult</p> <p>Sleep disorders may impair sleep quality</p>

With general anaesthesia, you're actually in a carefully monitored state of unconsciousness that is adjusted according to your needs. The exact mechanism of Anaesthesia is still not fully understood.

**Provision of Anaesthesia for surgery**

Every patient who is scheduled for surgery is visited by the anaesthetist before the operation for pre-operative assessment. During this visit the Anaesthetist gets to know the patient, using basic medical principles of history, physical examination and review of results of investigations. The patient gets to know the Anaesthetist and develops a relationship. He/she can also ask questions pertaining to the Anaesthesia such as 'What if I won't go to sleep?' 'What if I don't wake up at the end of surgery?' The Anaesthetist allays patient's fears and explains in detail the process of the anaesthetic. The pre-operative visit is used to inform the patient about fasting guidelines, prescription of pre-medication and post-operative care.

The patient's pre-operative visit is very important in reducing morbidity and is an important duty of the Anaesthetist. After assessing the patient, the Anaesthetist decides whether the patient is 'fit for surgery'. If the patient is determined unfit, the operation is delayed, attempts are made to optimize his/her condition and consideration will be given to the safest choice of anaesthesia for the patient. If the anaesthetist does not conduct the pre-operative visit and there is an adverse peri-operative event, the anaesthetist will be found 'negligent'.

For surgery, it is important that the patient fast for a variable period before the operation because unconsciousness has a risk of regurgitation of stomach contents and aspiration into the lungs; aspiration is a potentially fatal complication of anaesthesia. Pre-medication is the administration of drugs to help allay patients anxiety of surgery, empty the stomach and produce a smoother induction of anaesthesia. Pre-medication may also be achieved with non-pharmacological means by counselling the patient and allaying the fears and concerns the patient may have. Non-pharmacological preparation has been helpful in reducing anxiety in about 90 per cent of the cases. Successful pre-operative assessment and preparation ensures a smooth anaesthetic procedure.

Patients may need to be operated and discharged from the hospital the same day. Such services are usually provided in an Ambulatory or Day Case Surgery Unit. I initiated the development of the Pre-anaesthetic Clinic in the OAUTH, Ile- Ife in 2003. My request for a space to run the Clinic in the Surgical outpatient Clinics was graciously approved by the then Chief Medical Director, Prof Olusanya Adejuyigbe, at whose instance the Day Case Unit was actually introduced. The concept was strange to many colleagues who believed that anaesthetists worked only in theatres to put patients to sleep. With perseverance, it eventually gained acceptance as many colleagues subsequently started referring their patients to me before scheduling for surgery. I noted that in order to prevent mortality and morbidity, appropriate day case surgical protocols and guidelines must be followed as recommended by the Association of Anaesthetists of Great Britain and Ireland. All patients scheduled for Day case surgery in the hospital are seen and reviewed at this clinic before the day of surgery and any issues which may cause a delay or unexpected outcome with their anaesthesia are attended to before surgery. This is the first of its kind in any Teaching hospital in Nigeria. It enables the Anaesthetist to have an input in patient preparation for surgery and thereby reduce operation delays and cancellations, provides facilities for hands on experience for trainee surgeons and anaesthetists as well as provide opportunities for collaborative research across specialties. We published the activities of the Unit over the first 9 years in 2014.

We conducted a study on pre-operative and post-operative anxiety among elective major surgery patients in Ile-Ife (Akinsulure, Owojuyigbe, **Faponle** & Fatoye, **2015**). The study was one of the very few that have been conducted in Nigeria among the surgical populations. In this questionnaire based study, patients presenting for major operation were assessed with the state-portion of the State-Trait Anxiety Inventory (STAI). Various and different factors responsible for their anxiety were selected from a list. Fifty-one percent of the patients had significant preoperative anxiety and 15.7% had significant post-operative anxiety. There

were significant differences between the pre-operative and post operative mean STAI scores. Fear of complications and result of the operation were the most common factors responsible for pre-operative anxiety, whereas a few patients were anxious about the fasting, being stuck with a needle and incurring harm from doctor/nurse mistake. We recommended that psychological preparation and verification of correct information that addresses identified factors may help in reducing pre-operative anxiety.

We reviewed pharmacological options for the management of dental anxiety in children. (Folayan, **Faponle**, Lamikanra, 2000). Pharmacological agents may be used as a complement to behavioural techniques to assist in the management of anxiety in paediatric dental patients, especially in children with disabilities. These agents are usually sedative and do not in themselves eliminate anxiety but enhance patient acceptance of the anaesthetic by reducing arousal and modifying anticipation of danger. The agents used are varied and diverse but all help with tolerance of the anaesthetic. I pioneered the use of oral ketamine in the management of paediatric outpatient dentistry in the hospital. Prior to this, children who came for minor dental procedures were difficult to handle. We explored various doses of ketamine and benzodiazepines for use as conscious sedation agents in these children; the results were encouraging. The alliance between the Department of Child Dental Health and the Department of Anaesthesia and Intensive Care made it possible to run the first conscious sedation management program for child dental health in Nigeria. We had in collaboration, ran a training course for other interested child dentists in Nigeria. We plan to continue to teach this competency to others. (Folayan, **Faponle**, Ozeigbe, Adetoye 2014).

