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OTORHINOLARYNGOLOGY:
FROM OBSCURITY TO EXCELLENCE

BY
P. A. OKEOWO



UNIVERSITY OF LAGOS PRESS - 1998
INAUGURAL LECTURE SERIES

OTORHINOLARYNGOLOGY:
FROM OBSCURITY TO EXCELLENCE

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U. L. ARCHIVE

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INTRODUCTION

What's in a name?
In arriving at my topic, I am aware that my area of speciality, Otorhinolaryngology is not until recently, a well-known speciality in Nigeria. As the first Nigerian Professor of the speciality in Nigeria, it is my duty to educate this community on this speciality of surgery.

Dedication

This lecture is dedicated to the memories of my late parents, Emmanuel Olaniwun Okeowo and Maria Onajoke Okeowo and to the late Mr. M. A. Kannike, my teacher in Magbon Alade.

Let us start from the simple name of Ear-Nose and Throat. To a layman, I am very sure, the nose of the ear will discharge mucus and discharge of the nose should not be associated with the ear. The nose is a part of the respiratory system and it is not until recently that it was considered a part of the ear-nose and throat.

The nose is the organ of smell and it also affects our quality of speech. The throat is not only for breathing and a passage for food but also for the voice production. It became necessary to give a more surgical medical name for the diseases affecting these areas of human anatomy. Hence the term Otorhinolaryngology from the Greek *Oto* - ear, *Rhino* - nose and *Larynx* - throat.

ENT surgery was not considered adequate to describe the speciality because the practitioner is both a surgeon and a physician of the field, as there is no physician counterpart such as chest physician to the ENT specialist. The term *Otorhinolaryngology* has been used for the speciality and still being used, but it has been assumed that the nose is not part of the ear-nose and throat. The best name is now considered to be Otorhinolaryngology. Head and Neck Surgery, Skull

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INTRODUCTION

What's in a name?

In arriving at my topic, I am aware that my area of speciality, Otorhinolaryngology is not until recently, a well-known speciality in Nigeria. As the first Nigerian Professor of the speciality I believe that it is my duty to educate this community on this speciality of surgery. That is exactly what this lecture is about.

Let us start from the simple name of Ear Nose and Throat (ENT).

To a layman, I am very sure, diseases of the ear will be associated with conditions of the ear such as wax, and discharging ear. Diseases of the nose could not be associated with anything more than the common cold and catarrh, while a request to point to the throat will not elicit more than pointing to Adam's apple.

Yet each of these three mentioned organs perform much greater functions than imagined. For example the ear also contains the organs of balance and equilibrium.

The nose is the organ of smell and it also affects our quality of speech. The throat is not only for breathing and a passage for food but also for the voice production. It became necessary to get a more surgical medical name for the diseases affecting these areas of human anatomy. Hence the term Otorhinolaryngology from the Greek *Otos* - ear *rhinos* - nose and *laryngos* - throat.

ENT surgery was not considered adequate to describe the speciality because the practitioner is both a surgeon and a physician of the field, as there is no physician counterpart such as chest physician to the cardiothoracic surgeon. The term *Otolaryngology* has been used for the speciality and is still being used, but this tends to assume that the nose is not part of the speciality. The best name is now considered to be Otorhinolaryngology (ORL)- Head and Neck Surgery. Still there are advocates of the term Head & Neck Medicine and Surgery. What is in a name, especially as we are

describing the doctor who is the guardian of upper air and food passages, and of hearing, balance and speech?

The lecture will be divided into three parts. In the first part, I shall endeavour to trace the history of this speciality through its different components from the earliest known time.

In the second part I shall deal with the growth of the speciality in Nigeria, the period of obscurity to the present. In this part I shall deal with the achievements not only of mine but also of some specialists that Nigeria has produced. In the third part, I shall treat the whole speciality and how it has risen from a state of relative obscurity to one of the most dynamic areas of medicine.

This would then lead me to compare the state of the practice of ORL in Nigeria with the rest of the world. With a few suggestions on how the huge gap that exists between our field and indeed any medical / speciality in Nigeria and the rest of the world can be closed up.

Otorhinolaryngology as a speciality, is a product of this century, that is, the twentieth century. Its component's, the ear or otology, the nose or rhinology and the throat or laryngology or more appropriately pharyngology had been practised from the ancient of times. Each area had its own practitioners and only came to form the present day speciality in the 1920's. Otology and Laryngology had quite different origins. The early otologists were surgeons used to the scalpel and trephine.

The early Laryngologists were physicians who combined their knowledge of the larynx with that of the chest. The laryngologists embraced the link between the two that is rhinology. Hence the name of otolaryngology.

The late seventeenth and eighteenth centuries were characterised by the development of clinical anatomical schools in Europe led by Itard and Delan of Paris. Morgagni had taught earlier that diseases should be based on pathological lesions found at autopsy. The clinicians had to find in life symptoms, which matched lesions in death. With this movement, hospitals became the centre of medical life and new specialities were born, necessitating in the development of instruments to examine the difficult areas. In 1802 Sir Astley Cooper

won a prize for relieving deafness by puncturing the tympanic membrane. The modern Otology was born.

In the 1830s practitioners of otology such as Toynbee, von Trotsch etc., appreciated the need to extend the clinical approach to embrace the developing disciplines of Physics, Chemistry and Biology in an effort to widen the knowledge of the pathological basis of diseases.

The era of "Laboratory Medicine" in contrast to hospital medicine was born. New microscopic techniques were developed which enabled diseases in pathological process as exemplified by Claude Bernard. In this era Herman von Helmholtz, a physiologist postulated a resonance theory of hearing while Kare Konig discovered the vibrations of the small bones in the ear and made precision instruments for acoustic studies.

Modern laryngology was born on that day in 1854 when Garcia at last achieved his life long ambitions to view his own larynx with a mirror.

THE ANCIENT TIMES

References to the areas of the ears, the nose and throat can be found in ancient Egyptian, Hindu, Chinese, Greco-Roman civilisations. Let us examine a few of these areas of references.

