



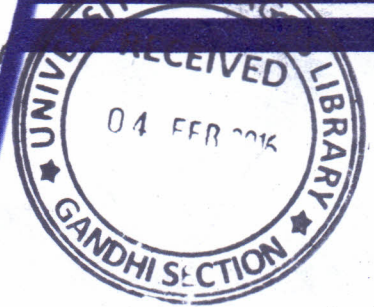
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TOPIC:

THAT OUR MOUTHS MAY NOT KILL US!
THE STORY OF ORAL CANCERS



By
PROFESSOR A. L. LADEINDE

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THAT OUR MOUTHS MAY NOT KILL US! THE STORY OF ORAL CANCERS

An Inaugural Lecture Delivered at the University of Lagos
Main Auditorium on Wednesday, 3rd of February, 2016

BY

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Distinguished Ladies and Gentlemen

PREAMBLE

I welcome you all to this inaugural lecture; I appreciate that you must have left some other important matters to attend this lecture.

I am immensely grateful to the Vice Chancellor for granting me the approval to stand before you today to deliver this lecture. The face and the teeth are the first image makers of human being, happiness; anger and love are first expressed by them. When the mouth opens, a lot of expectation and anxiety is immediately raised and from then, this determines the classification of the person.

She/he is soft spoken, sweet voice and loving or in the contrary harsh, toxic, unfriendly, etc. Projecting an insight into the persona though, may be deceptive of the person. It however gives a lasting first impression.

Biologic Cancer: These are cancers that develop from biological activities of cell essential for normal human

existence. While these biological cancers can have lethal outcomes, there are some other lethal non biological cancers.

Non-biologic: are non-physical but possess very damaging effects, with propagation similar to that of biological cancer (I shall discuss this later in this lecture).

The tongue has not been said to play a role in this image making business, but it is often blamed when passing judgments, e.g. “toxic, foul, uncouth etc.” I shall therefore dwell on the role the tongue will play, in ‘our mouth killing us’.

I plead in advance with the Vice Chancellor for pardon, that whatever I will say this afternoon, **“my mouth shall not kill me”**

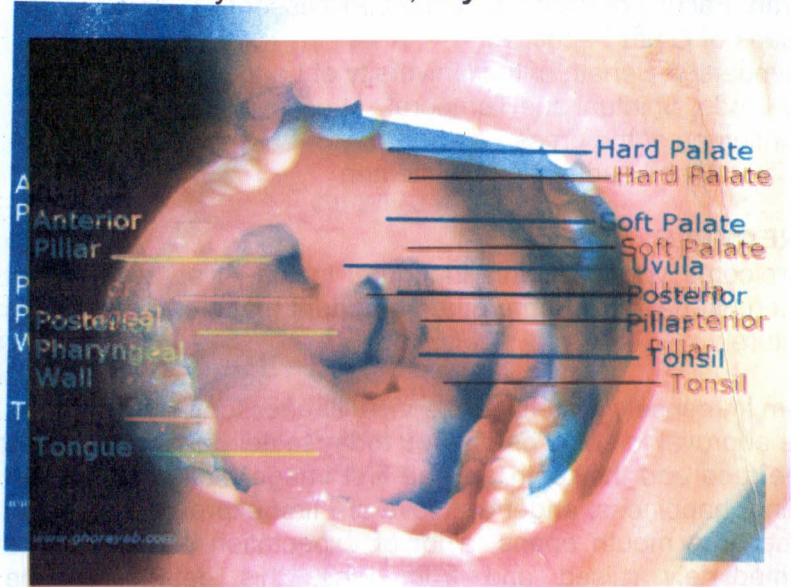


Fig. 1: The Oral Cavity

Introduction

What is Oral Cancer?

The earliest literature on cancer was found as recorded in the seven ancient Egyptian *papiri*, which were interpreted in the 19th century contained description of cancer from about 2500 BC to 1600BC.

Hippocrates from 460BC to 370BC described several forms of cancers with the Greek word *carcinus* (crab or crayfish), later translated to Latin by Celsius (ca250BC to ca50AD) to Cancer. Galen used the word *oncos* to refer to benign while restricting *carcinus* to malignant tumours and he later added the suffix *oma* (carcinoma).

It results from unregulated proliferation of cells, due to accumulation of some genetic modification (mutation) in a precursor cell. These "colonies" of "special" cells acquire the ability to develop self-propagating growth factors and recruitment of new blood supplies to feed it (angiogenic factor).

Tissue Rejuvenation: most parts of the body especially tissues are frequently subjected to frictional forces e.g. Oral cavity (to limit myself to my theme of concern). The functions of the oral cavity and its component tissues are all friction generating, resulting in loss of surface cells and replacement from a very actively proliferating layer or (basement layer) cells producing less mature precursor cells, which goes on to mature into native mature cells, well regulated and incapable of cancer transformation.

The basement cells at different levels of maturation are vulnerable to a lot of carcinogenic injuries to genes which may result in development of cancers from a single injured precursor cell to a clone consisting of many daughter cells that have accumulated altered gene (oncogenes) and ability to change behaviour and properties (mutation) constantly.

This acquired strength is required in development of resistance to clinical interventions. The resultant "survival of the fittest" results in a dominant cell type of the tumour.

Aetiological Factors

Very little is known of the causes of oral cancers, but some substance; environmental factors and some genes had been linked with the development of this condition.