### **Induction of Anaesthesia**

Patients who have been found fit for anaesthesia are taken to theatre for induction of anaesthesia and the surgery. Induction is the process of putting the patient to sleep which can be achieved by intravenous (injection) or the inhalational route (gas); which is

common in children. Induction agents are drugs that act rapidly when given via either of the two routes to cause loss of consciousness or induce sleep. Before inducing anaesthesia, monitoring of the vital signs is instituted by attaching recording equipment to the patient. International standard guidelines for Anaesthesia for surgery state that the blood pressure, respiration, temperature, oxygen saturation and electrocardiogram should always be monitored during any anaesthetic procedure. Hence, all health facilities where anaesthesia is provided must have these appropriate monitoring facilities in place. The airway must be kept open during anaesthesia as unconsciousness can cause the tongue to fall back and obstruct respiration. To keep the airway open, a tube may be passed into the airway or a face mask may be used or the patient may be placed on their side. Anaesthetists are skilled in the use of various manoeuvres and airway adjuncts to keep the airway open which is referred to as airway maintenance.

Once induction has been successfully completed, the patient is kept asleep throughout the operation, a state described as the maintenance of anaesthesia, no matter the duration of the surgery – sometimes more than 10 hours! Under anaesthesia muscle paralysis may be necessary to make the surgery smoother for the surgeon and this is provided with drugs called muscle relaxants. Artificial ventilation is instituted to simulate normal respiration throughout the duration of surgery. Alleviation of pain is provided through the use of strong analgesics. Intravenous fluids are given throughout operation and blood may be transfused by the anaesthetist if deemed necessary to replace blood lost during surgery. Decisions about blood, fluids, anaesthetics, muscle relaxants and analgesics are all made by the Anaesthetist. Vital signs are monitored during the maintenance phase and the anaesthetist responds to the various physiological responses as appropriate by administering medications, fluids, blood transfusion or other treatment deemed appropriate. The patient is properly positioned and kept warm for the surgeon to proceed.

The final phase in theatre is described as the Stage of Emergence. Once the surgery is over, the Anaesthetist reverses all the effects of

the anaesthetic agents, and the airway device removed. The effects of all anaesthetic agents used must be completely reversed or else complications can arise. The patient is then taken to a recovery room or intensive care for observation and care before discharge to the ward or home as appropriate.

Patients often are surprised by the rapidity of induction of anaesthesia, which is very fast with agents in use now. The anaesthetist usually talks to the patient on the operating table and may say, 'You will soon be asleep. Can you count 1 to 10 for me?' Most patients fall asleep before the count of 3! When they wake up in the recovery room, the first statement is often 'Has the surgery been done? Where am I? I didn't know when I slept off'. They are amazed that they have slept so soundly and the last thing they can remember was being asked to count 1 to 10!

Anaesthetists are thus physiologists, clinical pharmacologists and much more. A core part of their training is a clear understanding of effects that various medical conditions may have on the action of anaesthetic and analgesic drugs used. During the operation, the anaesthetist is ever present to see to the patient's needs while providing optimal operating conditions for the surgeon to help avoid complications, irrespective of the age of the patient or the disease condition he may present with. Precise choice of drugs and techniques for anaesthesia are integral parts of the anaesthetist's training.

Manpower constraints and inadequate facilities militate against safe anaesthetic practice in developing countries. Working with colleagues in one of the earliest publications on the topic in Nigeria, we found that there was profound shortage of Anaesthetists in the country. (Soyannwo, Oduntan, Faponle, 1997). Only 161 physician anaesthetists were available in the entire country and 98.1% of them were working full time in hospitals located in urban areas, a distribution that is also replicated in most countries in the Sub-Saharan region. The supply of anaesthetic and monitoring equipment as well as recovery room

facilities were considered unsatisfactory in most centres. Adequate Intensive Care Unit facilities were available in only 19.2% of the hospitals.

The shortage of Anaesthetists was particularly severe in our university's Department of Anaesthesia. Before the appointment of the inaugural lecturer in 1999, the department had existed for about 20 years without its own permanent staff. Visiting lecturers were employed regularly to teach anaesthesia in the medical school and to oversee anaesthetic services in the university teaching hospital. The headship of the Department was rotated among surgeons in the Department of Surgery. Thus, my preoccupation upon employment was to build capacity in anaesthesia in the university so as to reverse this problem. Improvement in the training and remuneration nationwide has improved the number of practising anaesthetists in Ile-Ife. The department is now physician-dominated, with academic staff that have been mostly trained in Ile-Ife. I recognize the presence of all physician Anaesthetists who have shunned other options and opted to complete their training here in Ife and those who continue to work as academic staff under the tutelage of a very hard trainer! Today, we have all made history together.

Current guidelines recommend that monitoring facilities should be available whenever patients are to be sedated or anaesthetized. Pulse oximeters are medical devices that monitor the level of oxygen in a patient's blood and alert the health care worker if levels drop below safe levels, requiring rapid intervention. These devices are essential in any setting in which patients' blood oxygen level requires monitoring, such as during operations, in emergency and intensive care units and in hospital treatment and recovery units. Pulse oximeters facilitate the assessment of blood oxygenation in patients under anaesthesia.

