52nd Inaugural Lecture

"Diagnostic Radiology - the Centrepiece and Hub of Medicine and Dentistry" Professor G. O. G. Awosanya

23rd February, 2016

PROTOCOL

The Visitor to the University The Chancellor Pro Chancellor The Vice Chancellor The Deputy Vice Chancellor (Admin.) The Registrar The University Librarian The Bursar and other Principal Officers The Deputy Provost LASUCOM The Dean, School of Postgraduate Studies Dean, Faculty of Basic Medical Sciences Dean, Faculty of Clinical Sciences Dean, Faculty of Dentistry Other Deans of the Lagos State University Members of the Senate of Lagos State University All Academic and Non-Academic Staff of the University Staff of Lagos University Teaching Hospital Colleagues Students My Lords, Temporal and Spiritual Members of the Awosanya, Shonukan, Ogunbekun, Adebowale and Oba Nle Aro Families Distinguished Guests, Ladies and Gentlemen Gentlemen of the Press (Electronic and Prints Media)

INTRODUCTION

Mr. Vice-Chancellor Sir, I welcome all and sundry to this Inaugural Lecture, the first under your tenure, the first by a Professor of Radiology in this University and the 52ndin the history of Lagos State University.

From the bottom of my heart, I thank the Vice Chancellor of Lagos State University, Prof. Olanrewaju Adigun Fagbohun for giving me this unique opportunity to deliver my Inaugural Lecture.

The title of the Lecture – "*Diagnostic Radiology* - *the Centrepiece and Hub of Medicine and Dentistry*" is an insight and exposition of the Role of Imaging in the Practice of Medicine and Dentistry.

Without Imaging, the future of Medicine and Dentistry would have been **bleak** and **blind**. St Lukes Gospel Chapter 6 Verses 39-40 states "*Can the blind guide the blind*" shall they not both fall into the pit? The disciple is not above his master but when is perfected shall be as his Master if not even better". So you may then imagine what the discovery of X-rays has brought and its benefit to mankind.

DIAGNOSTIC RADIOLOGY -

THE CENTREPIECE AND HUB OF MEDICINE AND DENTISTRY

When God created the world He said, "Let there be light" and there was light" (Gen. 1³). The light of Medicine and Dentistry is Radiology. The choice of Diagnostic Radiology as a specialty or discipline for me was a unique one borne out of the conviction that "seeing is believing".

The journey of a hundred years usually starts one day and I am grateful to the Almighty God for direction. As a House Officer in 1977 at the Lagos General Hospital under Dr. Ghosh, a maverick consummateConsultant Physician Endocrinologist, we routinely had X-ray discussion sessions between 12noon and 1p.m. daily with Dr. Innis Palmer (now late), then Chief Consultant Radiologist.Often times Dr. Palmer would tell us what we had missed out of our clinical findings without him seeing the patient. Dr. Innis Palmer, a Radiologist, discussed the pathophysiology of disease entities from basic principles. In short, I saw him as a clinical magician who made diagnosis from images on X-ray films. I also discovered later that he performed special investigations wearing goggles, utilizing X-ray machines in the dark - Dark Adaptation Fluoroscopy.I immediately dumped and jettisoned the ambition of following the footsteps of my *Oga*, Dr. Ghosh, of becoming a Consultant Physician.

My first contact with X-rays was actually in 1963 during the interview for admission into Kings College. Everybody that came for the interview had chest X-ray done inside a vehicle – Mobile X-ray. My second experience was later in Ibadan in 1971 while living with my uncle, Pa B. O. Oguntimehin, MBE, OON (now late), at Imalefalafia, Oke Ado, Ibadan. Dr. Bayo Banjo's Clinic at Imalefalafia, Ibadan was always the saving grace whenever I took ill. The colossus of a man, Dr. Bayo Banjo was the first Nigerian Radiologist to work at the University College Hospital, Ibadan, in those days with the whitemen; I saw X-ray machines in his hospital at that time. My desire to be a Radiologist was also nurtured and supported by Dr. Sanya Sonuga, a quintessential Consultant Radiologist, Dr. Kola Adebanjo and Dr. Dare Demuren. Dr. Sanya Sonuga recommended me to the University of Bristol for admission into Radiology while (late) Prof. T. Kolawole and Dr.Demuren got me admitted into the Department of Radiology in Cardiff, Wales. I however settled for Nigeria for family reasons.

What are X-Rays?

On 8th of November 1895 W.C. Roentgen demonstrated the existence of '*a new kind of rays*' - **X-ray**, using a Crookes tube and by February 1896, applications of the new rays in Medicine were described in the British Medical Journal. The immediate outcome of Roentgen's work became one of the most famous scientific photographs ever published, that of the hand of his wife.

X-rays and projection radiography



X-Ray of the Hand. First Scientific Photograph(1895)

Roentgen's discovery of X-rays brought him instant fame but took him away from his laboratory and distracted him. He was ideally placed to discover Radioactivity but for the distraction his discovery of X-ray caused him. He won the 1st Nobel prize for Physics in 1901. Piere and Marie Currie, from Poland, practising in Paris, were later to discover Radioactivity in 1905.

X-rays are ionizing irradiations that are produced when fast moving electrons are decelerated by a stationary target anode with subsequent production of heat. It is the invisible, the unseen "master detective", which helps to complete the investigation of man with such clarity for medical judgment and is always the **"Appeal Court of Medicine"**.

X-rays and other forms of radiation have two main uses in Medicine:

- (i) to investigate the patient's illness or physical state **Diagnostic Radiology**
- (ii) to produce cell changes in certain body tissues –Radiotherapy



Who is a Radiologist?

A diagnostic Radiologist is a consummate physician, a medical graduate who has had at least four years postgraduate specialist training in the field. He is licensed in the usage of ionizing radiation to diagnose pathologies. More often than not, he uses his hands to perform special investigations culminating in diagnosis.

In giving honour to whom honour is due, I salute the courage, foresight and intellect of Late Dr. Bayo Banjo, Prof. Botsende Lagundoye, Late Prof. Umerah, Late Prof. T. M. Kolawole, Late Prof. Folusho Elebute-Ladapo, Prof. Daniya and Prof. Obisesan. They conceptualized the training of Radiologists in the West African Subregion and drew up a Curriculum "The making of a Tropical Radiologist is Multidisciplinary, Multidimensional and Holistic"

Who is a Radiographer?

A Radiographer is a skilled professional trained and licensed to dispense ionizing radiations and other forms of medical imaging modalities to assist in the diagnosis and treatment of diseases.

What is Radiology?

Radiology is an **art** that has to be acquired skillfully while its practice is scientific. Diagnostic Radiology is a scientific imaging that culminates in an ultimate revelation. It is a clinical entity that utilizes ionizing radiation to elucidate the layers of the human body. Radiology is also useful in Veterinary and Forensic services, in Aviation Industry, in Global Business and the Customs and Immigration. We will however restrict this Inaugural Lecture to its use in Medicine and Dentistry.