Association have been established between environmental factors and aetiology of cancer, but few are strong enough to ascribe a cause and effect relationship e.g.

- Tobacco related products (especially cigarette).
- Alcohol.
- Poor oral hygiene,
- Faulty dental restoration
- Sharp teeth
- Ill-fitting dentures
- Diet and deficiency states secondary to sideropenic dysphagia & epithelial atrophy.
- Candida; - squamous metaplasia
- Several viruses e.g. Herpes simplex type 1(HSV-1), HIV, HPV (Human Papilloma viruses 16, 18 & 32).
- Irradiation.
- Ultra Violet (U.V.) light.
- Naturally occurring genetic defects, random spontaneous and genetic mutations associated with specific syndromes.

The aetiology of cancer is also related to:

- Types of carcinogen.
- Dose.
- Frequency.
- Application.
- Synergy or additive actions of two or more carcinogens.
- Susceptibility of host.
- Length of exposure to carcinogen.

Carcinogen Related to Cigarette Smoking: Benzopyrene and benzanthracene (*Robert E. Marx, Diane Stern*).

Alcohol: the alcohol itself or the nitrosamine found in many alcohol products damage the DNA by forcing electrophilic intermediates similar to that caused by ionising radiation by pulling electrons off the nucleotides within the DNA, thus damaging base pairs and base sequences or become bound to the DNA.

How does Oral Cancer Present

It usually presents as an apparent innocuous ulcer or swelling that might be overlooked, small cracks in the tongue, cold sores, non-healing ulcers or discolouration.

It may present as a new area of hardened or firm area in a normally succulent part of the oral cavity. In the maxilla and other natural cavities, it may be difficult to discover early.

Different Types of Tumours/Sites and their Behaviours in Oral and Maxillofacial Surgery (OMFS) Region

The different types of cancers affecting the oral cavity are in two basic forms; the type originating from the surface covering cells (carcinoma). This is often categorised according to the rate of cell divisions seen by the histopathologist, which is expected to be predictive of the expected behaviour of the carcinoma i.e. well differentiated, moderately differentiated and poorly differentiated and anaplastic. These terminologies are referring to the extent to which the cells resemble the normal tissues. However there are often many exemptions to the rule, to the frustration of the surgeon who have based the extent of surgery and predicted outcome on the reports and the patient is so counselled. Tumour that is expected to show gentle behaviour, manifest aggressive presentation.

Those that take origin from deeper tissues (Sarcomas) - soft tissue and osteogenic (Bone) often occur in younger age groups. This is less common than carcinoma (6%) (*Ogunlewe, Ajayi et al*).

Method of Growth and Propagations

The ability of a tumour to travel beyond its locality to other sites farther away from its location and the surrounding sites is an indication of its aggressiveness and likelihood to have fatal consequence; it is therefore described as malignant.

To acquire such capacity it must be able to breakdown the body's innate defences, survive in transit and re-establish itself in the new location. It should be able to take over the sources of nutrition to itself, thereby denying the host tissue.

Natural Defences against Cancer Development

The DNA damages are repaired by specific DNA polymerase enzymes, the rate of damage must therefore exceed the cell DNA repair capability, leading to permanent damage. If the damage is severe enough, the cell dies, or is severely weakened that it cannot transfer the altered gene to the daughter cells, or it is lost in normal slough of mucosa or skin cells, thus never able to form a clone or colony of cancer cells. It is very difficult for a cancer cell to acquire all the required ability to accumulate the gene mutations, ability to transfer it to daughter cell.

If exposed to further carcinogen, the damaged cell can pick up ability to fight the enzyme repairing the DNA. Once cancer does develop, it represents a cell population with unstable genome, undergoing further power to initiate further damaging tools to enable it invade surrounding tissues and spread to other places.

Ability to Spread (metastasis)

The power of oral cancer to spread is predicated on its ability to break through the lining of the basement membrane and walls of lymphatic and blood vessels, enter the vessels, survive in the blood and lymph in the vessels and overcome many defence systems e.g. natural killer cells and immune surveillance cells.

It must be able to escape from the vessels into the new tissue environment; it must acquire a similar enzyme that was used to enter the vessels.

It must be able to implant in the new environment and establish a self-sustaining colony, this requires some special factors e.g. angiogenic and many growth factors to be able to recruit new blood supply, promote replication and prevent the development of tissues of the host.

It must also activate osteoclasts to resorb bone. It is therefore not so easy for the cancer cells to spread; some authors put the success rate of attempt at metastasis to about

1%. Thus only few histological types spread early, delay treatment however encourages spread.

How Oral Cancer Kills

- i) Tumour load is the most common, weight loss, anaemia and weakness caused by the tumour cells denying the normal body cells of essential nutrients and production of down-regulating (anti-angiogenic) enzymes that prevents host cells from utilising nutrients and efficient metabolism.
- ii) Infection; anaemia, hypoproteinaemia and malnutrition due to tumour load resulting in septicaemia
- iii) Inefficient function of the oral cavity due to symptom directly related to the lesion e.g. pain, dysphagia, loss of taste sensation and mastication.
- iv) Co-existing other disease conditions, related to age, history of smoking, alcohol-use and related issues of cardiovascular and pulmonary disease.
- v) Para-neoplastic syndrome; caused by the effects of enzymes, growth factors and other material secreted by the cancer cells.