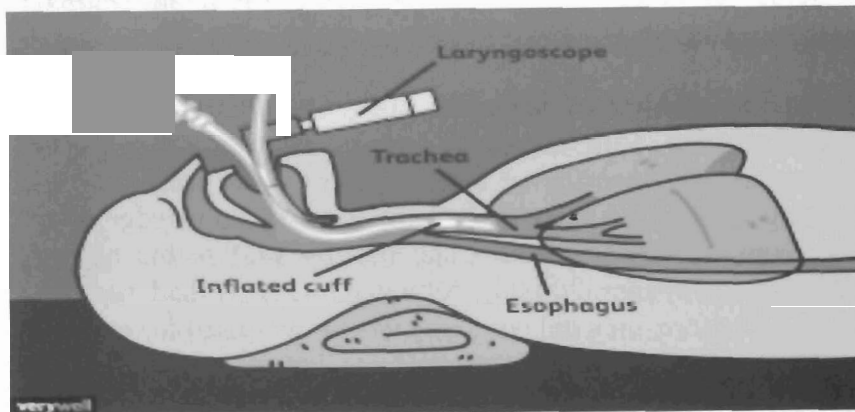
## PULSE OXIMETER



In one of our earliest studies, we noted that health care workers had little knowledge of the principles of pulse oximetry and many had never used the equipment. I initiated the purchase of the first pulse oximeter in the hospital in 2001. It was introduced into clinical practice after an initial training of the staff in the Department of Anaesthesia and Intensive Care and in the operating rooms. We then studied the level of knowledge about pulse oximetry among medical and nursing staff in the hospital (Faponle & Erhabor 2002). Although the staff had seen the equipment before, they did not know what it was used for and how to use it. Many of the respondents referred to it as the 'anaesthetist's equipment that gives the sound 'to, to, to', in the theatre!' though it was available to all health care practitioners. We therefore embarked on an intensive training program to ensure that practitioners knew how to properly use this valuable equipment. I am happy to report that multi-parameter monitors as well as pulse oximeters are now used routinely in the hospital not only in the theatres, but also in many wards in line with best practices all over the world.

## Airway management

Endotracheal intubation is a procedure regularly carried out by anaesthetists to maintain the patency of the airway under general anaesthesia. Safe airway management is one of the key duties of the anaesthetist while the patient is asleep. Poor airway management is the cause of profound morbidity or mortality during surgery. The airway is located anterior to the oesophagus anatomically. This arrangement means that in attempting to place a breathing tube during surgery when the patient is asleep, the tube can inadvertently be placed in the oesophagus. In that event, the patient develops hypoxia which can kill within minutes. Wrong intubation has been known to cause deaths during anaesthesia. The trained anaesthetist can recognize and manage a wrong intubation immediately and prevent an adverse outcome. Usually an operation would not have started at all before a wrong intubation and the surgeon could say categorically 'I did not touch the patient before he died' Appropriate training to ensure competency in airway management is a crucial part of the training in anaesthesiology.



Trauma victim - Where is the airway?

Adequate pre-operative airway assessment and appropriate planning are essential in avoiding unanticipated difficult airway, thus preventing potentially catastrophic airway related events. Closed claims analysis has found that most airway related events result in irrevocable damage to the brain or death. Nearly one third of deaths attributable solely to anaesthesia have been due to failure to protect airway.

The incidence of difficult intubation ranges between 1.5 – 13%, depending on the patient population. The American Society of Anesthesiologists task force on difficult airway defined difficult laryngoscopy as 'when it is not possible to visualize any portion of the vocal cords during conventional laryngoscopy' (Woodall & Cook 2011). Difficult intubation was defined as a situation in which tracheal intubation requires multiple attempts in the presence or absence of tracheal pathology. (Henderson, Popat, Latta, & Pearce 2004).

Recognition of the potentially fatal consequences of failed airway has led to the introduction of newer airway devices, algorithms, and research into the most accurate test(s) for pre-operative airway evaluation. Anaesthetists have devised different screening tests to



aid airway maintenance. These include assessments of the mouth, neck mobility as well as radiological examination of the neck. In an earlier study, it had been noted that in West Africans, the best predictors of difficult laryngoscopy were the combination of modified Mallampati Test (MMT), thyromental distance (TMD) and inter-incisor gap (IIG) measurements. (Merah, Wong, Ffoulkes-Crabbe, Kushimo & Bode, 2005). Two more recently introduced bedside screening tests such as the upper lip bite test (ULBT) and ratio of height to thyromental distance (RHTMD) have been studied in Caucasian populations. The ULBT assesses the ability of the lower incisors to bite the upper lip while the presence of mandibular subluxation and buck teeth are also evaluated. The RHTMD has the advantage over TMD of allowing for individual body proportions (RHTMD  $\geq 25$  suggests difficult laryngoscopy). These two tests have been shown in Caucasians, to be better predictors of difficult visualization of the larynx than are other single airway assessment tests, including the MMT, TMD and IIG measurements. (Schimitt, Kirmse & Radespiel-Troger 2002; Khan, Kashfi & Ebrahimkhani 2003; Shah, Dubey & Yadav, 2013).

Various populations have anthropological differences especially in facial morphology. Hence, airway assessment tests useful in Caucasians may not always be useful in African populations and vice versa. There appears to be a paucity of data on the validity of these two tests (ULBT and RHTMD) in the African population. In a more recent study, we evaluated the predictive value of the ULBT as well as the ratio of height to thyromental distance in a Nigerian adult population scheduled for elective general anaesthesia with endotracheal intubation and compare with the more commonly used screening tests- MMT, TMD, IIG. In the Nigerian population, the combination of the older airway assessment tests (MMT, TMD, IIG) correctly identified more patients with difficult visualization of the larynx than did the newer test combinations (upper lip bite test and ratio of height to thyromental distance). Of the individual tests, the modified Mallampati had the highest sensitivity, correctly predicting 55.6%

of patients with difficult visualisation of the larynx. The ratio of the height to thyromental distance had the second highest sensitivity but this was nonetheless low, as it was only able to correctly identify 37.5% of patients with difficult visualisation of the larynx. (Dada, Faponle & Adenekan 2018)

### The Mallampati Classification Mallampati Classification



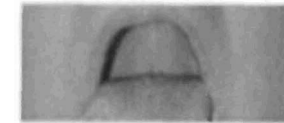
**Mallampati 1**  
Generally associated with  
An easy intubation