Diagnostic Radiology

In its widest worldwide usage, Diagnostic Radiology or Radiodiagnosis uses low kilovoltage ionizing radiations which makes it **friendly fire**while Radiotherapy entails the usage of **enemy fire** e.g. **gamma** and **beta**irradiation (emissions).

In Diagnostic Radiology, an image of a structure within the patient's body is produced on a film or a television monitor. X-rays consist of photons of electromagnetic radiation with higher energies than light photons which have sufficient energy to penetrate body tissues and allow us to image internal organs. The retina of the eye cannot detect X-rays and as such we cannot see the image of an organ just by shining an X-ray beam on it. X- rays which have passed through the body must be made to strike an imaging device which will produce a visible image e.g. a piece of film.



For completeness, other Imaging or Radiological modalities include:

- i. Ultrasonography
- ii. Mammography
- ii. Radionuclide Imaging
- iv. Angiography
- v. Computerized Tomography (CT) Scan
- vi. Magnetic Resonance Imaging
- vii. Positron Emission Tomography (PET)
- viii. Single-Photon Emission Computed Tomography (SPECT) Scan
- ix. Positron Emission Tomography Computerized Tomography (PET-CT)
- x. CT Angiography (CTA)
- xi. Magnetic Resonance Angiography

This Inaugural Lecture will focus on:

- 1. My research and sojourn in Academics
- 2. Contributions of my research to knowledge
- 3. Benefits to the Town i.e. the larger society

ANCIENT AND MODERN

"If you do not know the history of the past, you may not be able to know where you are going"

I was the pioneer Resident in Diagnostic Radiology at the Lagos University Teaching Hospital(LUTH), Department of Radio-diagnosis in 1982;indeed Iwas the only Resident doctor in the Department for four years. One thing that is clear is that I had the best Residency Training available in Radiology in Nigeria at that time. As at 1982, Nigeria was virtually at par with Europe, medicare wise and equipment wise. There were ten well-equipped suites in the LUTH X-ray Department which were functional for:

- Room 1: Mass Miniature Radiography
- Room 2: Double-Tabled General Electric equipment with one overcouch tube on rails – making it possible to do two cases of Intravenous Urograms alternately
- Room 3: Roentgen 501 Watson for general cases: extremities, abdomen, chest and ward cases
- Room 4: Static MX4 Equipment
- Room 5: Hadz Mobile X-ray machines, Phillips and a Dental equipment for cephalometry
- Room 6: Ultrasound Scan Equipment
- Room 7: Fluoroscopy Room Phillips Equipment
- Room 8: A Phillips Room with a control panel that operated three equipment namely:
 - (i) A Rapigmost Mammogram equipment installed in 1982
 - (ii) A Skull Unit and
 - (iii) A general duty MX4 X-ray machine for paediatric

cases

Room 9: A GEC equipment forMyelograms, Venograms, Lymphangiogram, Ducrocystogram

Room 10: Angiogram Room

We also had a Fluoroscopic machine in the modular theatre for peri-operative procedures. We had a roster schedule for all Radiological investigations in X-ray then.

I met seven Consultants Radiologists on ground - Prof. Elebute Ladapo,Dr. Mercy Ojemuyiwa,Dr. Akinhanmi,Dr. Irene Rewane, Dr. Odutola, Dr. (Later Prof.) Olarenwaju andDr. Manickam, an Indian.

There were also three 'Heavy Duty' Senior Registrars - Dr. Kola Adebanjo, Dr. Okikiolu and Dr. M.V.U. Azodo.

The ten of them were foreign-trained. The first nine were trained in the United Kingdom, while Dr. Azodo was trained in the United State of America. So I had a mixed grill training and also because God endowed me with good fingers, I learned fast. I got some tutelage from Dr. Palmer at the then Radio-diagnostic Clinic, 19 Breadfruit Street, Lagos, an outfit owned by late Chief S. L. Edu's wife, before commencing the Residency Programme.

During my training, I single-handedly performed the following investigations:

- i. Small Bowel Enema
- ii) Barium Enema (Colonography)
- iii) Barium Meal Studies
- iv) Per Cutaneous Transhepatic Cholangiography
- v) Myelograms
- vi) T-Tube Cholangiography
- vii) Bronchography

- viii) Hysterosalpingograms, HSG
- ix) Intravenous Cholangiograms
- x) Dacrocystograms
- xi) Venograms
- xii) Arthrograms In actual fact I did many Arthrograms for National Orthopaedic Hospital, Igbobi(NOHI),Lagos between 1987 and 1988 as there was no Radiologist at NOHI then
- xiii) Sialograms -Submandibular -Parotid
- xiv) Intravenous Urograms
- xv) Splenoportograms
- xvi) Carotid/Vertebral Angiograms -Arch/Aortogram
- xvii) Vesical/Pelvic Angiography
- xvii) Orbital Venograms
- xviii) Vasograms after Catheterization by the Urologists
- xix) Lymphangiograms
- xx) Vaginographyfor Intersex
- xxi) Cystourethrography Retrograde
- -Micturating xxii) Retrograde Pyelogram
- xxiii) Sinograms
- xxiv) Fistulograms
- xxv) Air Encephalograms
- xxvi) Colostomy Enemas

The most cumbersome of the above procedures was the Air Encephalogram. Prior to the advent of Computerized Axial Tomography (CAT), Scan and Magnetic Resonance Imaging (MRI), we used mostly Air Encephalography and Cerebral/Vertebral Angiographies to investigate Brain/Cerebral Pathologies. However, Splenoportography, Orbital Venogaphy, Air Encephalographs, Lymphangiography, Knee Arthrograms and small Bowel Enemas have become obsolete.

As knowledge is light, I also sought knowledge outside LUTH at the Lagos General Hospitalwhere I was instructed by Dr. Bayo Taiwo, Dr. Demola Osinuga, Dr. Taiwo Odusanya and Dr. Dare Demuren.

ADVANCES IN RADIODIAGNOSIS

Genius 3D Mammography Examination

This is a more accurate screening examination available in the fight against Breast Cancer.

Why choose a Genius 3D Mammogram?

It detects 41% more invasive breast cancer and reduces recalls by up to 40%. It is already available on over 1800 systems in all 50 states of USA. For women, this could mean an earlier diagnosis and better prognosis. Many women are also spared the emotional, practical and economic toll of additional testing including biopsies, when there could be nothing wrong.

- One in every 8 women will develop breast cancer within her lifetime
- 8 out of 9 women diagnosed with breast cancer have no family history
- Breast cancer risk increases with age; 2 out of 3 invasive breast cancers are found in women over 55 years old

The Genius 3D is superior to conventional 2D mammograms.Since 2011 over 8million women in the US have had a Genius 3D exam. In 2014 alone, more than 200,000 women were diagnosed with an invasive form of breast cancer. That is why innovative screening technology that allows for better earlier breast cancer detection is critical.



2D Mammography Machine



3D Genius Mammography Machine

Forensic Radiology - Virtual Autopsy

Virtual Autopsy offers several advantages over the traditional invasive approach and hence may help connect Radiology with Forensic Medicine. This procedure is a noninvasive approach that neither harms the body nor tampers with forensic evidence.Virtual Autopsy creates permanent 3-D modes that can be easily assessed and the data only relayed via computer.Virtual Autopsy is a standard procedure in Forensic investigations and its usage may soon become global. Although it is capital intensive, the benefits outweigh the cost.