Folklore:-

The ear has been associated with many myths and superstitions. In a few nations the ear was perceived as a female organ of regeneration. In mediaeval Europe many artists tried to give the impression that the Virgin Mary, the Mother of our Lord Jesus Christ, was conceived by the Holy Spirit through the ear by the introduction of a breath. Since the ear is the first visible structure to be seen on the head. Ancients such as the innocent Aores in "Meliores L'Eecole dees femines" enquired whether a child is born by the ear. This belief that the ear represents an important organ of female generation can also be found in Monogolian, Persian and Indian legends.

The practice of cutting off ears of thieves which surprisingly is practised widely by many ancient and

modern cultures including the black people was supposed to render the culprits sterile. The father of medicine, Hippocrates believed that semen was produced in the head and only passed down to the genitals through a special vein at the back of ear. Therefore, cutting this off would interrupt the passage.

One common belief about the ears that permeated many cultures and civilisations and persists even today is the belief that if your ear tingles then someone is talking about you. It is known that this belief dates back to the time of Plinny in ancient Greece but I am sure that our own people in Nigeria must have held this belief even before the Europeans came to our shores. Our people even believe that if the right ear tingles, someone is talking some good about you and if the left ear tingles, it is otherwise.

There are so much other folklore beliefs about the ear and time will not permit us to mention all. A few are such beliefs that dental extraction causes deafness; insects can lay eggs which can creep into the brain through the ears, that wearing amulets of pig auditory ossicles prevent ear pain, that cold air getting through the ear can make the rest of the body cold. Many ancient races had produced many folklore remedies for ear problems such as deafness, pain (or otalgia) and ringing sensation. A few of these are, the juice of ant eggs, the urine of bulls, crab juice, snail juice, the fresh dung of a variety of animals, alum mixed with alcohol. In Morocco, rainwater collected on a particular day was considered to be a cure of ear diseases.

The nose: has not been left out of folklore and myths. In some communities of the world a large nose is said to belong to a liar while in others it is supposed to be a sign of sexual prowess.

For example, a medieval queen Joana of Naples in Italy selected men with large noses as her suitor friends. She did admit in a correspondence, which has been preserved, that this corresponding relationship was not always true.

The nose carries out the act of sneezing. Ancients like Homer, the Greek Philosopher, considered sneezing

as a good sign of possible recovery, in a severe illness because it was believed that when you sneeze, you were expelling the demons from the body. Up till today it is customary to say "God bless you" when someone sneezes. Perhaps we are still congratulating him for expelling rubbish from the body.

Nose bleeding or *epistaxis* had given rise to some myths. In ancient Britain one drop of blood from your nose was an indication that you were in love while more than three drops foretold death or a very ominous occurrence. Myths and folklore had prescribed many remedies for nose bleeding, these include frying of one's own blood and applying it as a snuff. For a male sufferer the ancient Egyptians prescribed that he should get a jar of cold water and immerse his sexual organ in it with one hand while holding the nose with the other. I could not find any reference as to what a lady should do. Numerous charms and prayers addressed to the Virgin Mary and the Holy Trinity were common among ancient Catholic Communities. However, one must not forget to mention Lupton in 1601 who prescribed that when the nose bled from one side the sufferer should pinch the other side and *vice versa*. This is still an acceptable first aid treatment of *epistaxis* till today.

Colds and catarrh, a very common problem has its own remedies in many folklores and beliefs. In Western Bohemia in Europe, at one time, it was believed that to cure nasal catarrh, you should smear a coin with the mucus and place it on a road to be picked up a passer by. It was believed that the catarrh was then transferred to the other person. As you are aware, the use of tobacco and other plant product snuffs are still used in the eastern part of this Country and some areas of East Africa to cure nasal catarrh.

The Throat.

Diseases of the throat have had their own folklore treatment. In former Czechoslovakia in Europe it was believed that eating "eels", a slippery fish, was supposed to make the voice hoarse. The Roman Catholic Church still performs the rite of "Blessing the throat", on the 3rd of February, the feast of St. Blaire, a saint who in Spain

was called "Abodago della gargantua (defender of the throat). In the Yoruba custom, it is believed that to have a strong voice you should eat Orogbo (*Bitter Kola*) and to make the voice soft you should eat ripe banana.

Let us now leave the myths and follow different civilisations of the world as they try to tackle many diseases including diseases of the ear, nose and throat in what they believed were organised practices of their days.

(A.) Egyptians and Hebrews: The Egyptian writing on the papyrus Ebers was formed in 1858, in a tomb at Luxor (Egypt's former capital at the time of Moses) Through this we are able to have a glimpse into the prescriptions of the ancient Egyptians for many diseases including diseases of the ear, nose and throat. Let me quote from the writing: "For an ear hears that badly (that is hard of hearing) apply red lead and resin from the am-tree; grind to powder and mix with fresh olive oil and apply to the ear".

There are other prescriptions for a discharging ear. Another papyrus, the Edwin Smith papyrus gave us the practice of treatment of at least 5 surgical procedures, but little reference could be found for ENT diseases. For treating a fractured nose, he said every "worm" of blood (CLOTS) is to be removed and the bone to be forced back and the nostrils packed with linen saturated with grease and honey. The surgical principles are sound till today; remove all clots (worm of blood) reduce the fracture and immobilise.

While the Bible has a lot of information in the treatment of many diseases little information is given about my speciality. In fact if a sacrificial animal was found to have a deformed ear, pierced ear, it was to be rejected as being unsuitable for that sacrifice. However, among the miracles of the Lord Jesus Christ was the healing of the deaf mute-quote "Upon whose ears and tongue he placed his fingers and spoke" ephpata" that is" be opened" and straightaway his ears were opened and his tongue was loosened and he spake plain". "(Gospel of St Mark 7: 31-37). Many prophets and

preachers of many healing churches are still attempting this feast and many of them claim success.

(B) **Hindu and Chinese Medicine:-** These civilisations too have a lot of references to early practice. The most interesting references to the doctors is the assertion that in curing a disease, caustic was better than the knife and fire was superior to them both. How true we have found the statement will be revealed when, later, I allude to the use of laser as an operation tools in Otorhinolaryngology. Repair of the nose plastic operations were widely practised in ancient Hindu and Chinese medicine. *Uvulectomy*, the removal of the uvula, a structure that hangs down from the soft palate on opening the mouth was being done in Northern India before the Arabic practitioners described and practised it extensively.