**Mallampati 2**  
Generally associated with  
an easy intubation



**Mallampati 3**  
Potential for intubation  
Difficulty

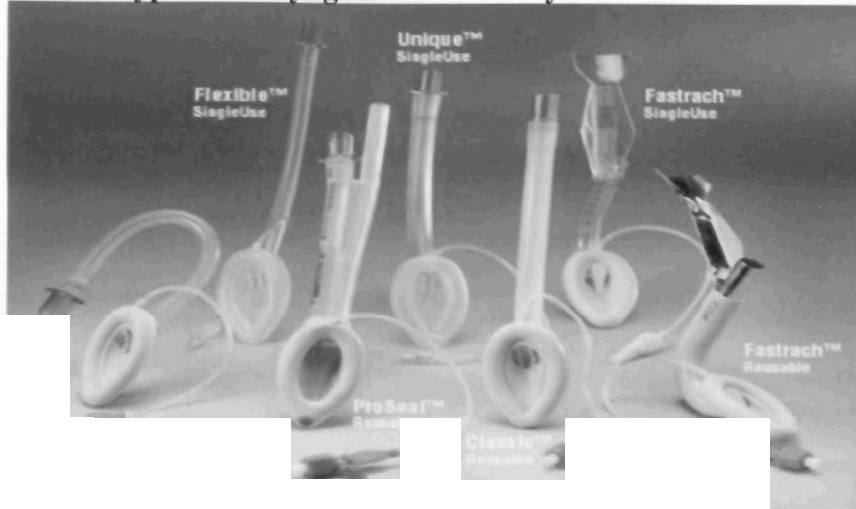


**Mallampati 4**  
Potential for intubation  
Difficulty

Another airway challenge we studied was that of patients presenting with facial burns and other facial deformities. Post burn face deformities and severe mento-sternal contracture present difficulties to the Anaesthetist because of limited space, restricted mouth opening and inability to extend the neck at intubation. Modern anaesthetic practice provides improved techniques with sophisticated equipment for managing such patients, but in many instances, the anaesthetist practicing in low resource economies does not have such equipment. I have studied and published how to use cheap and available drugs like ketamine or laryngeal mask airways to manage these patients safely (Faponle and Olabanji

2001; Faponle and Olabanji 2003). These techniques are used routinely now in our hospital to manage such patients with good results.

### Various types of Laryngeal mask airways



### Experience with Cleft repair

Cleft lip and palate are the most common craniofacial abnormalities worldwide. If left uncorrected, cleft lip can have significant social and psychological consequences for both the child and family. A cleft palate interferes with feeding and speech because of velopharyngeal insufficiency. Clefts are not simply a surgical problem: individuals with clefts or other craniofacial anomalies require the coordinated care of several specialists including anaesthetists. Airway-related problems are the major cause of anaesthetic morbidity and mortality in cleft lip and palate surgery.



Anaesthesia for cleft lip and cleft palate surgery is rewarding. Anaesthesia may range from extremely challenging, in a neonate or infant who has a rare syndrome with a difficult airway and congenital heart disease, to routine in a healthy infant with a simple defect of the upper lip. Both are equally rewarding when the parents see the dramatic improvements after surgery. Simple cosmetic surgery? It is not - nor is the anaesthesia!

In most developed countries, cleft lip and palate care has evolved into organised cleft teams based in regional or supraregional



centres. The situation is different in most developing nations, where lack of trained medical personnel hinders a high-quality dedicated team approach to delivery of care to orofacial cleft patients. Many of these patients from resource-poor nations are managed through surgical outreach programmes funded by donor organisations around the world. Partnership of our hospital with the Smile Train Organisation resulted in an increase in the number of cases managed in our Teaching hospital. Working with colleagues, we studied the incidence of peri-operative adverse airway events in cleft lip and palate surgery managed by a local team in our centre, to identify the associated factors, and to analyse the management of the patients with a view to making appropriate recommendations for the anaesthetic management of cleft lip and palate patients in developing economies. One hundred and sixteen patients who had cleft lip and palate repair over a five-year period were included. The demographic data, surgical diagnosis, congenital anomalies, procedures performed, medical problems, peri-operative anaesthetic and surgical complications were studied. Adverse airway events occurred in six patients (4.6%). These included postoperative chest infection (n=2), failed intubation (n=1), difficult intubation (n=1), post-extubation bronchospasm (n=1), and laryngeal oedema (n=1). All, except one, who developed complications were patients with combined cleft lip and palate. No mortality was recorded. This was indeed a very good outcome considering the limited resources we had to work with. After our initial success in managing cleft cases, the Department of Anaesthesia in collaboration with the Oral and Maxillofacial Surgery Department hosted a training for nurse anaesthetists involved with managing cleft cases in the sub-region with support from an international organisation where I was the lead facilitator in airway management. (Adenekan, **Faponle** & Oginni, 2011; Adenekan, **Faponle** & Oginni 2012). We plan to continue building capacity in this area.

### Perioperative Adverse Airway Events and Patients' Characteristics

	Patient's Biodata / characteristics	Airway complications	Treatment
Patient 1	4.5 months, 6.5kg, right cleft lip and palate, cough	Difficult intubation and desaturation	Rescheduled; uneventful 2 weeks later.
Patient 2	11 months, 6kg, left cleft lip and palate, associated microcephaly, micrognathia and hypertelorism	Best laryngoscopic view was Cormack and Lehane III. Failed intubation	Postponed till child is 10kg
Patient 3	2.5 years, 13kg, cleft soft palate with bifid uvula, had palatoplasty	Post-extubation bronchospasm	Halothane in 100% oxygen, IV aminophylline, discharged POD 3
Patient 4	1 year, 8.6kg, left cleft lip and palate, had palatoplasty	Post-extubation laryngeal oedema	Re-intubation in the OR, Nursed in the ICU with ETT for 72 hrs. Hydrocortisone, nebulized adrenaline, oxygen, antibiotics and analgesic. HomePOD7
Patient 5	15 months old, 9kg, left cleft lip and palate. Had palatoplasty	Postoperative chest infection 24 hours after surgery	IV diazepam 1mg stat in PACU, then 5mg 8 hrly for 24 hrs for sedation. O <sub>2</sub> , hydrocortisone, antibiotics. Improved in 48hrs, Home POD 13
Patient 6	8 months old, 5.5kg, bilateral cleft lip and palate, had lip repair	Postoperative chest infection 24 hours after surgery	Oxygen, Nebulized salbutamol, IV frusemide, digoxin, antibiotic, hydrocortisone and supplemental O <sub>2</sub> , improved 72hrs, Home POD 7