Dr. Micheal Thali, Professor and Chair of the Institute of Forensic Medicine, University of Zurich, Switzerland co-founded VIRTOPSY in 1999 which entails 3-D surface scanning for the exterior; CT, MR imaging, angiography and biopsy for the interior. The information produced by the individual modalities are then merged into a Robotic system called **Virtobot** which creates 3-D high resolution computer images to document and record an injury. The Virtobot performs a variety of tasks in conjunction with the CT scanner and allows for attenuated high resolution 3D surface documentation as well as CT guided post mortem tissue sampling.

In the case of a tooth bite mark, a 3-D morphological finger print of the mark on the body is created. That image can be compared to the dental marking of the suspect if available for comparison purposes i.e. matching.

How close are we in Nigeria?

There is an Imaging Unit in the Department of Forensic Pathology/Morbid Anatomy at LASUCOM/LASUTH which is the first of its kind and the only one in West Africa. We have a team of Forensic Experts in LASUCOM which comprises the Forensic

Pathologists, Forensic Radiologists and Dentists.Usually, Radiological examinations and Dental markings precede the ultimate autopsy.

It is of note here to make mention of our own Prof. John Oladapo Obafunwa, an erudite scholar, immediate past Vice Chancellor of Lagos State University and Chief Forensic Examiner in Nigeria for providing vintage leadership for this team.

We investigated the 156 victims of the ill-fated DANA Crash in 2012 which saved Nigeria from blotches and placed the country on the path of global excellence in Forensic Medicine.Our teamalso investigated the Agagu plane crash, where some victims survived and where I lost a good friend, Tunji Okusanya (MIC) in 2014;may their gentle souls continue to rest in perfect peace. The latest helicopter crash in the Lagos Lagoon in 2015 was also investigated by our team. We have also investigated many Coroner cases.

I seize this opportunity to thank Lagos State Government for her efforts in providing a conducive environment for the learning and practice of Medicine. The Governmentshould not rest on its oars but should continue to invest in the health of its populace. LASUCOM is money well spent by the Government. We crave for a situation where we will have an MRI or CT scanner in the mortuary such that we can do **Virtopsy** and hence reduce the invasion necessitated by the present **Autopsy** method.

Virtopsy

Post Mortem CT (PMCT) is done primarily to guide subsequent forensic dissection. PMCT angiography is used in providing more detailed information concerning the vascular structures in post operation and traumatic condition which would otherwise be extremely difficult and time-consuming using standard autopsy dissection.

15

The Court as a customer of the Forensic Pathologist has no real knowledge of the body's internal structures; 3D visualization is a good tool to document what really happens.Virtual autopsy speeds up the decision making process as imaging can be done so quickly; the process also allows for objective data archiving.Virtual autopsies can be utilized in cultures where conventional autopsy is not tolerated for religious reasons or rejected by family members because of invasion and supposed "incompleteness' of the body for burial – Virtual autopsy will allow going back to God in full as created. With virtual autopsies, Imaging is going to become the gold standard in the future of Forensic examinations.



A Client awaiting Virtual Autopsy

Interventional Radiology – Another Innovation

Interventional Radiology evolved as an outgrowth or extension of diagnostic catheter angiography. It is all about utilizing diagnostic imaging tools to troubleshoot or guide the real time treatment of diseases.Interventional Radiology has stimulated rapid treatment concepts in every organ system of the body such that imaging could be used in some patients for targeted procedures hence eliminating the need for major surgeries while some others could undergo procedures for previously unresolved problems. This dimension has pervaded all the fields of Medicine and has changed our perception of disease. For example, in the1980s at LUTH Radiodiagnosis Department, pelvic angiography was a routine in the management of patients with malignant trophoblastic diseases. This was done to demonstrate the internal iliac vessels. The collaterals usually will become more dilated and oftentimes neovascularization is documented.

The scope and impact of Interventional Radiology in Modern

Medicine is limitless.Interventional Radiology was sequel to the discovery, in 1953 by Sven-Ivar Seldinger, a Swedish Radiologist, of a novel technique that allowed for the percutaneous catheter replacement of a needle or trochar (Seldinger technique). Prior to this, large-bore needles were in use with major vascular complications. After this discovery, Aortography and selective Arteriography became less risky or almost risk free. New tools like Automatic Power Injectors, Rapid Film Changers, Image Intensifiers, Cineangiography (the photographic recording of fluoroscopic images of the blood vessels by motion picture technique) and Video Systems have been developed. Interventional Radiology could be used in

- a) Gastrointestinal Bleeding
- b) Percutaneous Transluminal Angioplasty
- c) Uterine Artery Embolization
- d) Stents/Grafts
- e) Transjugular Intrahepatic Portosystemic Shunt

f) Portosystemic Shunt

Personally, the underlisted procedures represent my effort in Diagnostic Radiology:

| Cerebral Angiography | - | 53 punctures: | | |
|--|-------|---------------------------|--|--|
| | | 28 direct and 25 indirect | | |
| Vertebral Angiography | - | 6 punctures | | |
| Dorsal Aortograms | - | 10 punctures | | |
| Pelvic Angiograms | - | 8 punctures | | |
| Celiac Axis/Superior Mesenteric Angiography- 6 punctures | | | | |
| Myelograms | - | 49 punctures | | |
| Venograms | - | 53 punctures | | |
| Arthrograms | - | 21 punctures | | |
| Dacrocystograms | - | 17 punctures | | |
| HSG | - | over 1600 patients | | |
| Barium Enemas | - | Paediatric 100 | | |
| | - | Adults 359 | | |
| Percutaneous TransHepatic Cholangiogram- | 25 pu | nctures | | |
| Sialograms | - | Parotid 41 punctures | | |
| - | Subm | andibular 10 punctures | | |
| Splenoportograms | - | 3 punctures | | |
| Bronchrography | - | 9 patients | | |
| T-Tube Cholangiogram | - 1 | 13 punctures | | |
| Air Encephalograms | - | 29 punctures | | |
| Orbital Venograms | - | 5 punctures | | |
| Lymphangiograms | - | 3 punctures | | |
| Breast Ductography | - | 21 punctures | | |
| Retrograde Urethrocystogram | - | over 1000 patients | | |

In actual fact, we pioneered Interventional Radiology in this environment considering the number of punctures I did in Vascular Interventional Radiology.