Let me quote from Sasruta the acclaimed Hindu medical writer on how to remove foreign bodies in the ENT. Territory For a foreign bodies in the throat- a casting a hot iron through a metallic tube to dissolve or soften the foreign body. Fish bones and wax were removed with probing or moved on by drinking fluids. If all these fail, the patient should be beaten on the back of the head. For foreign bodies in the ear, place the affected ear on a table and bang the table with a hammer. The foreign body was then expected to fall out.

(C.) **Greeks and Romans:-** Our modern civilisation which was brought by the Western Europeans Countries owes a lot to the Greeks and Romans.

Philosophy History, Poetry, Drama, Architecture, Mathematics, Astronomy, Science and Medicine had their roots in the civilisations of these two peoples. Sometimes, the excellence that they achieved had never been equalled. I am talking of the era of Hippocrates, the father of medicine, as you all know and the oath, which is subscribed to by those of us in the medical profession was written by him.

My speciality benefited a lot from some of his writings and prescriptions. Hippocrates was probably the first person to inspect the tympanic membrane or

eardrum and to recognise it as a part of the organ of hearing. He described acute otitis media and his belief that he had that ear discharge was part of a brain abscess was held as true until the seventeenth century. Hippocrates even designed a means of removing polyps, which are growth of the nose with a bag, which was pushed through the nose and retrieved, from the mouth thus sweeping the polyps along with them. This method was practised until the nineteenth century. Among other modes of treatment recommended by Hippocrates for the management of problems of the ear, nose and throat are:-

1. The use of internal splints for Carthaginian fractures of the nose.
2. Diphtheria, Hear him:- "Ulceration that rear on the tonsils, are dangerous. When children have a considerable ulceration of the tonsils, if they can drink, it is a sign they may recover. In cases of ulcerated tonsil, the formation of a membrane - like a spiders web is not a good sign etc". (These quotations came from his book," *Dentitia*, xvii - xxxii).

Other Greeks who contributed immensely to the development of medicine include Aristotle, (who, for example believed that the seat of hearing is in the occiput. He was nearly right because the seat of sight is in the occipital region.

Others are Galen Celsus who described methods of removing the tonsils with the fingers.

Other practitioners of medicine whose details of treatment of ear, nose and throat diseases were mentioned were the Arabs. Whereas the teaching of the Christian Church tended to revert medicine to the pre-Hippocrates era, the Arabian physicians not only revered the work of their predecessors but also sought to add their own original thoughts. Traditional uvulectomy, which is practised in many parts of the World probably, was popularised by the Arabs.

The Organised Medieval University Colleges of Medicine

All who have cause to study the history of medicine will know the wealth of gratitude that the profession owes to the early schools of Salerno in Italy. Medicine became a profession based on the study of anatomy and physiology. Of those who contributed immensely to the development of the ear and nose and throat included Gud De Chaveliac who designed the first speculum for looking into the ears (1520-1574) Bantholomeua Eustachius who described the Eustachian tube that bears his name today.

The first drawing of the small bones of the ear, the malleus, incus and stapes first appeared in 1543 in a book "*De Humanic Corporis Fabrica Libri Septem*".

From my accounts so far you will have observed that the ear had a more major interest than the other areas joined to it later to form the speciality, that is the nose and throat.

The European Age of Discovery,

Let us now go back from the era of the Medieval Europeans, which leaps to the scientific revolutions of the seventeenth and eighteenth centuries. This means a lot to many people. Francis Bacon (1596 - 1650), reform of philosophy. Galileo Galilee (1564-1642) focusing on mechanics and measurements in science. William Gilbert, 1540-1603 and William Harvey who discovered the mode of circulation of blood through the body. Robert Boyle, Isaac Newton

Thomas Willis of the "Willis circle" fame, the circular network of blood at the base of the brain which ensures that the brain is constantly supplied with blood. To Willis we in the ENT speciality owe the discovery of the term "Paracosis of Willis" Hear how Willis described this phenomenon in 1660:- "We meet a certain kind of deafness in which those affected seem wholly, to want the sense of hearing yet as soon as a great noise of great guns, bells or drums is made close to the ears, they distinctly understand the speeches of bystanders, but this noise discontinuing the presently grow deaf again. I heard from a credible person that he once knew woman

though she were deaf, yet so long as a drum is beaten within her chamber, she heard every word perfectly, wherefore her husband kept a servant as a drummer so that he could converse with his wife...“ Incredible but this is true. Other names are those of Valsava who introduced a manouvre by which we could inflate the middle ears by blowing through the nose. While the ancient surgeons advised strictly against cutting into the windpipe, especially Aesculapius, the surgeons of the seventeenth and eighteenth centuries applied the operations of tracheostomy to save the lives of children with acute inflammations of the pharynx.

The early laryngologists were part of the chest practitioners and virtually no limit was set for their practice. What suffices is that the names given to the subdivisions of the lobes of the lungs (i.e middle lobe, etc) were given by the early laryngologists. A lot of instruments were designed including bronchoscope for looking into the larynx and trachea. Before this an arrangement of mirrors and prisms were used to look into the larynx. Czermak, a German who lived in 1828-1873, converted an autolaryngoscope which enabled him to look at his own vocal cords.

The European age which was full of discovery began in about 1847 to about 1870 and a lot of progress was made not only in Otorhinolaryngology but also in the rest of medicine. In 1847 James Simpson Yang discovered Chloroform and began the era of anaesthesia. James Young-distilled petroleum. Lister introduced antiseptic surgery. Other events during the era - Suez Canal were opened, America's Civil War.

Florence Nightingale was busy reforming Nursing. It was also the age of great politicians, music composers and poets. But for Africa, it was also the period millions of Africans were being uprooted from their home lands and shipped into slavery. When this was abolished, the era of the Europeans intensive colonization of Africa followed. This is not a lecture in politics but I leave it to your imagination the disadvantages that the Africans at least of the West Coast have been placed if the golden era of discovery in one part of the World was simultaneous with its enslavement.