## **Acute Pain Management**

Peri-operative pain management is an important component of anaesthesia and one of my special areas of research interest. Pain, as defined by the International Association for the Study of Pain is 'a sensory or emotional experience associated with actual or potential tissue damage or described in terms of such'. Inadequate pain management in the surgical patient could result in increased morbidity or even mortality. In my research, I have focused on methods of improving pain relief in the adult or paediatric surgical patient, as well as in women in labour. Working with my colleagues, we found that intra-operative analgesics were not generally used then in our practice for various reasons, especially because of non-availability of effective opioids in the country for about a decade, and practitioners' limited skill in using modern techniques of pain management. Many surgical patients (about 40%) reported severe or unbearable pain 24 hours after surgery (Faponle, Soyannwo and Ajayi, 2001). There is a common notion that pain always accompanies surgery and the patient is advised 'to bear it like a man' as it will not last long. Anyone who cries is deemed a weakling! This is, however, a misconception.

According to international human rights law, countries must provide pain treatment medications as part of their core obligations under the right to health. Failure to take reasonable steps to ensure that people who suffer pain have access to adequate pain treatment may result in the violation of the obligation to protect against cruel, inhuman and degrading treatment. Despite the clear consensus that pain treatment medications should be available, approximately 80% of the world population has either no, or insufficient access to treatment for moderate to severe pain.

Clearly then, we know that opioid drugs are essential for medical care in Nigeria. The Federal Ministry of Health in conjunction with the European Union and supported by the United Nations Office on Drugs and Crime launched the handbook on Pain management in Nigeria in 2018. This is the first attempt at putting pain management in context in the nation, a highly commendable effort.

I represented the Society for the Study of Pain at a stakeholders meeting where all recommendations were fine tuned before the guidelines were published.

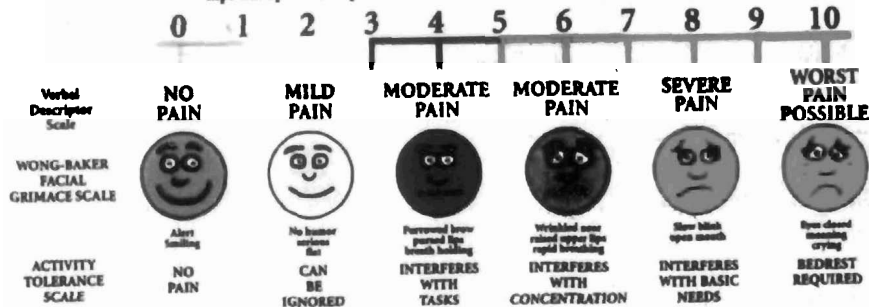
The Society for the Study of Pain, Nigeria (SSPN) which is the Nigerian Chapter of the International Association for the Study of Pain (IASP) has existed in Nigeria for over 21 years. Its main objectives are advocacy, training and research in pain management. The Society supports the development of policies that ensure advances in both the science and delivery of health care for people in pain. It is a concern that, considering the burden of pain in Nigeria, transfer of knowledge about pain is not happening at an appropriate pace. It has been my honour and privilege to have been serving as the Nigerian President for two consecutive terms.

## **Pain Assessment in patient management**

Assessment drives management in pain medicine. Various assessment tools suitable for various age groups and clinical conditions have been developed. The pain assessment tools used in adults include the visual analog scale (VAS), the numerical rating scale (NRS) which is a scale of 0 (no pain) to 10 (unbearable pain) and the verbal rating scale using words that best describe the pain e.g mild, moderate or severe pain. These scales can also be used by children who are verbal. For younger children, there are pictorial scales like the Oucher and Faces Pain Rating scale. For neonates and infants, quantifying the severity of pain can be more challenging as only behavioural or physiological metrics are used. These metrics like crying and heart rate can be affected by other things apart from pain.

# UNIVERSAL PAIN ASSESSMENT TOOL

This pain assessment tool is intended to help patient care providers assess pain according to individual patient needs. Explain and use 0-10 Scale for patient self-assessment. Use the faces or behavioral observations to interpret expressed pain when patient cannot communicate his/her pain intensity.



Relief of post-operative pain is a major objective in the care of surgical patients. I studied doctors' prescriptions for post-operative pain relief and found that prescription patterns in Nigeria have not changed much over decades with only intramuscular injections being prescribed. New treatment modalities such as patient-controlled analgesia (PCA) and lidocaine or ketamine infusion which are used routinely in developed countries are not being used in Nigeria (Faponle and Soyannwo 2000; Faponle, 2001). Recognising this fact, we sought to improve on our practice by using advocacy and capacity building. I am happy to say that this approach has affected the practice of many of my colleagues and we are beginning to see a change. We have recommended the use (as a routine), of 'pain assessment' as the fifth vital sign in the post-operative period in addition to the four currently being monitored - heart rate, blood pressure, temperature and respiration. This assessment is intended to guide and rationalize pain control to achieve a wider degree of patient satisfaction in the post-operative period as has been recommended by the World Health Organization since 1986 but has not been uniformly practised in many hospitals in Nigeria.