Presently, in the Department of Radiology at LASUTH/LASUCOM, we also do non-

Vascular interventional procedures such as:

- 1. Drainage of abscesses anywhere in the body
- 2. CT and Ultrasound-guided biopsies
- 3. Ultrasound-guided nephrostomies
- 4. Ultrasound-guided biliary drainage and Percutaneous Trans-Hepatic

Cholangiographies

Imaging in Dentistry

| (1) | Plain Radiography | -Peria | pical | | |
|------|---|--|-----------------------------|--|--|
| | (Intraoral) | Occlu | sal | | |
| | Bitewing X-ray | | | | |
| | Digital Radiography | | | | |
| | Extraoral | - O | ccipitomental view | | |
| | | Obliqu | ue laterals of the jaw | | |
| | | Town | e's view (Fronto-occipital) | | |
| | | Temp | oromandibularjoints, TMJ | | |
| | | C | pen and closed mouth views | | |
| (2) | Orthopantomography | - C | ephalometry | | |
| | | Panor | amic view | | |
| (3) | Ultrasonography | | | | |
| | a. Intraoral - Determination of root length in root canal therapy | | | | |
| | b. Extraoral - Salivary gla | b. Extraoral - Salivary glands, maxillofacial cystic lesions | | | |
| (4) | Computed Tomography (CT) Scan | | | | |
| (5) | Magnetic Resonance Image (MRI) Scan | | | | |
| (6) | MR Spectroscopy | | | | |
| (7) | Sialography | - | Submandibular | | |
| | | - | Parotid | | |
| (8) | 3D – Planar | - | Root Canal | | |
| (9) | Conventional Tomography | | TMJ | | |
| (10) | Positron Emission Tomography, PET | | | | |
| (11) | PET/CT | | | | |
| (12) | Magnetic Resonance Angiogram, MRA | | | | |
| (13) | CTAngiography, CTA | | | | |



Cephalometry – Study and Measurement of the Head



Panoramic View – Ear to Ear View of the Upper and Lower Jaws



3D Imaging



3D Imaging





4D FETAL PROFILE 4D Imaging

CONTRIBUTIONS TO KNOWLEDGE

I undertook research in collaboration with fellow academicians across board. My research focus is broad-based and includes; but not limited to:

- Diagnosis of Breast Diseases
- Congenital Abnormalities
- Cerebrovascular Accidents (Stroke)

Breast Imaging

Detection of breast cancer is the primary goal of breast imaging. Mammography is the technique of examination of the breast utilizing low energy radiation in the range 20 – 35KV. At this energy range, it is possible to obtain high resolution films on which the skin can be clearly distinguished from other soft tissue densities. Mammography has become effective as a screening tool for the early detection of breast cancer.

Breast Cancer is the most common cause of cancer death worldwide. The incidence keeps increasing in Nigeria. Even in the absence of disease, the breast is only theoretically normal. It is pertinent to say that Breast Imaging in West Africa commenced at the Department of Radiodiagnosis, LUTH, Idi-Araba, in 1985. It is a privilege for me to be a member of the novel team that pioneered this.

Through a prospective study, we examined the breasts of 115 consecutive Nigerian women aged 18 – 65 years who attended the Health Assessment Clinic of LAGOON Hospital Lagos between January 1992 and June 1994 (thirty months) utilizing X-ray Mammography.

Findings

Women aged 30-39 years (4th decade) were most commonly referred with breast lesions. Majority of the breasts screened were normal, 32% had Fibroadenoma, while 1% had micro-calcifications. The frequency of abnormal findings was 29%.

The decision on when to request for Mammography in Nigeria was influenced by the findings of that work.



X-ray Mammogram showing a round spiculated mass in a 52 year old female patient. Histology revealed an invasive ductal carcinoma



Sonography of the Breast

Hypoechoic mass lesion with angular speculated margins which is taller than wide.

These features are in keeping with a malignant breast lesion.

Awosanya GOG, Jeje EA, Bayagbona D, and Inem AA. Screening and Diagnostic Mammographic Findings of 115 Consecutive Nigerian Women. A two and half year study in a city private Hospital. Nig. Qt. J. Hosp. Med. Vol. 14 (2) April-June 2004.

Vice Chancellor Sir, we also studied the performance of ultrasound scan (USS) among patients presenting with signs and symptoms of breast malignancy in comparison to surgical pathological findings. Three hundred and ten (310) patients who presented to the surgical outpatients of the Lagos University Teaching Hospital with signs and symptoms of Breast Cancer between 2002 and 2003 were evaluated. The sonographic appearances were prospectively classified using the Breast Imaging, Reporting and Data System (BI-RADS) assessment categorization. Histological confirmation following surgical excision was correlated with ultrasound scan (USS).

Findings

The patients were aged between 17 and 75 years. The overall sensitivity of diagnostic ultrasound in the study was 83.9% (95% CI 79.8 – 88%). Sensitivity and specificity generally declined as breast fattiness increased.

This study analyzed the performance of ultrasound and showed that the resultant specificity was high. However, USS may have to be used in conjunction with needle biopsy to achieve increased sensitivity and avoid unnecessary benign surgical biopsies.

A.A.O. Adeyomoye, **G.O.G. Awosanya** and A. Osibogun. Performance Measures of Diagnostic Ultrasound of the Breast in Lagos University Teaching Hospital (LUTH) Nigeria.Nig. Med. Pract. 2006: (49); 28-33.

In the 1990s, evaluating Breast Pathology with ultrasound in Nigeria and the West Africa sub-region was a major challenge as there was no standard for reporting. Radiologists were reporting breast lesions as to whether they were malignant or benign using different approaches. Breast ultrasound was not popular as at then, and the clinicians usually referred young females (as young as 18 years) for mammography since that was what they were familiar with. A large percentage of breast cancer patients in this part of the world were less than 35 years. Breast density in this group of people makes mammography challenging to report.

The challenges mentioned above spurred us in 2004 to carry out a research work in Lagos University Teaching Hospital on women with breast symptoms (e.g. lumps, pain, itch and so on) using the American College of Radiology Reporting Standard (ACR-BIRADS).

Findings

We observed that 69% were normal and 31% had breast pathologies out of the one hundred women observed. Breast cancer was diagnosed by Ultrasound scan (USS) insixteen out of the thirty-onewomen with breast pathology; twelveof these were confirmed using histopathology, three were false positive. We found that ultrasound had high accuracy, sensitivity and specificity in the detection of breast lesions, especially breast cancer, in women.

This turned out to be the first study carried out using BIRADS standard in Nigeria and the first in the West Africa sub-region. Since then, much confidence has been attributed to breast ultrasound using ACR-BIRADS standard in this environment. Also, clinicians now send young patients for ultrasound as the first line imaging modality in women less than 40years. The findings were published in 2012.

Irurhe NK, Adekola OO, **Awosanya GOG**, Adeyomoye AO, Olowoyoye AO, Awolola NA, Olajide TO. The Accuracy of Ultrasonography in the Diagnosis of Breast Pathology in Symptomatic Women. Nig. Q. J. Hosp. Med. 2012; 22 (4): 236-239.

25

Congenital Abnormalities

Rasmussen Encephalitis

In 2011, we reported Nigeria's first case of Rasmussen Encephalitis in a 7- year old boy of the Yoruba ethnic group. The boy presented with one week history of recurrent, focal tonic-clonic seizures which he had once or twice daily, on alternate days. He had no change in his facial appearance but had a hemiplegic gait as well as other features that raised our suspicion.