Cultural Perception and Religious Intervention

There are different socio-cultural beliefs and taboos associated with the cause, progression and prognosis of oral cancers.

The Hausa cultural belief is that, the disease abhors any form of needle insertion *alura*. Once that has taken place the condition will become incurable and surely will lead to death. This widely accepted concept contributed to almost universal late presentation to the health facility in the locality.

The Yoruba cultural belief is that it is an affliction consequent to a diabolical attack from an aggrieved *powerful individual* or group. The antidote to which is only presenting prescribed offerings or sacrifices.

The other Nigerian socio-cultural entities also have their unique views and associated **taboos**.

The roles of the "all knowing" traditional healers are also not helpful in prevention of delayed or late presentations of these conditions. While one is not casting aspersions on traditional healers, who I firmly believe have a role in the health care delivery system in the country, a lot of sensitisation and awareness interactions, need to be done to achieve reorientation of some of these traditional healers to appreciate the need to allow their patients seek orthodox medical consultation.

Another reason for late presentation is the unquestionable belief in *faith healers*, brandishing different authorities and powers to heal virtually any disease conditions miraculously, while also not questioning their authorities, it would have been appropriate if they allow the powers to aid early surgical intervention. After all one of them have sent a patient back to me to obtain a formal referral letter to his outfit before the miracle work can commence, of course my response is predictable.

Poverty is also attributed to the patients' recourse to the aforementioned alternatives, due to high cost of investigation, unsympathetic hospital environment, then finally prohibitive cost of surgery with non-inclusion in National Health insurance Scheme(NHIS) and when listed in NHIS, it is often outside the scope of the 'insurance cover'. She/he is left with no option than to look up to his faith to achieve succour.

Modalities of Management, Surgery (our major concern)

Early diagnosis and prompt surgical intervention is the most ideal mode of management with excellent prognostic outcome.

However multiple factors militate against this ideal, this includes:

- Lack of faith in our health institution
- Distance to health facility
- Education/awareness
- Funding
- Traditional/spiritual beliefs
- Charlatans masquerading as either orthodox medical personnel/traditional healers.

- Procrastination
- Fear and apprehension

When early management is instituted the consequent tissue deficiency is minimised and aesthetically more acceptable than delayed management.

In delayed but operable situation, the condition is operable but the resultant tissue loss creates a major challenge of reconstruction to a near premorbid aesthetic form. This level of presentation is the commonest in our country with some regional variation in degree. The economic angle to it is also that it requires more resources in man and materials outlay to accomplish a satisfactory outcome.

At the inoperable stage, the lesion is more advance in its destructive effect on the affected part of the body, not only in size but its spread to surrounding vital tissue, distant sites or of such magnitude that makes surgical excision difficult to accomplish, without creating an unpleasant, unsatisfactory and totally unacceptable appearance, functionally impossible return to a near premorbid state.

The ability to rationally determine the parameters for classification into various stages, calls for the surgeon's ability to synthesise his clinical/surgical knowledge, experience and expertise. He must balance these with the man and material resources available to him/her in the best interest of the patient. Heroism and grand illusions have no place in ethical decision making and patient management.

Despite this inoperable state the patient is not without duty of care that will be achieved by limiting the effect of disease progression, relieve symptoms with the goal of tolerable and acceptable post morbid condition. This stage involves palliative procedures including debulking, chemotherapy and/or radiotherapy, in conjunction with the oncologist and other specialists necessary to give the patient best amount of care for acceptable Quality of Life (QoL).

The Human/Emotional Being

The appreciation of every patient as a complex composite of a physical entity that is presented to the surgeon with a complaint, as an emotional and spiritual being is germane to full understanding of the essential need and expectation of that entity, avoiding the temptation of our knowledge prognostic eagerness to achieve our best for him/her. I will illustrate this with two examples in one in which I was able to succeed in managing the patient as a total human being.

- i) During the Professorial ward round at the ABUTH (1999) Late Professor E.O. Adekeye was upset with me as the Senior Registrar for unwarranted delay of a scheduled procedure on Mallam A (to mask his real name) and I was given a deadline of 3days to sort out the patient. On my usual evening ward round I went to prepare his mind for surgery in 2days time, the following ensued: (I translated)

Mallam: *Likita, after this operation, what shall I be eating?*

Me: Your normal regular food.

Mallam: *No, I want you to tell me how to get the money, since it is this swelling you want to remove that I use to beg at the mosque every day especially after Jumat prayers on Fridays.*

Realising the obstacle I was going to face, I asked for the Nurses opinion on the matter, not until then did I realise my ignorance of failing to discuss outcome and life after the operation with the Mallam.

We agreed to postpone the operation, allowing him out of the hospital/ward to go for begging for 2 wks. Which I had to communicate to Prof. Adekeye, I was also surprised that he not only didn't object to our plan, he was aware of the patient's expectations. He also gave the patient a letter of request for assistance, *To Whom It May Concern*. We subsequently removed the "precious" tumour. We were all happy.

- ii) The second case was a dismal failure and tragedy. We prepared an elderly patient brought to the hospital by her children. By all indications they were a close knit family, with evidence that they had Mama's consent and I felt confident that they were representatives of Mama's views. We were wrong, our consenting procedures were faulty.