I also noted inadequate pain management in children who had day case surgeries (Faponle & Ussang 2007). Pain on the way home was the most common symptom occurring in over 90% of the 100 children who had minor operations in our hospital. I found that

again, analgesics were not being routinely administered mainly because of the notion that it was 'minor surgery' and the misconception that 'small children don't feel pain'. The use of regional techniques particularly caudal anaesthesia, which is the gold standard in paediatric pain management, and rational use of available analgesics were suggested as means of improving pain control. I explored methods of improving post-operative pain relief in children, particularly the use of caudal analgesia with various pharmacological agents. Local anaesthetic agents when injected into the epidural space (caudal anaesthesia) provide analgesia for about 1-2 hours. The addition of other agents called adjuvants can prolong the analgesia provided by local anaesthetics. I studied midazolam, a sedative agent and dexamethasone, a steroid, as adjuvants to bupivacaine and ropivacaine for caudal analgesia. I explored the analgesic benefits of caudal bupivacaine and midazolam in 86 children aged 1-6 years presenting for ambulatory groin surgeries. The mean time to first post-operative analgesic was  $477.67\text{min} + 53.8\text{mins}$  in the group that had midazolam compared to  $243.79 + 44.0\text{mins}$  in the group that had only bupivacaine. Children who had midazolam also required fewer analgesics postoperatively. However, the time to home readiness was slightly longer in the midazolam group (Adetoye, Faponle & Sowande, 2017). In a similar study, I also compared the effect of dexamethasone as an adjuvant to caudal ropivacaine in 68 children who presented for day case unilateral herniotomies. Though the Objective Pain Score in the first three hours after surgery was less than 4 in both groups, post operative pain scores were lower in the dexamethasone group. The time to first oral analgesic was  $413.1 + 34.5\text{minutes}$  versus  $272 + 23.7\text{min}$ ,  $p < 0.001$ , in the ropivacaine only group. Thus the addition of adjuvants can actually provide pain relief for 7-8 hours after surgery in children, which is a major development in their care. (Faponle and Adeyeye, 2018).

Pain relief in labour is another aspect of pain management that has engaged my attention. In Nigeria, it is generally assumed that labour is well tolerated and pain relief is not an important part of intra-partum care. I conducted a study on 486 multiparous women

attending the antenatal booking clinic in three big hospitals in south-western Nigeria (**Faponle** and Kuti, 2004). The aim was to determine Yoruba woman's perspective of labour pain, to ascertain what methods of pain relief were used in labour and the effectiveness of these methods. I found that over 70% of the women rated labour pain as moderately to severely painful. Thirty-two percent would not want any pain relief while in labour but another 35% would want pain eliminated. Labour pain was the greatest worry of 14% while in labour whereas 40% claimed that they had no worries. Ninety-five per cent reported they had no analgesia during previous deliveries. None of the methods available for treating women in labour was used in this population. All those who reported to have had analgesics were given only intramuscular injections, which differs from the standard practice in developed countries of giving epidurals. It was obvious that the Yoruba women interviewed appeared to cope quite well with labour pain and do not require complete elimination of the pain. This finding may reflect the perception of labour pain in Yoruba culture where childbirth pain is often regarded as divine and a source of joy. Previous studies have confirmed the strong influence of ethno-cultural diversities on pain perception but this study was the first we know of on labour pain in a particular ethnic group in Nigeria. Some of the statements made by the women during interview reflected the strong influence of the Yoruba culture on the women's perception of labour pain. Such statements include 'labour is painful but God makes us forget it', 'only lazy people see labour as painful'. We suggested that women's attitude can be changed with proper education particularly during antenatal classes. I believe that women should be informed about the methods available for pain relief and the need to request analgesia during labour if necessary. Pain relief in labour offers advantages including making hospital deliveries more attractive, thereby reducing the incidence of unscheduled patients with their high morbidity and mortality.

We later conducted a similar study in the Wesley Guild Hospital, Ilesa Nigeria. We interviewed 281 women were interviewed within two hours of delivery seeking information about their perception of

labour pain. Seventy percent of the women described labour pain as being severe and 86% stated that they would want the pain relieved during labour. Perception of labour pain was not **influenced by age, parity or educational level. We suggested that** management of pain in labour should be an integral part of intrapartum care as in developed countries. (Kuti and **Faponle**, 2006). After these initial efforts, we established an epidural service (injection of analgesic in the spine while in labour) to relieve labour pain and make women in labour as comfortable as possible. I have also studied reasonable use of available analgesics in women in labour especially in the face of perennial shortage of strong opioids in our country (Kuti, **Faponle**, Adeyemi and Owolabi 2008; Olateju, Adenekan, Olufolabi, et al 2016).

### **Providing anaesthesia for high-risk surgical cases - Conjoint twins separation, Renal transplantation, neurosurgical operations and others**

I have been privileged to pioneer the development of anaesthetic services in Ile-Ife, reversing years of the hospital being a 'general hospital' contrary to its real status as a tertiary hospital. This is because anaesthesia provision makes surgery possible for both the patient and the surgeon. I have been involved in the development of the Department to provide anaesthesia services comparable to that of developed countries. This change ensured that we can manage complex surgical cases and provide critical care services as expected of a tertiary institution. The hospital now regularly performs neurosurgical operations, renal transplants, separation of conjoint twins, cardiothoracic surgeries, complex airway procedures, laparoscopic operations, Total knee and hip replacements and many more.