7-year old boy with Rasmussen Encephalitis

Note the tilting of the head towards one side



Same 7-year old boy with Rasmussen Encephalitisdisplaying hemiplegic gait



AXIAL BRAIN CT

Dilated Cerebral Sulci on the left



Dilated left Lateral Ventricle and Prominent Left Sulci



Axial CT Showing Hemiatrophy of the Left Temporal Lobe



Axial FSE T2 MRI Scan of the Brain showing Dilated Left Cerebral Sulci and Dilated Left Lateral Ventricle



Axial FSE T2 MRI Scan of the Brain showing Left Hemiatrophy



Axial T1 Flair MRI Scan of the Brain showing prominent Sulci dilated Left Lateral Venticle

Brain Magnetic Resonance Imaging (MRI) and CT scan as well as Electroencephalogram (EEG) were of immense benefit in the diagnosis. Magnetic Resonance Spectroscopy (MRS) can identify and quantify neuronal damage and loss in the affected cerebral hemisphere.



Computerized Tomography (CT) Scan Equipment



Electroencephelogram (EEG) Equipment

Rasmussen Encephalitis was first reported in 1959 by Theodore Rasmussen, a Neurosurgeon. The disease consists of severe epileptic seizures associated with slow progressive neurologic deterioration and progressive lateralized brain dysfunction. It is a chronic encephalitis that is extremely rare. Treatment usually is hemispherectomy as it usually does not respond to antiepileptics.

After the paper was published, we received a letter from the America Rasmussen Society inviting us to a Rasmussen Conference. This was sequel to the fact that our report was the first in Nigeria. Dr. Michael Akinkunmi, a Consultant Radiologist represented our team at the Wohlberg Conference of the Rasmussen Encephalitis Children's Project, Stein Eriksen Lodge, Deer Valley, Salt Lake City, Utah, USA, (6-9 October, 2010). He presented the paper"The Challenges of Managing Rasmussen Encephalitis in Nigeria". I was at the same time attending the World Congress of Neuroradiologists Conference in Bologna, Italy.

The RE Children's Project offered to treat the patient free of charge but unfortunately, we could not take advantage of this.We were advised to set up a Rasmussen Group in Nigeria to identify more cases and set up a surveillance system to update the records which we had since done.



Participants at The Wohlberg Conference of the Rasmussen Encephalitis Children's Project, Stein Eriksen Lodge, Deer Valley, Salt Lake City, Utah, USA (6-9 October 2010).



Mr Wohlberg (President of RE Children's Project), Dr Akinkunmi (participant from Nigeria) and Dr Chris (President of Hemispherectomy Foundation)

M. Akinkunmi, M. Salisu, **G. Awosanya**. Rasmussen Encephalitis in a Nigerian Child: A Case Report. The Internet Journal of Radiology 2009, Volume 12, No.2.

Imaging of Prune Belly Syndrome in Nigeria

Prune Belly Syndrome (PBS) is a rare congenital abnormality with only about 400 cases reported in literature. The observed associated congenital anomalies are bilateral talipes equinovarus deformity, pectus carinatum, exomphalus, patent urachus, malrotation of the kidney, hypoplastic testes and rudimentary nails.

We stimulated interest in imaging this rare abnormality with a view to educating medical practitioners who are more likely to see these patients who have an improved prognosis of survival and of fertility due to sperm retrieval and intracytoplasmic sperm injection technique.

Imaging modalities employed include:

- 1. Plain Radiography
- 2. Ultrasound

- 3. Micturating Cystourethrogram
- 4. Intravenous Urogram



Prune Belly Syndrome. Photograph of the lower thorax and abdomen showing pectus carinatum, wrinkling and laxity of the skin of the anterior abdominal wall with distention of the abdomen



Prune Belly Syndrome. Control Radiograph showing abdominal distension with airfilled loops of bowel, more on the right than on the left



Prune Belly Syndrome. Intravenous urogram at 8 hours showing clubbed calyces (block arrows), dilated renal pelves (arrowhead) and dilated ureter (line arrows) bilaterally



Prune Belly Syndrome. Micturating Cystourethrogram showing grade 4 vesico-ureteric reflux. Bladder (bold arrow), ureters (line arrows), calyces (arrowhead)

Imaging of Prune Belly Syndrome in Nigeria



Prune Belly Syndrome. Cystourethrogram (A) showing distended bladder (arrow), refluxed contrast outlining the dilated pelvicalyceal system (P) and dilated ureters (U). Micturating Cystourethrogram (B) showing near complete evacuation of the bladder (curve arrow).

Awosanya GOG, Akinkunmi MAN, Eze KC, Bode C, Odelola AO, Adeyomoye AA, and Adebayo SB.Imaging of Prune Belly Syndrome in Nigeria. Journal of Clinical Sciences, Volume 4, Number 2, July – December 2004, Pages 11-17.

Albinism

Albinism is a heterogeneous group of inherited non-progressive disorder of melanin metabolism. There are two types:

- 1) Ocular Albinism in which pigment is absent only in the eyes
- 2) Oculocutaneous Albinism (OCA) in which the eye, skin and hair lack pigment

The tropical environment without the protective effect of melanin predisposes the African OCA individual to skin cancers. In the eyes, fovea maturity is impaired leading to poor vision.

In a prospective study, the eyes of 57 consenting Nigerian OCA patients referred from Dermatology Clinic to Radiology for ocular scan were investigated with B-mode Ultrasonogram.The results were compared with matched controls and analyzed by a simple descriptive method.

Findings

The ages of the study populationranged from 15-62 years with male to female ratio of 1:2. We observed that 98% of the OCA patients and 91.2% of the controls had normal ocular scans. Vitreous echoes were found in 7.0% of all participants and one (1.8%) of the control participants had cataract. Ultrasound scan did not reveal any ocular structural abnormalities peculiar to OCA.

There is an intriguing absence of cataract in OCA that requires further investigation.

Ajose FO, **Awosanya GOG**, Adekoya BJ, Jinadu FO, Cole OM, Elebute OH, Ajayi OI, Awoyemi ZA and Akinola RA. Visual Defect in Oculocutaneous Albinism is not associated with Gross Structural Anomaly. J. Clin Exp Dermatol Res 2014, 5:5.

Giant Lipoma

We reported a case of a giant lipoma in the right thigh of a 52-year old woman of the Yoruba ethnic group in Nigeria. The patient could not walk long distances due to the disproportionate weight of the limb with the mass. The lipoma measured 58cm x 37cm x 24.5cm in dimension and weighed 17.5kg.She had ultrasound, MRI and CT scan as well as other routine investigations done. These were followed by a wide excision surgery. Histology confirmed the diagnosis of Fibrolipoma.

Lipomas are benign mesenchymal neoplasms composed of mature fat. They can attain enormous sizes if neglected. This giant lipoma is to the best of our knowledge, the largest in Medical Literature.
M.Akinkunmi, B. Balogun, **G. Awosanya**, I. Fadeyibi, A Benebo, S. Soyemi and J. Obafunwa.Giant Fibrolipoma of the Thigh in a Nigerian Woman: A Case Report. The Internet Journal of Radiology, 2009 Volume 12, No.2.