African Myths

I am aware that my listeners may be wondering where the contributions of Africans are in this trace of history. Why trace the achievements of Babylonians, Greeks, Romans, Hebrews and Arabs without mentioning what the myths and beliefs of the black people were. I will never be among those who will say that Africans contributed little except in outrageous beliefs and practices. Our problems stem from the fact that we did not develop writing except for the Egyptians. One of the few avenues available to us to learn about the ancient beliefs and cultures of our people is in oral traditions.

Deafness

In the case of the Traditional mythology my research so far reveals the following:- Most Traditional Nigerian practitioners that I spoke to believed that deafness is due to "ategun" This is a wide description that we in orthodox medicine can recognise as febrile convulsion or meningitis or stroke. They are quite correct. If deafness has occurred following "ategun" is there any remedy?

The answer is "no" or if an "enemy" is behind the event, this falls within the practitioners of divination. A discharging ear is thought to be fluids coming from the brain. For a discharging ear the following is prescribed. 9 soldier ants (*Janijogun*) together with allegator pepper (*ataare*) should be ground and mixed with *adin* (coconut oil) and applied to the ear. This is thought to clear the dirt from the ear.

What special qualities are possessed by the *Janijogun* ants are not known. Could it be because they are scavengers in real life?

For ear ache which has not discharged, the following prescription is given, fresh water crab that has been dried and ground to pieces should be mixed with black soap and used as head wash. Do our traditional doctors recognise that the area of ear diseases is special a one that should not be dabbled into by everybody? The answer is "Yes!"

Diseases such as tinnitus, (noises in the ears) and *epistaxis* are grouped as "*Atoriwa*" that is diseases that come from the head. The treatment of epistaxis (bleeding from the nose) is often treated by applying "*efinrin leaves*". We recognise this plant as *Crasipes Occimum* and the work of Tella and some other collaborators from our unit has recognised that it has a weak vasoconstrictor effect. For stopping of blood elsewhere the "*efinrin leaves*" should be mixed with "*ewuro*" (bitter leaves) and *agatu* leaves." *Agatu* plant is usually a weed which is removed from the soil before planting crops.

Dongoyaro leaves are used as part of a concoction to treat the fever of common cold rather than general malaria fever. For acute *sinusitis*, adding mango leaves are said to enhance the effect of *dongoyaro*. Incredibly *dongoyaro*, *eucalyptus* whose oil we use to treat common cold. For throat problems, everyone is familiar with the use of bitter cola (*orogbo*) and *atare* to treat hoarseness.

Otorhinolaryngology in Nigeria

The specialty of Otorhinolaryngology which was produced as a result of the merger of otology, rhinology and laryngology into one specialty in about 1920 did not reach Nigeria until about 1955 when Hackett arrived at the General Hospital in Lagos. Hackett worked there and encouraged the training of two Nigerians, the late Etubon Basse who had a diploma in Laryngology & tology (DLO) and was the first Nigerian otolaryngologist. The late Mr E.I.P.Ebosie became the first Nigerian to obtain the full fellowship (FRCS) in Otolaryngology.

The team was complemented later by a Polish Lady, Dr Kwatoska. I obtained my first fascination with the specialty as a foundation medical student of the University of Lagos when we had to do our posting at the General Hospital in Lagos. Mr Ebosie was then part-time ENT consultant to LUTH. What first fascinated me was the mirror, which the surgeons carried on their foreheads.

I had earlier noted that when cartoons and caricatures were drawn about doctors, the doctors were often shown carrying a lamp on his forehead.

Meanwhile in about 1957 the first academic ENT surgeon had joined the service of the department of surgery of the University of Ibadan. That man was Mr. Frank D. Martinson, Ghananian born and naturalised Briton, who popularised academic ORL and practised almost all his career in Nigeria. He became, as far as I know, the first black African Professor of Otorhinolaryngology in Ibadan.

My Education

My education history was very eventful. I started my primary education in my hometown Ijebu-Igbo. I completed my education in a small seaside village of Magbon-Alade in the present Ibeju-Lekki Local Government of Lagos State from where I passed to Kings College Lagos. As a foundation student of the College of Medicine of the Lagos University we were thoroughly used as guinea pigs to establish the reputation of the University. All told, I have spent close to two-thirds of my lifetime in the University of Lagos.

On graduation as the first set of doctors produced by the University of Lagos in 1967; jobs were looking for us instead of *vice versa*. With the first distinction in anatomy awarded by the University of Lagos and with a distinction in surgery in the final MBBS examination, I had a very bright surgical career ahead of me. The three of us who had distinction in surgery included Dr. A. A. Owoseni who is a distinguished Urological Surgeon and I suppose, he is presently in this audience and Dr Ozobia who is now practising in the United States of America. We were given automatic jobs by Prof. H. Oritshejotomi Thomas the first Dean of the College of Medicine. We were invited straight away from our halls of residence to join ward round. It was left for the Hospital Secretary to chase us around to fill our employment forms and to give each of us a car loan of £800. My surgical career was further boosted when I became one of the first House officers in surgery to be drafted to the war theatre during the Nigerian civil war. I served honourably as a Captain in the Nigerian Army in Oji River between Udi and Awka in the then East Central State of Nigeria or

Biafra. This experience prepared me for subsequent career in surgery.

On September 30, 1968 in a four hour operation, I helped to remove about 2/3 of the intestine of a man who was in a hunting party for antelope but was accidentally shot after he was mistaken for the antelope by the other hunters. I moved to ENT the following day.

Being allowed to move was not as easy as expected and it took all the diplomacy and administrative skill of Professor Adesola to move.

A scholarship from the Lagos University Teaching Hospital then followed and within seventeen months of getting to Britain, I was able with the help of God to pass the fellowship of the Royal College of Surgeons of Edinburgh in 1972 being the first Medical graduate of the University of Lagos to become a surgeon. I came back to Nigeria in 1973 at a time when Mr Mukhejee, the ENT surgeon, employed by LUTH in 1969 and with whom I worked for 3 months before going abroad, was just about to leave. I had to be sent to Ibadan to work with Professor Martinson for about 4 months before assuming the full leaderships of the ENT Unit in the Department of Surgery in 1974. I became the second academic ENT doctor in Nigeria after Professor Martinson.