The surgery was adjudged successful, the Family was happy and we were applauded for doing a heroic surgery. 2days after she picked up, a mirror and was surprisingly dejected, refused to speak and stopped feeding. All attempts to get her to go into communication weren't successful. She was supplied nutrient through various methods including Hyperalimentation.

She was discharged at the request of the children and on the opinion that she will recuperate better at home. She remained in the mood she left hospital with and refused to eat. She died soon after.

The family were consoling me rather than me consoling them. I was sober and full of regret that I did not ask for her consent independently. On that backdrop, I could appreciate the importance of the MEDU/CMUL supported courses on Ethics. I am deeply grateful for the efforts to professionalise Medical ethics programmes.

Assessment of Success of Surgical Procedure

The guideline for evaluation of outcome of surgery has not attracted a thorough and universally accepted discussion to lay out a tool for evaluation of surgical operations. This has left the surgeon and the patient with divergent expectation.

Surgeons' Factor

The surgeon's evaluation of a procedure is assessed as being successful when:

- i) The tumour is removed completely without residuals both clinically visible and through frozen section;
- ii) There is minimal or no damage to structures or organs;

- ii) Post-operative recovery is possible with bearable loss of function;
- iii) The patients quality of life is not adversely altered after;
- iv) Surgical margin is adequate to prevent recurrence.

Patients' Factor

The patient expects the surgeon to remove the problem by whatever means as long as

- i) He/she is assured that the procedure is safe;
- ii) The tumour is removed;
- iii) He/she is better than before the operation, in terms of function, aesthetics;
- iv) Can be returned to almost or better condition before the development of the tumour.

Post-operative Complex Complications and Concern

A complication is defined as a morbid process or event occurring during a disease, which is not an essential part of the disease although it may result from it or from independent causes (*Stedman's Medical Dictionary 25th Edition*). These other causes could include procedures done, with the aim of achieving a cure or remission of the disease e.g. surgical intervention.

These complications are usually unpredictable and as such are only expressed to the patient as a possibility; however in our environment it forms a major reason prolonging the patient's stay on admission.

A worrisome one is the nosocomial (hospital acquired) infection aided by the pre-existing effect of tumour load; compromised immune system contributes to the devastating effects of infection. The advent of more effective new generation antibiotic has helped in enhancing our ability to overcome this problem.

Excessive scar formation (keloid) in the patient prone to developing it could lead to unsatisfactory outcome and demand for further intervention which may result in greater scar formation.

In conjunction with my colleagues we studied the most optimal approach to managing this condition with the rationale of determining the appropriate management modality, quantity of *Prenisolone* (Aluko-Olokun, 2014; 2015). We also evaluated the efficacy or otherwise of steroid *vis-à-vis* surgery in managing this complex complication prominent among “black” people.



Fig. 2: A Patient with Excessive Scar Formation (Keloid)

Before Surgery

After Surgery

My Experience

The Maxillofacial Surgery Unit of the Ahmadu Bello University Teaching Hospital, Kaduna gave me the exposure to the complexities of the specialty. I gained experience in managing gigantic gross tumours and the manual dexterity required for delicate reconstructive procedures. Some of the equipment I trained with was only available in the centre e.g. the cryotherapy, courtesy the multi-national funding partners who established the centre to manage war injuries consequent to Nigerian thirty months unfortunate civil war. It became the training outpost for the Royal College of surgeons and others.

I developed dislike for the outcome of the forehead flaps to reconstruct the facial defect because of the aesthetically unpleasing outcome. It is suitable for the Caucasian hair-style with overflows to cover the fore-head, while with the African

hair we can't say the same. I never practiced it after then; other local and regional flaps proved to be vital skills that made my experience very exciting and fulfilling.

It could be said that I "cut my teeth", in leading a major surgical procedure shortly on arrival from ABUTH, with the kind permission of Prof. Akinwande who was then the only consultant in the department, following the "Saudi cyclone" that led to major brain drain in the 1980s/1990s. We booked a patient Miss. T, with histological diagnosis of *anaplastic carcinoma* for debulking procedure. All the main participants were senior registrars (Surgeons and Anaesthetists) I am glad to say that the partnership between Ladeinde & Ogunlewe is sustained till date and have outgrown the office space to unite our families.



Fig. 3 & 4: A Patient before Treatment A Patient after Treatment

It stands out today as the most challenging procedure I have carried out, spanning over 14 hours. To the glory of God she exceeded our expectation of survival for such histologic diagnosis and amount of "tumour tissue spillage" experienced intra-operatively. It was therefore published after 9-Years survival, it has attracted request for copies and generate international interest and was presented at Kyoto Conference of the International Association of Oral and Maxillofacial Surgeons (IAOMS).

LADEINDE, A. L., Akinwande, J. A., Ogunlewe, M. O., Odukoya, O. O. & Taiwo, E.O. (2002).

In the course of my career as a clinician and academic, I have been privileged to work with excellent colleagues in research and performance of various procedures spanning the full scope of maxillofacial surgery from traumatology, surgical oncology, orthognatic and reconstructive surgery. Leading to publications of scholarly articles in international, national and peer review academic Journals, attracting request for copies from all over the world and cited by various authors.

The challenges of what to do with the residual defect following tumour ablation, led to our going to other sites to harvest tissues to replace the tissue removed. We have used the rib to reconstruct the diseased zygomatic arch.