I have been involved in the management of high profile cases that have given the university and its teaching Hospital a **positive** image. My role in such surgical exploits has certainly been more than providing 'sleep' for the patient. Working with colleagues, we have made surgery possible in two consecutive cases of conjoint twins separation in Obafemi Awolowo University

Teaching Hospitals Complex (OAUTHC) Ile-Ife and I have used that experience to provide the same thing for another set of conjoined twins at the Federal Medical Centre, Yola, Adamawa state, North Eastern Nigeria. The operation in Yola earned us an award by the 'Future Assured' Aisha Buhari Foundation in recognition of our contribution to the success of the operation in a difficult part of the country. In preparing for these operations, we reviewed publications from developed countries. There we noted that apart from the necessary surgical skills, appropriate anaesthetic equipment and expertise in paediatric anaesthesia including the placement of central and arterial lines were important in developing an anaesthetic plan for such patients. Of course, there is also the need for detailed pre-operative review to know the possible complications that may arise from such cases, because no two cases are similar. None of the three cases was the same and the challenges we faced were not the same. The overall management of each of the patients was challenging but paying attention to details, painstaking pre-operative, intra-operative and post-operative management facilitated a good outcome in each case.

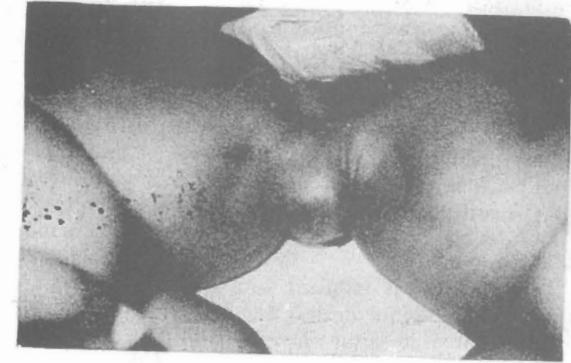
**Figure 1**

*Pygopagus twins- Preoperative appearance*



**Figure 4**

*Omphalopagus twins- Preoperative appearance*



The Yola Twins before Separation





The Yola twins after separation



### Renal transplantation

Kidney transplantation is globally adjudged the best alternative treatment for end stage renal disease (ESRD) in preference to life-long dialysis. Transplantation was unavailable in Nigeria until our hospital and a private hospital embarked on a kidney transplant programme despite our depressed economy, and inadequate facilities. Kidney transplantation requires much technical and material resources. However with proper training, commitment and adequate funding, transplantation is feasible, safe and cheaper than are other treatments in the long term for the management of patients with ESRD in a developing country like ours. Again, for such a highly technical procedure to be performed, the services of a competent anaesthetist are needed. The anaesthetist must review the patient and donor pre-operatively to determine fitness for anaesthesia, provide intra-operative care with the right equipment and skills and participate in post-operative care in the intensive care room or high dependency unit. I thank Emeritus Professor Wale Akinsola, the father of kidney transplantation in Nigeria, for encouraging me even as a young anaesthetist to join our hospital's Renal Transplant team. His 'can do' spirit infected me and helped in no small measure to encourage me to make a success of the operation even as I was then a young consultant anaesthetist with no experience in such cases. I remember his words of

encouragement- 'Without the Anaesthetist at the head of the table, this surgery cannot go on. I am sure you can do it!'

My colleagues and I reported the first cases of kidney transplantation performed in any university hospital in Nigeria in 2005 (Faponle, 2005; Badmus, Arogundade, Sanusi, Akinsola et al 2005).

### Manpower development in Anaesthesia and sub-specialisation

After Fellowship, physician anaesthetists can achieve post-fellowship certification in sub-specialties of Anaesthesia including neuro-anaesthesia, pain-management, obstetric anaesthesia, critical care medicine and others, after additional clinical training of six months to one year in the subspecialty. I have been trained in several areas since my employment in the university, as the hospital saw the need to develop surgical sub specialties. Before that, I benefitted from the 'one year abroad' scholarship program of the National Postgraduate Medical College of Nigeria after being named the best Part I candidate in the Faculty of Anaesthesia examinations in 1996. I spent one year at the Regional Spinal Cord Injuries Unit, Southport, Merseyside, England (affiliated with the Royal Liverpool Hospital, Liverpool, United Kingdom), where I obtained further clinical and research training in the subspecialty areas of neuro-anaesthesia and pain medicine. Much later, in 2009, when the hospital wanted to start its open heart surgery programme, I was asked to receive post fellowship training in anaesthesia and perfusion for open heart surgery at the University of Alexandria, Alexandria, Egypt. In 2012, recognising the need for palliative care services in our hospital, I attended the world acclaimed Institute of Hospice and Palliative Care, Uganda in 2012 where I received a Certificate in Palliative care. I was the only academic staff in Anaesthesia on ground for eight years who provided service, teaching and training in all specialties until we produced our first Fellow in 2007; he is now employed as academic staff. I was able to collaborate with specialists in managing many complex clinical cases across specialties. I have had the privilege of developing anaesthesia protocols and

managing cases in all surgical subspecialties, intensive care medicine, provision and training in cardiopulmonary resuscitation, pain and palliative care. Along with service provision, I have engaged in capacity building to address the acute shortage of physician anaesthetists in Ife and elsewhere in Nigeria.

I am privileged to be on the Faculty Board of Anaesthesia of the West African College of Surgeons and the National Postgraduate Medical College of Nigeria. I have served as Examiner in both Colleges for over 15 years. These positions have enabled me to join hands with colleagues to build capacity in anaesthesia in our country.