With a full-fledged academic ENT units of surgery in Ibadan and Lagos, another one was soon added in Enugu. This was first nurtured by Mr. Mukhejee who left Lagos and later by Mr and now Professor B.C. Okafor. Our mentor, Prof. Martinson, has retired from Ibadan and is alive and well and resident in the United Kingdom. The authorities of the U.C.H have done well by naming the ENT ward in Ibadan after him.

The units / departments in Ibadan, Lagos and Enugu have produced between them most of the Otorhinolaryngologists in the Nigerian and West African PostGraduate Programme. Lagos has however produced the majority. All our graduates produced in the fellowship programme of either the National College/ West African Post Graduate College have spread out and have moved to found or head other departments in the

country. The Lagos ENT unit has had the singular success of supplying a Professor to head the department in Ibadan when virtually all the staff of Ibadan went to the Gulf. Trainees of the ENT unit Lagos have moved out to head departments in Jos, Ilorin, Ife and private hospital such as the Eko Hospital. Others are to be found in private practice. By the way, Mr. Vice Chancellor, Sir, the unit in Lagos still remains a unit of department of surgery when our trainees had moved out to head full fledged departments of otorhinolaryngology in other places.

The Lagos Unit / Our Contributions to knowledge

The main contribution to knowledge of the ENT unit has been mostly in the epidemiology and management of otitis media. Ours is an environment in which the dangers of certain diseases are not well understood. One of such diseases is otitis media, the diseases of the Ear accompanied by a discharge from the ear and produces hearing loss in a variety of ways.

Why Study Otitis Media?

Before I answer this question, let me start a brief discourse on deafness and hearing loss:- Deafness is the most severe disability of the special senses comprising sight and hearing. Here, I wish to raise a familiar controversy in which I am often involved. Which is the greater disability- blindness or deafness in a young person. My considered opinion has always been that deafness is the more severe disability. People quickly disagree with me. "At least the deaf can see what is going on". My side of the argument is based on the process of learning.

Which special sense contributes more to learning seeing or hearing?

Speech is the most important medium of communication and it is entirely dependent on hearing. It is a process of the storage information in the brain, which can be recalled later. This process starts in a child from the critical age of 15 months to 18 months when a child starts to 'babble', that is, to repeat whatever he hears others in the environment say. His pronunciation

may not be perfect- he may repeat "water" as "ata" but he begins to build up his own vocabulary in that gigantic computer called the frontal lobe of the brain. It is from this store that the child will begin to put his own words together. The child's simulation especially of his parents is so perfect that the child will speak the intonation of those he listens to.

This is why we have dialects in language. Imagine the process of hearing being impaired at this critical stage. It does not matter whether the impairment is total or partial - the child's ability to store information is severely impaired. Since he has nothing to recall and make speech with. He becomes mute or "dumb" and becomes aggressive when he sees people's lips moving but not hearing what they are saying. Could they be saying swelling about him? Please, do not approach a deaf child with a leaf in your mouth. Because he has seen animals eating leaves, he may think that you are calling him an animal. He may attack you.

The summary for the deaf child is that learning is severely impaired. He is in the world but not much part of it. For the blind child, the picture is different. He can hear, he can hear a lot of words and, by using other senses, he may become a clever person. The blind child does not see the world but he is a big part of it. Herein lies the difference between the two disabilities. With communication gadgets, the blind can go on to achieve much in life that people with two eyes cannot. For the deaf, even the hearing aids given him only a little relief to break his world of silence, the result is often mental retardation.

Even at the adult level the difference is still clear. With proper communication such as the sign language the adult deaf can understand a lot of this my lecture but we surely miss the humorous aspects. The blind only need to be assisted (or even does not need your assistance. He will enjoy every moment of this lecture including any humour.

The partially deaf or hard of hearing is presented with no less a formidable problem. Remember that as we grow older we lose our hearing acuity a condition called

presbycusis. When one's hearing acuity is not adequate one begins to exhibit one or more of these signs.

- (1) One will miss whole phrases or words in conversation. It may be very embarrassing if one misses essential words in a sentence. He may say that a speaker has not emphasised a point and then everyone tells him "but he said so----"
- (2) The hard of hearing is not only embarrassed but some tension may build up inside him.
- (3) He may be forced to keep to himself during essential discussions since he cannot really follow on what is being said.

So again, why study Otitis Media?

Otitis Media is an inflammation of the middle ear. The layman recognises it as a discharging ear. But sometimes it occurs in a form in which there is no discharge, in a sterile fluid, which accumulates behind an intact tympanic membrane. This is common in children. The most important social complication of otitis media is deafness or hardness of hearing. When a child does not hear properly at a certain critical stage of his life, then his speech and learning are affected.

How common this diseases is can be seen from the figures around the World. By the age of one year, at least 50% of all American children would have had an attack of otitis media and by the age of 3 years at least 70% of children would have had at least one episode. One of the causes of the ear infection is combination of two factors. One is the nature of the Eustachian tube of the child, which makes it easy for anything swallowed to regurgitate through the nose and find its way to the middle ear through the Eustachian tube which is more horizontal in position than the adult. The other factor is that in spite of its wide consumption, cow's milk which is the basis of artificial milk foods is a foreign body to the tissues of the body and can cause allergic reactions. The paediatricians have told us enough about this. In an infant who cannot complain, otitis media will cause the child to go off his food, cry excessively will cause a temperature rise.

A research work carried out by Elton & Connell at the Wesley Guild Hospital, Ilesha. They confirmed that 28% of children under the age of five years who had a temperature of 1,00°F or more had otitis media. Ordinarily such children would have been treated for malaria by the ever-busy outpatient doctor.

This statement was confirmed by a similar work done at the Obafemi Awolowo University Teaching Hospital, Ile Ife by a resident who is being supervised by me.