**Fig. 5 & 6: A Patient with a Case of Zygomatic Arch Reconstruction.
Before Reconstruction After Reconstruction**

(Zygomatic Arch Reconstruction with Autogenous Rib Graft. Ladeinde, et. al) Published in the National Postgraduate Medical Journal of Nigeria.

More commonly we harvested the Iliac crest of the pelvic bone (hip-bone) to reconstruct the resected mandible (lower Jaw) with high success rate over the years and we have trained many generations of Maxillofacial Surgeons who have become highly skilful in it.

A major leap was taken in the field of reconstructive surgery with the singular commitment and influence of our esteemed teacher Late Professor A.L. Nwoku of blessed memory; the International Association of Oral and Maxillofacial Surgeons (IOAMS) through its Education Foundation selected Lagos University Teaching Hospital as a centre for Micro-vascular transfer surgery training, coordinated by Professor M.O. Ogunlewe.

Soft tissue cancers of the lips, tongue and floor of the mouth pose a lot of challenges to the surgeon and the patient on the extent of surgery that will be aesthetically acceptable without compromising the possibility of cure. The tongue and the floor of the mouth it rests on have been very frustrating in terms of successful management for reasons earlier listed.

Satisfactory?

In the course of my career as an Oral and Maxillofacial Surgeon, I derived a great deal of satisfaction in the quality of care I was able to give my patients, especially the non-ablative surgery cases, the road traffic accident victim and other traumatic episodes.

I have always been disturbed with the mental agitation of what to do with defect resulting from tumour surgeries.

That notwithstanding, I am still greatly worried about the inability of our scientific world to develop an artificial bone that can osseointegrate with the natural bone and be functional. I believe we shall through collaborative research achieve this goal.

In 1992, I experimented with the use of well cured methyl methacrylate polymerised with the monomer of the same name. It however failed to meet my expectation of being tissue compatible, we therefore returned to autogenous bone with the attendant creation of another morbidity site.

How to Prevent our Mouth from Killing us

Oral Hygiene

It is very important to take adequate care of the mouth being our multifunctional machine preparing the body as a whole for all the various functions.

Tooth brushing twice daily is recommended, as a result of the mechanical activity, frictional and micro traumatic events occurring. Frequent Oral hygiene manoeuvre is mandatory to detect all the wears and abnormalities.

Careful Examination and Observation

Self-examination and observation of any changes in the shape, texture, colour, form, bleeding from the gums, tongue floor of the mouth and lips after tooth brushing will help in detection and early presentation and management.

Regular Dental Check-ups

This is also known as Routine Dental check-up; a component of mandatory medical check-up. This will allow the Dentist to evaluate all the changes that might have been individually identified. Here requisite investigations will be done and appropriate management planned.

Oral Cancer Screening

Community wide screening for early signs and known precancerous lesions akin to the widely popularised screening for breast and cervical cancers, sounds promising but the logistics and financial implication may be discouraging for our health system managers.

Advocacy for alternative sources of funding from the Non-governmental agencies may offer a window in achieving this goal.

Early Reporting of Changes in the Normal Colour, etc.

Early reporting, investigation and management of oral cancers present the panacea for cure and control of this condition. The major reason that accounted for the poor outcome of our cases

compared to the outcome of our European and American colleagues is the early presentation and management, when the lesion is still small in size, localised and can easily excised.

Avoidance of Risk Factors

Conscious efforts must be made to avoid cigarette smoking (all forms of tobacco) and alcohol use.

Use the Oral cavity for only what Nature intended it for, thus avoiding transfer of pathogens, e.g. HPV viruses strange to it in the acts of cunnilingus and fellatio.

Simple Hand Wash Practices

This was once popular in Primary classes in Lagos some years past, but faded away until the unfortunate Ebola epidemic in the West African sub region. The impact of hand to mouth transfer of pathogens was thoroughly given wide spread circulation, but all the stations for hand washing and sanitisers had totally disappeared or are unsustainable.

Agricultural produce also carry soil pathogen which if it breaks through the oral mucosa could present serious conditions mimicking oro-facial cancer, e.g. the gentleman in this pic is a farmer in a rural area of Kano state who presented as shown, all investigations was negative of malignancy



Fig. 7 & 8: A Patient with Serious Conditions Mimicking Oro-facial Cancer Before Treatment After Treatment

With just 10 days course of Anti- fungal medications, the swellings regressed so much that the gentle man left the

hospital satisfied with as in this picture. At this juncture I must appreciate the determination and doggedness of the Aminu Kano Teaching Hospital pathologist (Drs. Mallami, Atonda and Prof. Mohammed) in unravelling the diagnosis. The Hospital social workers had to search the villages for him to continue his treatment.

Mr. Vice Chancellor Sir, permit me to concentrate the remaining part of the lecture to discuss the lesions of the tongue.