Ultra Sound Scanogram showing Calcifications



Ultra Sound Scanogram showing Areas of Necrosis within the Tumour



Giant Lipoma of the Back in the Right Thigh of the Woman



Photograph of Patient as seen from the Front Giant Lipoma in the Right Thigh



X-ray of the Pelvis showing the lowing limb with a huge drooping pear shaped soft tissue mass with Calcifications



Giant Lipoma of the Right Thigh Coronal SE T1 MR Image showing mass with similar signal intensity with Subcutaneous Fat



Post Operation



Stroke

Stroke is cerebro-vascular accident or insult.It is a catastrophe, a sordid event as well as a calamity. There are three different types namely:

- 1. Vaso-occlusive Stroke
- 2. Haemorrhagic Stroke
- 3. Subarachnoid Haemorrhage

Current research has shown that people at risk of Cerebrovascular Accident (Stroke) or Myocardial Infarction (heart attack) can reduce their risk by adopting the Mediterranean diet (rich in tomatoes) rather than taking Statins. Eating more healthily, being more physically active and stopping smoking can be just as effective as the cholesterol-lowering drugs.

We carried out an exploratory study of plasma homocysteine and its relationship to short-term outcome in acute ischaemic stroke in Nigerians.

Hyperhomocysteinemia (high level of homocysteine in the blood) is a potentially modifiable risk factor for stroke and may have a negative impact on the course of ischaemic stroke. Our study determined the prevalence and short term impact of hyperhomocysteinemia in Nigerians with acute ischaemic stroke.

We recruited all consecutive first-time acute ischaemic stroke patients presenting within 48 hours of onset of focal neurological deficit and older than 15 years. Brain computerized tomography (CT) scans were conducted to exclude hemorrhagic stroke and other intracranial structural causes of focal neurological deficits.

Findings

Sixty-nine patients with acute ischaemic stroke were compared with eighty-six agematched controls. The mean duration of stroke prior to hospitalization was 43.5 ± 38.8 hours and mean admission National Institutes of Health Stroke Scale (NIHSS) Score was 10.1 ± 7.7 .Total fasting homocysteine (Hcy) in stroke patients was similar to that in the control subjects (p = 0.88). NIHSS score on admission was a significant determinant of 4 week outcome measured by GOS score (p<00001).

This study found that homocysteine levels are not significantly elevated in Nigerians with acute ischaemic stroke and admission Hcy level is not a determinant of short term (4 weeks) stroke outcome.

Njideka U. Okubadejo, Olajumoke O. Oladipo, Adekunle A. Adeyomoye, **Gbolahan O. Awosanya** and Mustapha A. Danesi. Exploratory study of plasma total homocysteine and its relationship to short-term outcome in acute ishaemic stroke in Nigerians. BMC Neurology 8:26; 2008.



Prof. GOG Awosanya and Prof. Kollias of Zurich, Switzerland

Deep Vein Thrombosis (DVT)

We performed bilateral lower extremity venous duplex ultrasonographic examinations on a total of 70 patients: 44 males and 26 females; aged 15-85 years with a clinical diagnosis of deep vein thrombosis (DVT) between September 2005 and September 2007 in the Radiodiagnosis Department of the Lagos University Teaching Hospital.

Deep Vein thrombosis occurs when a blood clot, also called thrombus, forms in one or more of the deep veins in the body, usually in the legs. It may cause pain or swelling in the leg, but may also occur without any symptoms.

The common femoral vein, superficial femoral vein, proximal deep femoral vein, proximal greater saphenous vein, popliteal vein and posterior tibial veins were the deep veins evaluated in this study using compression sonography in the transverse plane. Grey scale colour and pulsed Doppler imaging of the venous segments were observed.

Findings

The sonographic abnormalities observed included frozen valves, venous reflux, venous dilatation with echogenic thrombus, absence of Doppler signals and narrowed thick walled veins.

It was observed that 30(42.3%) patients had acute DVT, 11(15.7%) had chronic venous disease (CVD) while 10(14.3%) had incompetence of the superficial venous system.

The take home here is that Duplex Ultrasonography should be performed on all patients with a clinical diagnosis of DVT in order to rule out other differential diagnosis.

OA Olowoyeye, **GOG Awosanya**, KO Soyebi. Duplex Ultrasonographic Findings in Patients with DVT. The Nigerian, Postgraduate Medical Journal, Vol.17 No.2, 128-132, June 2010. Duplex Ultrasonographic Findings in Patients with Suspected DVT: O. A. Olowoyeye et al

| frequency | percent 42.9% | |
|-----------|---|--|
| 30 | | |
| 1 | 1.4% | |
| 4 | 5.8% | |
| 2 | 2.9% | |
| 2 | 2.9% | |
| 3 | 4.3% | |
| 10 | 14.5% | |
| 2 | 2.9% | |
| 1 | 1.4% 1.4% | |
| 6 | 8.7% | |
| 1 | 1.4% | |
| 3 | 4.3% | |
| 3 | 4.3% | |
| 70 | 100.0% | |
| | 30 1 4 2 3 10 2 1 1 6 1 3 3 70 | |

| Table v: Differential diagnosis | | |
|--|-----------|---------|
| Findings other than | Frequency | Percent |
| DVT and its sequence | 1 | 12.5% |
| Synovial/ Baker's cyst | 2 | 25.0% |
| Cellulitis | 2 | 25.0% |
| Lymphoedema | 2 | 12.5% |
| Budd Chiari syndrome Superficial thrombophlebitis | 1 | 12.5% |
| Haemangioma with | 1 | 12.5% |
| Aneurysmal dilatation | 8 | 100.0% |

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Figure 2. Grey scale image of the superficial femoral vein (SFV), pre and post compression. An incompressible SFV is seen posterior to the superficial femoral artery. It contains a free floating echogenic thrombus.

| Table iv: Summary of findings | | | Left only | TOTAL | |
|--|------------|------------|-------------------------------|-------------------|--|
| | Both legs | Right only | Derr only | 8 | |
| | | | | 8 | |
| Normal study | diagnoses) | | | | |
| Findings unrelated to DVT and its sequiae (One) and | | 5 | 8 | 30 | |
| Acute DVT | 2 | 5 | 7 | | |
| Acute DVT only | 3 | 2 | | | |
| Acute on chronic DVT (CVD) (Postthrombotic syndrome) | ~ | 2 | 3 | 1 1 | |
| Chronic venous disease (CVD) (rostine | 2 | 1 | 2 | | |
| Thick walled vein with narrow function | 1 | 1 | 1 | 3 | |
| Frozen valves/bidirectional now | 1 | 1 | | | |
| Proximal occlusion or compression | | 2 | 4 | 10 | |
| Superficial venous incompetence | 2 | 2 | 2 | | |
| Reflux into the Greater saphenous ven | 0 | 0 | 27 | 70 | |
| Reflux into the lesser saphenous vein | 11 | 16 | 27 | | |
| TOTAL | | | Martin Martin P. N. Statistic | CONTRACTOR STREET | |



Figure 3. Color flow and spectral Doppler tracing of the distal superficial femoral vein (SFV dist). Normal spontaneous, phasic, non pulsatile venous flow with adequate augmentation following distal compression is seen.