While most cases of otitis media heal spontaneously a lot of the healing is not perfect, leading to adhesion and tympanosclerosis which will manifest as deafness later in life. There is a silent form of otitis media in children in which there is no discharge but a collection of fluids in the middle ear. The result of this is that as long as the fluid remains in the cavity the child's hearing will be dulled. When called at home or in school he may not answer simply because he does not hear well. Most parents and teachers miss the fact that the child's may have some temporary hearing problem and they either raise their own voices or give the child a knock on the head for "overflow hearing" or "agboya". This collection of fluid in the middle ear usually follows a cold in a young child or with inadequate use of antibiotics treated in otitis media. In 1975 I called in a primary school and got permission to test all the children for fluid in the ears using the tympanometer an instrument which does not cause any discomfort to young children.

I got an amazing result - 6% of the children had fluid in their ears. A corresponding questionnaire to the parents of the children as to whether they had noticed any minor hearing problems in their children was positive in less than 0.1%. What all this mean is that the children during that period may not be doing well in their lessons because of the temporary mild hearing loss associated with fluids. In the developed countries such as the U.S, when fluid in the ears (properly called otitis media with effusion O.M.E. or serious otitis media), the parents or teachers would have recognised and the children taken to the ENT specialists for a simple operation called *myringotomy* in which the ear is

anaesthetised and the fluid sucked out. One million such myringotomies are done in the United States every year. These make it the commonest operation done on children. If the child has to have repeated drainages (especially in the wintertime) or the fluid becomes thickened from what is called a "glue ear," a small plastic tube called a *gromet* is usually inserted until all the fluid finds its way out. The implication when applied to us in Nigeria, where the condition is not often reported is that a lot of the children supposed to be "dull" or "difficult" at school or in the home have this transient fluid collection. It is very easy why a hearing test in the preschool children upon entering the primary school is mandatory. Remember that we are not saying the children are deaf, they only have an impaired hearing, which only a simple hearing test will detect. My figure of six percent point prevalence in Nigerian children (Okeowo, 1978) is now accepted by the WHO for planning purposes.

As mentioned earlier more than 95% of the otitis media of childhood heals spontaneously even if not perfect. A little portion goes on to persist as a discharging ear which all of us know and recognise. All discharging ears have their root in infancy.

Therefore the child of eight or ten years of age who is finally referred to the ENT surgeon has probably been discharging on and off for that period of time. The eardrum has been perforated (because it is through a perforated drum, that the discharge comes) from infancy. Children with intermittent discharging ears (called chronic suppurative otitis media) are kept by their parents on self-medication or treated by doctors. Finally, the child is referred to the ENT specialist. I can assure you that it takes a difficult job to eradicate the disease. Complications such as meningitis (inflammation of the brain) can occur anytime because the ear is so close to the brain. My appeal is that any child with a discharging ear should be promptly referred to the ENT specialist. The danger is that the disease comes and goes. So many parents and doctors are under the false impression that it has been cured. One would like to seize this opportunity to inform the audience that being hard of

hearing does not usually start suddenly in one day. Ageing and "healed" otitis media of infancy are the most common causes. One does not notice that one is hard of hearing until almost 40% of the hearing is gone and even then one tends to think that there is difficulty in hearing because the other person is "mumbling" and not speaking properly. When you think that people are always mumbling to you, in many cases it is your ear that is not good. I have been involved in a long-term study of the effect of Otitis Media on a child's intellectual development. In this study a group of children in a day care centre in Verona Pennsylvania, USA were studied in 1981 and are still being followed up (Okeowo, Casselbrant *et al* 1981). There is no doubt that Otitis Media in childhood, if it goes on untreated leads to retarded development. This brings out the importance of hearing to learning and understanding.

I will briefly discuss other areas in which the ENT Unit of Lagos has made contributions to knowledge.

Treatment of Otitis Media.

We have made appreciable contribution to the treatment of otitis media especially of the suppurative type. The suppurative otitis is the most recognised because there is a discharging ear. Research in the 1980s (Rotimi *et al*) showed that the prevalent organism in discharging ear is the *pseudomonas*. We have proved (Rotimi, Olabiyi and Okeowo) that *pseudomonas* is an opportunistic organism in ear discharges. One of my residents has proved that toileting the ear adequately alone can dry a discharging ear (Lily- Tariah Dissertation). This will find acceptance in the primary care of the future.

The get rich quick traditional medicine

During an analysis of foreign bodies swallowed into the oesophagus (Okeowo 1988) it was noticed that the incidence of swallowed whole kolanut that got impacted was very high in our series. It was obvious that these were for traditional medicine purposes. When patients are asked why they swallowed kolanuts whole instead of chewing them, they gave "cock and bull" stories such as

"I was holding it in my mouth and someone tickled me" or "A friend of mine and I were comparing who could open his mouth better and my kolanut slipped in. It took some bit of research to know that this was the basis of what Yorubas call "Lukud?" a traditional medicine that was supposed to get you rich quickly. In some of the impacted cases we did not remove the kolanut but pushed them into the stomach. Whether the patients got rich after that I cannot tell.

Martinson Clark Diseases:-

In 1978 Professor Martinson of the University of Ibadan discovered a fungal infection of the nose caused by the fungus *Phycomyces*. He described its behaviour and the disease was named after him. For many years we did not see the disease in Lagos. But recently at least 3 cases have surfaced. Unfortunately, it was not often difficult to recognise the disease but practitioners and others went back to treat such patients with the medication prescribed by Martinson i.e., Amphotericin B, a very toxic medicine and Potassium Iodide. In the cases we have seen this treatment as not successful. We have therefore added our own stamp on the disease by working out a treatment modality with modern antifungal drugs and we have got good results as shown in these slide.

Non Suppurative Conductive deafness.

My area of reaserch interest has covered the causes of non- suppurative conductive hearing loss in Nigerians. We have proved beyond doubt that such hearing loss is not due to "Otosclerosis" which is very common among caucasians. In the black people, the causes are likely to be *tympanosclerosis*.

Tracheostomy

In the early eighties, we did more tracheostomy operations in the unit perhaps more than any unit in the world. This was because of the high prevalence of tetanus and croup (laryngo tracheo bronchitis) in Lagos. In a paper published in a Canadian Journal (Okeowo 1988) noted the role of tracheostomy in

Otolaryngological practice in a developing country. I pointed out the high incidence of mortality in Tetanus patients if tracheostomy was not done early. This stimulated early referral for the operation in the LUTH. Not only did we save more patients with early tracheostomy, we have perfected the operation in such a way that one complication of the operation such as "hole in the neck" among that was popular in the seventies has virtually disappeared.