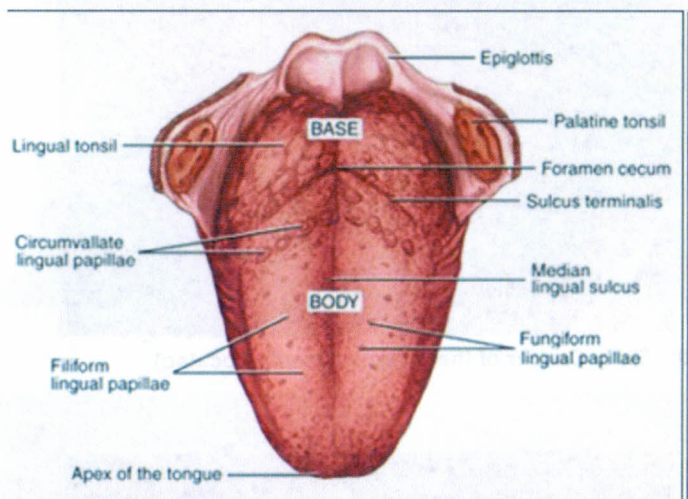


Fig. 9: The Human Tongue

The tongue is composed of a bundle of smooth muscles, covered by specialised mucosa, the dorsum ("top") surface is thick and adapted to withstand all the adversities that may come with its function e.g. taste sensation, movement of food, friction, hot/cold food and various spices.

The tongue consists of two parts; the oral tongue and the base of (pharyngeal) tongue. I am concentrating on the oral tongue in this lecture.

Carcinoma (Cancer) of the tongue makes up 75% of all malignancies affecting the tongue and it is the most common; making up to 25% to 40% of all intra oral malignancies.

most commonly affected is the lateral border (side) 45%. It may appear as reddish-white discoloration or only white (Leukoplakia).

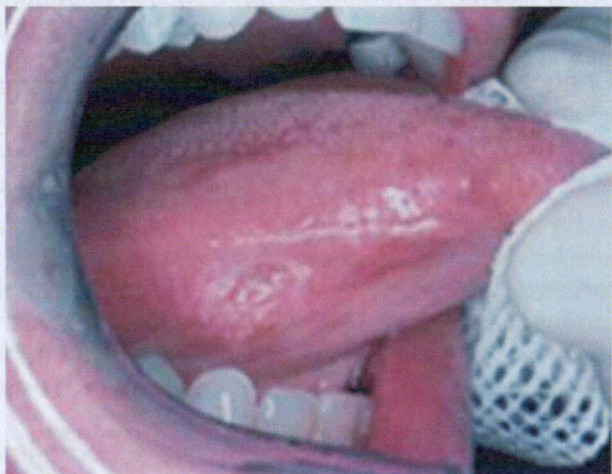


Fig. 10: Early Cancer of the Tongue (Deeply Located)



Fig. 11: Early Ulcerative Type

It may present as exophytic or as ulceration. Some are indurated (firm), suggesting a deeper located tumour. The ulcers have thickened and elevated margins.



Fig. 12: Lateral (Side) Ulcerative Lesion

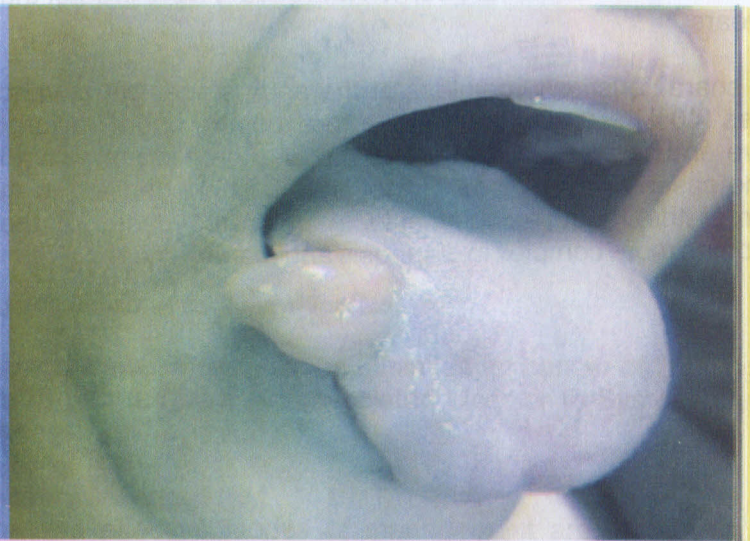


Fig. 13 Cancer of the Tongue Exophytic Type



Fig. 14: Lateral (side) Lesion Extending to the Ventral Surface & Floor of the Mouth

It is commoner in men than women and usually ages greater than 50 years

It is characteristically painless at the early stage, but advanced cases (40%) are very painful due to exposure and invasion of nerve endings. At this stage there is also drooling of saliva in some cases and limitation of movement. The extension to the floor of the mouth is inevitable in untreated cases; it then becomes more complex in diagnosis and management.

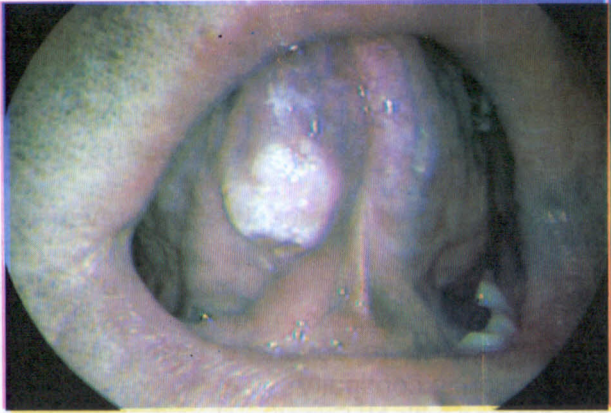


Fig. 15: Cancer of Tongue on Ventral Surface

The anatomy and lymphatic drainage of the base of the tongue makes prognosis (outcome) more sinister.