Figure 4. Color flow and spectral Doppler tracing of proximal superficial femoral vein (SFV prox). A continue (monophasic) flow pattern is seen.

The Nigerian Postgraduate Medical Journal, Vol. 17, No. 2, June, 2

130

Fractures: Baumann's Angle

Supracondylar fracture (just above the elbow) is the most common fracture of the elbow in children. Most are complete fractures, but a major problem in the post reduction management especially after application of plaster, is the radiographic assessment of rotational and varus-valgus alignment.

We studied and analysed the radiographs of the elbows in children receiving treatment for displaced supracondylar fractures of the humerus at the Fracture Clinic of the National Orthopaedic Hospital, Lagos, Nigeria.

There were 25 males (62.5%) and 15 females (37.5%) giving a male to female sex ratio of 5 to 3. The patients were aged 18 months to 15 years with a mean of 7.04 years.

Both elbows were investigated radiographically. Ninety percent of these fractures were due to falls from standing heights.Left elbow injury was more common than that of the right by a ratio of 1.11 to 1. Thirty-eight patients (95%) had extension type of fractures while two patients (5%) had flexion type with the majority having extension type IIA fractures.

In relation to the horizontal displacement of the distal fragments, 23 patients (57.5%) had a medial shift while 8 patients (20%) had a lateral shift. Nine patients (22.5%) had no shift. Thirty-nine patients had fractures as a result of falls from short distance heights. One patient had a road traffic accident and presented with communited fractures (the bone was broken into more than two fragments) communicating with the joint space. The mean Baumann angle in the uninjured arm was 71.78 \pm 3.77 degrees and ranged from 60-76 degrees.

There was a loose correlation between Baumann's angle in the normal arm and that at post reduction.

Baumann's angle is the angle between the long axis of the humerus (long bone of the arm) and the growth plate of the lateral condyle. Everyone has a 'carrying angle'. When the arm is held out at the sides with the palms facing forward, the hands should normally be about 5-15 degrees away from the body. Following treatment of a supracondylar fracture, the 'carrying angle' on the injured side should not be different from that of the other arm by more than 5 degrees.

The poor correlation noted between Baumann's angle in the normal arm and that at post-reduction further confirms the inaccuracy of reduction and potentiates the reliability of the Baumann's angle assessment.

Balogun BO, **Awosanya GOG**, Adebule GT, Balogun EO.Baumann's Angle: A Relevant Tool in the Radiological Assessment of Bone Alignment in Reduced Supracondylar Fracture of the Humerus in Children. Int. J. Med Appl Sci, 2014, Vol 3 (2): 94-101.

Pituitary Fossa Measurements in Nigerians

Pituitary Fossa Deformity is one of the earliest signs of abnormalities within the cranium. We undertook this study to establish normal values which would aid diagnosis of abnormalities when they occur.

Measurements of the pituitary fossa were undertaken in 301 normal adult Nigerians. These were Nigerians with no history of intracranial lesion. They were all examined on the Elema-Schonander Radiographic Skull Unit using a focus film distance of 90cm (36inches) which allowed for slight variation in cranial size and a constant magnification factor. The measurements included sella length, depth and width, while the values for the area and volume were derived from these measurements using the computer Ep1 Info version 6.04 statistical software.

Findings

The mean length of the fossa was 11.967mm with a range of 10-15mm.

Mean depth was 6.924mm with range of 5-11mm while the mean width was 18.320mm with a range of 13-23mm.The computed value for the Lateral fossa area was 83.276sq.mm with a range of 50-180sq.mm.Computed value for the volume was 783.6cu.mm with a range of 420 – 1500cu.mm.Variations of depth, lateral area and volume with age were statistically significant with peak values in the 10-19 and 70-79 age groups.

We concluded that the sella volume was a more accurate method of assessment of enlargement than area most especially in borderline cases.

Nwachukwu MI, **Awosanya GOG**, Arogundade RA and Osibogun A. Archive of Nigerian Medicine and Medical Sciences, January 2006 Vol. 2 (3), 13-17. Pituitary Fossa Measurements in Nigerians.

CONCLUSION

Vice Chancellor Sir, I have in the last hour evaluated the Role of Radiology in Medicine and Dentistry. I have also narrated my academic pathway from University of Lagos to Lagos State University.I have highlighted my modest contributions through collaborative research to the advancement of knowledge in Diagnostic Radiology and Medicine.

Radiology remains a technology-driven and equipment-oriented specialty. Knowledge acquisition in Diagnostic Radiology entails the power of observation, power of comprehension and the linkage between both anchored on sound academic grounding in Anatomy, Pathophysiology of Disease and Medical Physics. Radiology provides services across all Clinical disciplines, Basic Medical Sciences, Veterinary Medical Sciences and Dentistry.If we do not move with the times, we will be left behind. The potential advantages of holistic Radiological investigations are boundless. If we must experience Radiology's bright future we must keep up with the pace of its global development holistically.

Our Radiology Colleagues are already leaders in Healthcare in Nigeria. We have Radiologists presently as Chief Medical Directors in OAUTHC and UNIMAID. We have Radiologists as Provosts of College of Medicine in UNIMAID and LASUCOM. Above all, the present Permanent Secretary of the Federal Ministry of Health, Dr. Amina Shamaki is a consummate Consultant Radiologist. The immediate past President of the Postgraduate Medical College of Nigeria, Prof. Arogundade is also a Radiologist. In order to 'possess our possessions', Radiologists must come together and establish group practices so as to eliminate quackery and slavery. This will also engender ultimate professionalism as well as subdue and subjugate neocolonialism.

Mr. Vice-Chancellor Sir, Imaging will continue to be in great demand. Radiologists must support research so as to drive the specialty forward. Teaching methods must improve and we must keep patients at the centre of our focus. Radiologists must be in the front seat in developing cutting edge technology.

RECOMMENDATIONS

Mr. Vice Chancellor Sir, may I recommend the following:

- Radiologists should be drafted to Anatomy Departments to teach Medical and Dental students, Radiological Anatomy pari passu Gross Anatomy. This will lay a solid foundation for future understanding of 2-dimensional and 3-dimensional anatomy of organs
- The Federal Government should provide Positron Emission Tomography (PET) equipment in each of the six geopolitical zones of Nigeria and ensure the training of the professionals to man them
- 3. The Federal Government should set aside a reasonable amount to fund research and retraining of University teachers
- 4. Lagos State University Teaching Hospital should demerge Diagnostic Radiology and Radiotherapy as this will allow Radiotherapy to grow multidimensionally. The Lagos State Government should, as a matter of priority, procure a therapy machine that will be put to use soonest. More cancers are radiosensitive than chemo-sensitive. The situation in Nigeria presently is precarious as the only functioning Radiotherapy machine, a Linear Accelerator in Benin has just broken down. This means Cancer patients have no option than to seek salvation outside the country which is tantamount to retrogression.
- 5. The Lagos State University should, without hesitation, start a B.Sc Degree course in Radiography at LASUCOM as the Lagos State Government through its Ministry of Health has already provided infrastructure for the training
- 6. The Federal Government should, as a matter of urgency, look into the care of Cancer patients particularly breast, prostate, colon and cervical cancers.The