Nasopharygeal Carcinoma

This cancer has been said to be a product of the environment. It occurs in epidemic proportions among the Chinese especially those of the Kwantung province of China. But it also has genetic aetiology since ethnic Chinese of the second generation immigrants in California, in the USA have higher disposition to the disease than Americans.

I have been able to determine in the Unit (Okeowo & Ajayi; 1978) that the incidence of the disease in Africans is roughly midway between the Caucasians and the Chinese. I was even emboldened in a paper read at the World Congress of Otorhinolaryngology in 1989 in Madrid Spain, that there is a higher incidence among Eastern Nigerians. In Lagos where my hospital draws most of its patients, research showed that Yorubas constitute roughly 80% of the state but the incidence of NPC among Easterners is about 54% of all ethnic groups. This leads one to wonder what the aetiology could be. I am not aware of the consumption of smoked fish is higher in Eastern Nigerians. Could it be due to the higher incidence of "Snuff" use? These are questions that must be answered in the future. Incidentally, Nitrosamine is the carcinogen implicated in the high incidence of the cancer among the Chinese. A study done by Professor Coker and others of the Pharmacy School in CMUL has found a high Nitrosame contamination in local foods.

Further research into deafness

A hearing test as part of a health assessment is once a year recommended to everybody. Our research has

shown that up to 10% of the Nigerian population have one form of hearing impairment or the other (Okeowo and Owolawi). This comes to about 10million people. While on this subject I will like to quote the work of the late Prof. Osuntokun who identified chronic cyanide poisoning in Gaari as potent causes of hearing impairment as we grow older. It is true that the traditional preparation of gaari sieves out the poisonous cyanide in the cassava stem. We must constantly monitor this popular food item to see to it, that the cyanide level in it is not injurious to the human body. The proper preparation is essential.

Otorhinolaryngology of modern times.

Let us now go back to Otorhinolaryngology in the modern time. As informed earlier the present speciality started in the nineteen twenties, the speciality - was combined with the eye speciality and departments of EENT, (Eye, Ear, Nose and Throat) which were common in America. The famous Moorfield eye centre in London started with the combined specialities but the marriage lasted only two years. A combined academy that examined in both specialities operated in the United States until 1924 when each of the speciality went its separate ways. However departments of EENT persisted in many institutions all over the world. Combined hospitals such as the Eye & Ear infirmary of Edinburgh and the Eye & Ear Hospital of Pittsburgh to mention a few still exists.

Otorhinolaryngology has made tremendous progress and is one of the most dynamic specialities of the surgical profession. It is in this area that Nigeria has lagged behind the rest of the World... why is this so?

When I started ORL practice at the LUTH in 1974, the clinic was equipped with state of the art equipment. But because of the inability to service or replace broken down equipment, the rest of the world has left us behind. ORL is a very instrument at intensive speciality. While examination of the areas of ear, nose & throat is done abroad by special flexible endoscopes, not necessitating the patient to be put to sleep, we still have to carry these procedures under general anaesthetic

with its attendant risks, even if minimal. Since we do not possess appreciable technology, we have to import equipment, the cost which is often beyond the means of our institutions. ORL as a dynamic speciality is often tackling problems, which had been accepted as such in the past. No condition exemplifies this statement more than the advances made in the speciality to alleviate sensorineural hearing deafness whose management until 20 years ago was regarded as being medically untreatable.

Perhaps what can be considered as the most contributory advancement to medicine has been the development of the operation of cochlea implant for the alleviation of deafness. If one were to perform this operation on anyone in Nigeria today, it will cost between two- three million naira (\$25,000 to \$ 36,000). We are, however, preparing to do this operation. Is this justified? Let us look at deafness again.

Management of the Deaf and Hard of Hearing.

In trying to help the hard of hearing and the deaf, we find that the tragedy of this disability is further highlighted.

Hearing Aids:

These gadgets of various sizes have one function in common and that is to pick sound from the environment and magnify the sounds and then feeding them into the normal hearing apparatus. They are not just passive instruments such as the lens used in glasses that are used to improve sight. Hearing Aids, however, cost a lot of money. The cheapest hearing aid today in the Nigerian market costs about N20,000.00 while aids costs as much as N250,000.00. They are usually out of reach of the poor people whose children are often afflicted. When these prices are given to the patients or their parents, the decision is often to let the deaf child go on with his deafness. Said a parent to me one day..." after all he can see..." This problem may be accentuated, when two or more children in the family is present with deafness, a condition that can easily be explained by a genetic factor in the either the father or the mother. This is often the

type of circumstance that reminds a man that his wife is either a witch or has some "curse" on her. The man often conveniently forgets that the genetic problem may be his own or in his own family. Even if hearing aids can be bought, the benefit may not amount to much and in many cases any benefit is not seen immediately.

Hearing aids do give a lot of help to the partially deaf and hard of hearing, especially, for the conductive hearing loss such as complicates long ear discharge and its sequelae and in sensorineural hearing loss such as presbycusis that accompanies ageing.

It is fashionable abroad for people the age of 50 to wear sophisticated "hidden" hearing aids to help their hearing especially if they have to attend special board meetings when it is imperative that they hear all that is said clearly. As I said earlier, if at a meeting, academic assembly, senate, council or other meetings you feel that some of the speakers are "mumbling" or not talking out loud... enough, it may be your hearing that should be checked. People have often turned to me at senate meetings (Where many people are over the age of 50) and asked "What did that last speaker say?" "Mr Vice Chancellor, may I request on behalf of such hard of hearing academic sufferers if a public address system could be used during senate meetings. Because I cannot see any of our members who can cough out N40,000.00 just to improve his hearing.

Sign Language

In the rehabilitation of the deaf (especially children) sign language is used to help learning. It is only useful for group teaching and of course in such circumstances whereby a deaf is married to a deaf.

Let me go back to where I started this argument. Anything that can be done to help a hard of hearing or deaf person is worth it.

Let us look at the operation of cochlear implant. It not only represents one of the major advances in any part of surgery.

In the cochlear implant operation, the following steps are involved.