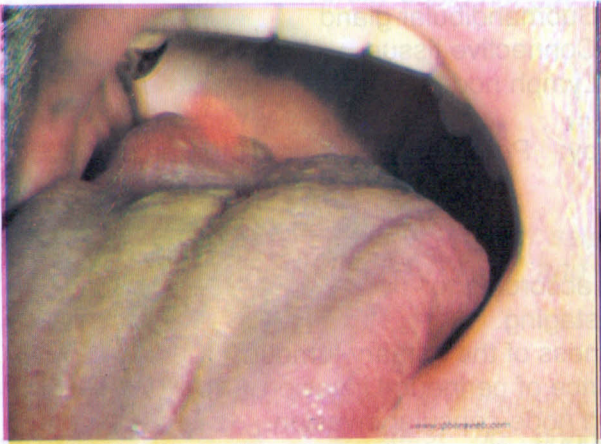


Fig. 16: Cancer of the Base of Tongue

Few conditions that might be mistaken for cancer of the tongue are: i) oral tuberculosis associated ulcer or ii) Systemic fungi disease.

Mode of Management

The two effective modes of management are: i) Surgery, ii) Radiation.

The choice of mode of treatment is based on consideration of possible side effects, morbidity, and extent of tissue involvement, induration, location and co-morbid conditions.

Surgery: Is the preferred modality and could be preceded or followed by radiotherapy.

- Tumour is excised with at least 1.5cm preventive safety margin.
- Need for neck dissection is based on clinical staging $T^1N^0M^0$ and ASA risk assessment
- For $T^2N^0M^0$ and more advanced cases of prophylactic neck dissection in continuity
- For any grading with N^1 Functional neck dissection.
- For any grading of N^2 or N^3 Radical neck
- Histologic grading and relationship to other structures e.g. perineural and Perivascular.
- Relationship to floor of the mouth and its content; i.e.
 - i) Submandibular gland
 - ii) Connective tissue
 - iii) Lymph nodes

Radiotherapy: Post operative radiotherapy: 5000Cgy to 6000Cgy.

Prognosis

This varies according to:-

- i) TNM staging.
- ii) Thickness of the primary tumour.
- iii) Evidence of perineural invasion.
- iv) Lymph node capsular invasion.
- v) Intra lymphatic emboli.

Adjusted 5yr. survival rate: 40% to 60%.

Follow up is very critical: - Yearly including chest radiograph.

- Quarterly for 2years.
- Biannually for 5years.

Non-biologic Oral Cancer

Mr. Vice Chancellor Sir, I have delved into matters concerning biological cancers, permit me to spend some minutes on the non-biologic type.

It is more endemic in our society and at different socioeconomic levels; the colouration is only altered by the level of social sophistication. The mechanism of initiation, growth and propagation are very similar.

It goes this way:-

Initiation Phase:

Have you heard?

What is it?

That the Vice Chancellor has bought a helicopter?

What !!! no wonder, the University could not pay our Salary on time!

Next Level

He e e!!! Wonders shall never cease!

What has happened?

Are you not in this Unilag?

*The V.C. lied that there is no fund to pay our salaries, but he could buy **two** helicopters; one for himself and one for his wife?*

Next Level

ASUU, SSANU, NASU etc. entered the discussion:

WHAT we are saying; V.C. must go ooooo! ALUTA CONTINUA!!!

Unilag main gate and other gates locked.

This type of cancer fortunately has only one recipe for cure: **Freedom of information**. This recipe had been discovered a very long time ago. The Nigerian press pushed hard for an Act of National Assembly to grant us this very important instrument (**Freedom of Information Act 2011**) to save us from non-biologic oral cancer. It was passed at both Houses of the National Assembly on 20th May 2011 and was accented to by

the Former President Jonathan on 28th May 2011. Unfortunately we lost the steam to utilise the trophy won.

Collectively gossips, backbiting and rumour mongering are products of one instrument; the tongue.

Let us see what the ancient books and prescriptions say. The Prophet (pbuh) guaranteed Paradise for one who guards his/her mouth. He is reported to have said:

"Whoever gives me surety to safeguard what is between his jaws and what is between his legs, I guarantee for him (entrance into) Paradise." [What is between one's jaws is the Lisan (tongue); and what is between the legs is the Farj (private parts)]."

In one Hadith, Allah's Messenger (pbuh) took hold of his tongue and then said,

"Keep this under control." When the Sahaba asked, "Will we be called to account for what we say?" He replied, "Won't the people be thrown face down into Hell on account of the produce of their tongues." (Related by Tirmidhi).

At the last day: the tongue will fall silent and unable to talk, while the other parts of the body shall testify against the tongue, on what he caused them to do when alive. (Prof. Hassan Isah).

The Holy Bible also said:-

THE HOLY BIBLE: KJV

James 3: 5 - 8

- 5 - "Even the tongue is a little member and boasts great things. See how great a forest a little fire kindles!
- 6 - And the tongue is a fire, a world of iniquity. The tongue is so set among our members that it defiles the whole body, and set on fire the course of nature; and set itself on fire by hell.
- 7 - For every kind of beast and bird, of reptiles and creatures of the sea, is tamed and has been tamed by mankind
- 8 - But no man can tame the tongue. It is an unruly evil, full of deadly poison."