In the course of my career, I have supervised 17 dissertations of resident doctors for the Fellowship examinations in Anaesthesia, and co-supervised two dissertations in nephrology and two in obstetrics. These residents have become qualified fellows holding consultant positions throughout the country. I have trained all but one of the eight consultants in my department. I have achieved my position and accomplishments only by the grace of God and my determination to stay in Nigeria to make a difference, when I had the opportunity to leave the country, especially with the attraction of greener pastures.

### **Research**

Our work as academicians hangs on the tripod of research, teaching and community service. Research accomplishments especially, increase the visibility of the university. I have published over 50 papers in national and international journals and contributed chapters to two textbooks in Anaesthesia. I am on the Editorial Board of the Nigerian Postgraduate Medical Journal and I review manuscripts for several peer reviewed journals. I am a member of the Acute Pain Special Interest group of the International Association for the study of Pain (IASP) and I work on the board of the Developing Countries Working Group of the International Association for the Study of Pain with the task of

improving research and mentoring young pain researchers in developing countries.

Recently I was elected into the governing council of the West African College of Surgeons where I again contribute to the training of specialist doctors in the country.

I have also served two – terms as Vice- Dean of the Faculty of Clinical Sciences and from 2012 to 2014, as the Deputy Provost of the College of Health Sciences.

### **Conclusion**

Mr Vice Chancellor Sir and distinguished audience, in this lecture, I have described what Anaesthetic practice entails. I have tried to show that anaesthetists as peri-operative physicians do more than put patients to sleep. I have described also the process of providing anaesthesia and I have asserted that, without the contributions of competent Anaesthetists, safe surgery cannot go on. I have also described the differences between going to sleep and anaesthesia. Finally, I have cited some of my research contributions to this field, particularly in the development of anaesthesia manpower, airway management and pain management.

### **Recommendations**

1. Multidisciplinary care of patients should be sustained. Medical care is team work and no specialty can claim superiority over the other. Other specialties should appreciate that anaesthetists are important in the care of patients and their role is more than providing sleep for surgery.
2. The shortage of anaesthetists in Nigerian teaching hospitals should be promptly addressed in our university hospitals by training more physicians and encouraging them to practice in the sub-region. Although the number of physician anaesthetists in Nigeria has improved, we have not achieved the World Health Organization recommended number. Improvement in numbers of anaesthetists will also



improve our sub-specialisation agenda. More training positions should be created in our universities and hospitals for anaesthetists to be able to cater for the needs of the ever increasing population who need medical care. There is also the need to re-enact more innovative ways in training to ensure that we train and retain those trained to work in the country.

3. Opioid unavailability is a recurring problem. For anaesthetists, it is important that this useful tool of our trade to remove the pain of surgery, trauma, childbirth, and critical care is within the reach of all our patients at all times. The Federal Ministry of Health and the advocacy groups should expedite resolution of the bottlenecks to the regular provision of opioids in the country.
4. The government should make health insurance available to everyone for surgical services in our hospitals. Such insurance would ensure that the populace can access surgical services early, which could reduce the morbidity and mortality associated with surgery. In developing countries, shortage of funds can be a cause of late presentation to hospitals and this shortage can be addressed by national health insurance coverage.
5. Anaesthetic services should be upgraded and made available in our secondary health care facilities. This will make it possible for our teeming population to access surgical services outside the tertiary hospitals. In Osun state especially, anaesthetic services are not provided in any state government owned general hospital especially in those outside the state capital.

Mr Vice-Chancellor Sir, I am aware that acknowledgement is not allowed in the inaugural lectures of this university. However, I certainly could not have achieved all that I did alone. I have enjoyed the love and support of many people in the course of my career. These have ranged from family members, especially my late parents Elder Victor Babatunde Thomas and Mrs Adetumbi Ogunmoyela, to my siblings- (two of them are Professors - Late

Professor Kayode Ogunmoyela of FUTA and Prof Olugbenga Ogunmoyela of Bells University), my in-laws and to professional colleagues in Nigeria and abroad, who nurtured me and spurred me on to academic excellence. I thank them all from the bottom of my heart.

I thank all the staff of the OAUTH and especially those of the Department of Anaesthesia and Intensive Care - Consultants, Residents, Nurse anaesthetists, Peri-operative nurses, Intensive Care Unit nurses and Anaesthetic assistants for their support over the years.

I thank all the members of the Departments of Surgery, Obstetrics and Gynaecology, Internal Medicine, Dental surgeons and indeed all Departments, most of whom we have worked together over the years. I am especially grateful to Professor Olu Arigbabu, Professor Olusanya Adejuyigbe, Professor David Akinola and the late Prof Adebayo Adeyemo who encouraged me to return to Ife after obtaining my fellowship and ensured that I remained in Nigeria despite my unwillingness to do so at that time.

I acknowledge with gratitude, all my friends both within and outside Nigeria especially the planning committee who supported me in all ways to prepare for this lecture.

I appreciate the pastorate and members of the New Covenant Church, Nigeria, particularly members of the Samonda Conference, the Chaplain and members of the All Souls Chapel, The Full Gospel Business Men's Fellowship, Ile-Ife chapters and several other Christian organisations to which I belong.

Finally, my nuclear family, my darling husband of many years and still counting, Adedeji- quiet but strong and accommodating – thank you for your love, support and encouragement all through the years.

God has blessed us with three wonderful children, Dr. Adegboyega (a Nephrologist), Adebola and Adeola (of blessed memory), two

grandchildren and a beautiful and resourceful daughter-in-law-Dr. Oluwatomi, who continually give us joy and are the reason for my continued aspiration for excellence. I thank you all for inspiring me to be the best even in the face of tragedy.

Mr Vice-Chancellor Sir, distinguished ladies and gentlemen, if there is anyone who has sniffed some of the gas of my trade in the course of this lecture, I believe I have also succeeded in waking you up.

Thank you very much for coming and listening.

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