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The patient wears a microphone

- (1) Which collects sound from the environment and sends this to the speech processor.
- (2) Which from the speech processor the signals are sent to the transmitter.
- (4) Which transmit the signals to an receiver (implant) which is embedded in the skull.

The implant sends an electrode, which is inserted into the cochlear, which is then stimulated to the auditory nerve. The auditory nerve does its normal work by sending the signals to the brain. For a person who has not been hearing, the first day the implant is switched on, the patient experiences jumble of noises. From this noise a lot of training is needed to allow the patient an appreciable hearing.

Why do I consider the Cochlear Implant a land mark operation?

It is the first operation that attempts to take over a very complex sensory organ such as the ear.

2 Anything that can be done to bring some sound to a person living in a World of silence should be done.

In order to prepare for the operation we have started a Temporal bone dissection course, the first of its type in West Africa to give regular courses of instruction in the dissection of the temporal bone (which looses the ear structures) in the cadaver skulls. I must acknowledge the efforts of Dr C.C. Nwawolo. When the next patient who is able to pay for the operation comes we will surely do it in the unit because we have prepared adequately.

This leads me to give a challenge to our colleagues in the Electrical and Electronics discipline of this University. Let us analyse the reason why this operation costs N2.5 million or why hearing aids cost so much.

The hearing aid uses an advanced technology which however, is based on the telephone while the word processor that costs up to N2million out of the total cost of N2.5million is also based on the telephone technology. I am in touch with my colleagues in this discipline so that we can begin research on hearing aids and cochlear

implants. One of this days a hearing aid should not cost more while a cochlear implant, N100,000 if we can develop our own technology.

POLICY STATEMENT:

From the foregoing statements of deafness and hardness of hearing the following policy is advocated.

Noise conservation:

I wish to make my contribution to the question of noise. Noise, they say, is civilisation. Man's increasing civilisation has been accomplished by an ever-increasing production of noise. This is true of Nigeria. Unfortunately, we do not have proper legislation controlling noise. Noise is made in factories, by generators, churches, mosques, Airplanes etc. There is noise everywhere. I doubt if anyone of us here has a normal acuity. The most affected people are factory workers. Many of them have worked for a long time in factories and are hard of hearing. Where earmuffs are issued, many Nigerian workers will not use them. The expression "I am used to the noise" is common. But when you think that you are used to the noise, your hearing is being damaged.

All workers in factories should have a pre employment test and subsequent tests at regular intervals to detect those whose hearing acuity is being shifted. There must be proper regulations against noise making. At the moment there is no law that regulates where generators must be sited or where churches and mosques must be sited.

Pre school hearing tests:

Children must have mandatory tests carried out on them before entering into the primary school. I need not elaborate further how the hearing is used to store knowledge and understanding. Impaired children can easily be monitored.

Yearly hearing evaluation:

Yearly hearing evaluation by all men and women above the age of thirty years is recommended. At the

moment, this is being done as part of health evaluation. Otorhinolaryngologists and audiologists provide this service. Every one should take this advantage. Why a yearly audiological evaluation?

1. Certain systemic diseases manifests very early by shift in hearing acuity by tinitus.
2. Dangerous diseases such as acoustic neuroma can easily be detected early.

A centre of excellence:

ENT practice is an instrument intensive one. I know only a few other specialities that depend so much on instrumentation. We cannot hope to equip every ORL centre in the country to the level of excellence but government with private initiative must combine to support such a centre such as the *National Ear Care Centre* which has been set up in our unit in Lagos recently with encouragement from the Federal Ministry of Health.

ACKNOWLEDGEMENT

I must first thank God for his mercies on me, I must thank those who laid a good foundation for me in surgery- Professor Adesola who made it possible for me to start a career in ENT, Professor E. Ade Elebute, for his encouragement. All the colleagues that I have worked with, Late Prof Omo-Dare and Jaja all made their impression on me. I wish it acknowledge all my colleagues in the department of surgery especially Mr. C. C. Nwawolo and Mr O.A. Somefun . Without any grudge they have borne the load of the clinical and teaching duties that should normally fall on me. I wish to acknowledge the various Residents that have passed through the ENT Unit all of whom have been pillars on which the unit was built.

The Secretary of the National Ear Care Centre Miss I. O. Falusi and Mrs M.A Odeyemi have toiled over the text of this lecture producing several copies over & over again. I acknowledge with gratitude a small financial contribution from Chief Osunkeye the Chairman NESTLE PLC, Ilupeju over five years ago when this inaugural lecture was first contemplated.

Finally I must thank members of my Family. I remember today my late parents Emmanuel Olaniwun Okeowo, a father who believed in strict upbringing for his children and Maria Onajoke Okeowo a mother in a million.

I wish to acknowledge Mr. Micheal Adebisi Okeowo my elder brother who led me at an early age to Magbon Alade where my life derived a lot of benefits.

I present to you my wife Dr (Mrs) Adeolu Adenainke Okeowo. It appeared a short time ago when I met her as a young Medical student in 1966. Between us we have become six in number.

My wife has been my pillar of strength and has been a very understanding woman. My lovely children are Adedapo, Adeola, Adeyinka and Babatunde. They are the joys of my life.

In conclusion, Mr. Vice Chancellor, sir -"What's in a name---? In the 24years between 1974 when I became the 1st Nigerian to hold an academic post in ORL, and today when there are over 80 otolaryngologists practising in the country, the speciality has gone a long way. The Lagos Unit can be proud of its modest contribution. Not again will anyone think that ENT means "*Ear, Nose & Tongue*" However when I use the word excellence, I do not mean that ORL in Nigeria has reached any peak. I mean that it has reached a stage when a reversal into any state lower than the present is not possible. This is a challenge to the residents and other emerging doctors in the speciality. Take the mottley of patients who seek succour from the Oto-rhino-laryngologists - the deaf and hard of hearing, problems in swallowing, problems in nasal breathing, problems of equilibrium, of loss of taste, of loss of smell, of speech, problems of snoring. Because all of these must be addressed, this is why this speciality is out of obscurity into excellence.

Mr. Vice Chancellor, sir, my tale is done. I thank you for your audience.