Government should provide each geopolitical zone with a Genius 3-Dimensional Tomosynthesis Mammogram equipment which, if put in use, could further reduce morbidity and mortality of Breast Cancer/Diseases by 45% as it has done in the United States of America

- 7. Radiology Residents in training programme of either West African College of Surgeons or Nigerian Postgraduate Medical College should, as a matter of compulsion, do a 4-6 weeks posting in the Department of Morbid Anatomy and Histopathology to give them an exposure in Histopathology and make them more conversant with Forensic Radiology.
- 8. End users should have a say when equipment are to be procured or purchased and training of the Technicians to run and service such equipment should be compulsory. After sale maintenance of equipment should be of utmost priority. Government should be aware that equipment have half-lives and are not made to last forever. A replacement therefore must be planned for, as soon as equipment attains its half-life, and not at the tail end of decades of over use.
- 9. More Public Private Partnership (PPP) initiatives in health care provision should be sought, strengthened and sustained
- 10. Because Radiology is technology-driven, many Consultants should be encourgaged to achieve sub-specialty preference, and be distributed evenly throughout the country for good nationwide practices. Residents in training can move from one place to another to train under such sub-specialised Consultants such that after completion of training, and sometime in practice, they too can select their area for sub-specialization. The criteria for selection may be based on demonstrated keen interest as well as publishing in the field

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Many people often quip and ask me questions whenever I made mention of where I worship. Let me quickly digress to elucidate and image-intensify the African Church.

The African Church was founded October 13, 1901. It was as a result of secession from the St Paul's Breadfruit Church, Lagos.There were protests by blacks and native Nigerians against the autocratic Government, colour-prejudice, imposition of foreign custom and tradition, attempt to transplant and enforce principles of the Church of England on the native pastoral church. It centered around Rev. James Johnson a.k.a Holy Johnson, the Vicar in charge of St. Paul's Breadfruit Anglican Church. It is not a secret cult and was not founded for proliferation of polygamy or bigamy. The doctrines of the African Church are in the Holy Bible. Our Clergymen train at Emmanuel College Ibadan, African Church Theological College and other Theological Seminaries in Nigeria.

Being the son of a Clergyman, moreso a Methodist-trained and Emeritus Bishop of the African Church, I cannot but say that I grew up in the Church and hence I am a church boy who at all times then was glued to my dad, always willing to dress him up and undress his robes, adjusting his collar, removing the stole and rochette and fixing up his Bishop's staff. It is a God-given privilege to be the son of a Clergyman.

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POST GRADUATE DISSERTATION SUPERVISED

 Bowmann's Angle in Supracondylar Humeral Fractures in Patients at the National Orthopaedic Hospital. Dr. B. O. Balogun FMCR - Post Graduate Medical College of Nigeria. 1993.

2. Radiological Evaluation of Rhinosinusitis in Nigerians. Group Captain Dr. Okunola. Dissertation for Award of FMCORDL (ENT). Post Graduate Medical College of Nigeria. 1996.

- 3. Ultrasound Evaluation of Normal Brain Ventricular Size in TermNigerian Neonates. Nzegwu N. FMCR Post Graduate Medical College of Nigeria. 2001.
- 4. Comparison of Ultrasonographic Estimation of Birth Weight in Late Pregnancy and Actual Birth Weight. Dr. T. N. Opara Post Graduate Medical College of Nigeria. 2003.
- 5. Pattern of Uterine and Fallopian Tube Abnormalities in Hysterosalpingography of Women Presenting With Infertility at UBTH, Benin City. Dr. K. C. Eze. 2003.
- 6. Pituitary Fossa Measurements in Normal Adult Nigerians. Dr. M. Nwachukwu. FMCR. Post Graduate Medical College of Nigeria.2003.
- Radiology of Pulmonary Tuberculosis in HIV Positive Patients in the University of Benin Hospital. Dr. Akhigbe FMCR - Post Graduate Medical College of Nigeria. 2004.
- 8. Computed Tomographic Findings in Traumatic Brain Injuries. Dr. Ejakpovi FMCR Post Graduate Medical College of Nigeria. 2005.

- Radiography of Diabetic Foot Syndrome in Nigerians Dr. A. O. Adegboyega FMCR – Fellowship of the Faculty of Radiology, Post Graduate Medical College of Nigeria. 2005.
- Role of Mammography in the Management of Breast Diseases. FMCS Thesis.
 Dr. A. O. Oshinowo. Post Graduate Medical College of Nigeria. 2005.
- 11. Ultrasonographic Estimation of Amniotic Fluid Volume in Singleton Nigerian Pregnancies in Abuja. Dr. Umar FCMR- Post Graduate Medical College of Nigeria. 2005.
- 12. Ultrasonic Evaluation of Pancreatic Size in Normal Nigerians. Dr. Olowoyeye FMCR Post Graduate Medical College of Nigeria. 2005.
- 13. Ultrasound in the Management of Breast Disease Utilizing the American Birads Classification. Dr. N. K. Iruhe Post Graduate Medical College of Nigeria. 2006.
- 14. Abdominal Ultrasonographic Findings in Immune Compromised Patients at the University Of Benin Teaching Hospital. Dr. Igbinedion FMCR Post Graduate Medical College of Nigeria. 2008.
- Ultrasound Measurement of the Bladder Wall Thickness in Paediatric Patients.
 Dr. Oguntobi. Post Graduate Medical College of Nigeria. 2009.
- 16. Correlation of Ultrasound estimated fetal weight in late pregnancy with birth weight at UBTH, Benin City. Dr. Igunbor.National Post Graduate Medical College of Nigeria. 2012.
- 17. Correlating of Mammographic with Histopathology Accuracy in Diagnosis of Breast Cancer in Symptomatic Women at LUTH 2013. Dr. Jane Igwillo. National Post Graduate Medical College of Nigeria. 2013
- Sonographic Determination of Splenic Volume in Children with Sickle Cell Anaemia in Steady State. Dr. Caleb Yakubu. NMCN. Post Graduate Medical College of Nigeria.2013.
- 19. Scrotal Sonographic Evaluation of Infertile Male Patients at the Lagos University Teaching Hospital, Idi-Araba. Dr. Babasola Oyende, FMCR, 2015.

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- 43. Dr. Udofia, USA
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- 45. Dr. Fasan Odunsi, Lagos State University Teaching Hospital, Ikeja
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Late Mrs. Adefolabi Awosanya (1912 – 1979)



Late Rt. Rev. Moses Adeuja Awosanya (1899 – 2000)



Adeyemi Awosanya - Son



Tiwalade Oliwo (Nee Awosanya) - Daughter



Oluwaseun Awosanya (Papa) - Son





Late Pharm (Mrs) Olatokunbo Awosanya



Prof. G.O.G. & Late Pharm (Mrs) Olatokunbo Awosanya



Late Pharm (Mrs) Olatokunbo Awosanya