In verse 2:

- 2 - **In many things we offend all. If any man offends not in word, the same is a perfect man and able to bridle the whole body.**

Contributions to Knowledge

Mr. Vice Chancellor Sir, I have in many folds reproduced myself in the system. I have supervised twenty (20) Fellowship dissertations, most of whom are holding senior academic positions in various universities in the country. In the University of Lagos two of them are in professorial positions, I am very delighted to show-case Associate Professor W.L. Adeyemo and Dr. O.M. Gbotolorun (both currently being processed for the Full Professor and Associate Professor respectively) as the first two Postgraduate products. They are followed closely by Dr. James, a Senior Lecturer.

Others are Lecturers 1/Senior lecturers and Consultant Surgeons in various institutions i.e. University of Benin, Bayero University Kano, University of Jos. Others are The National Hospital Abuja, Federal Medical centres in Umuahia, Asaba, Nigerian Navy Reference Hospital, Nigerian Army Medical Corp., General Hospital Lagos, Central Hospital Warri and Lagos State University Teaching Hospital. Some have migrated to United States of America, Kingdom of Saudi Arabia and United Kingdom.

I have also contributed to the training of numerous other surgeons/academics without supervision of their dissertations that are also holding senior positions in Universities and various health institutions.

My positions as Faculty Secretary and Chairman of the Faculty of Dental Surgery, National Postgraduate Medical college of Nigeria (2001-2012) gave me unique opportunity to work with very enthusiastic and highly cerebral colleagues to refocus the training curriculum and modernise the modes of evaluation of knowledge, research and skill, at various levels.

I have also had the opportunity to contribute actively to the development and harmonisation of training curricular for Dentistry at Undergraduate and postgraduate levels, under the auspices of the West African Health Organisation (WAHO) an organ of the Economic Committee of West African States (ECOWAS).

Publication

Mr. Vice Chancellor Sir, my colleagues and I, embarked on diverse research efforts that attracted interest and publications in international and National journals, it will be superfluous to enumerate them in this lecture, permit me therefore to touch on a few.

We evaluated 3337 lesions of the oral cavity in 2005, we found 319 (9.6%) were related to tooth forming tissues (Odontogenic tumours) of which only 3.4% were malignant, in contrast to 0.0% to 1.6% earlier reported from other parts of world. This article had been cited severally by other authors from all over the globe and numerous requested for copies. *Ladeinde, Ajayi, Ogunlewe et al.*³

In a review of histologically diagnosed orofacial tumours, 18% was malignant of which Epithelial tumour was 69% (predominantly squamous cell 44%), 47% Sarcoma (Osteogenic 32%), 13% Lymphoma.

In a multidisciplinary study on malignant orofacial neoplasms in Lagos, squamous cell carcinoma was predominant 42.8% and in males at a ratio of 1.65: 1

Table 1: Distribution of SCCA Lesion

Distribution of SCCA Lesions	
Site	Number (%)
Maxillary antrium	70 (36.7)
Mandibular gingiva/alveolus	14 (23.0)
Tongue	23 (12.0)
Palate/Maxillary gingival	23 (12.0)
Cheek	10 (5.2)
Floor of mouth	9 (4.7)
Oropharynx	7 (2.1)
Lip	4(2.1)
Not specified	1 (0.5)

Table 2: Distribution of Glandular Carcinomas

Distribution of Glandular Carcinomas	
Site	Number (%)
Parotid	34 (28.6)
Palate	31 26.1)
Maxillary antrum	30 (25.2)
Submandibular gland	10 (8.4)
Mandible	6 (5.0)
Lip	6 (0.5)
Cheek	2 (1.7)

Arotiba, Ladeinde

Ameloblastoma is the most common tumour a Maxillofacial Surgeon will have to manage; we therefore attempted to determine the sites on the Jaws affected, we analysed 207 diagnosed cases seen in our department between 1980 and 2003. 4.35% was malignant, most affected site were the posterior mandible and maxilla. This pattern is in agreement with other studies internationally only differing in duration before presentation.

The anterior segments of mandible which forms only 18.4% is more challenging reconstruct and rehabilitate.

Table 3: Site Distribution of the Tumours

Site Distribution of the Tumours		
Site	Number	%
Anterior		
Mandible	38	18.4
Maxilla	3	1.4
Posterior		
Mandible	119	57.5
Maxilla	10	4.8
Anterior / Posterior		
Mandible	13	6.3
Maxilla	-	-
Ramus	2	1.0
Not specified		
Mandible	20	6.3
Maxilla	2	1.0

Ladeinde, Ogunlewe 2007

We also worked on Salivary glands to evaluate the incidence of tumours affecting the gland over a period of 15 years. The tumours were reclassified using the WHO 1991 Classification. 63.3% of salivary gland tumours were found in minor glands all over the oral cavity and pharynx (with palate accounting for 72.4% and cheek 11.8%).

Table 4: Site Distribution of Salivary Gland Tumours

Site Distribution of Salivary Gland Tumours	
Site	Number (%)
Major	42 (35)
Parotid gland	24 (20)
Submandibular gland	17 (14.2)
Sublingual	1 (0.8)
Minor	76 (63.3)
Palate	55 (45.8)
Cheek	9 (7.5)
Lip	5 (4.2)
Other sites	7 (5.8)
Unspecified	2 (1.7)
Total	120 (100)

While 72.5% occur within the ages of 21-60years. 60.8% were malignant. In the minor glands group alone the malignancy is 68.4%. *Ladeinde, Adeyemo et al., 2007*

Contribution to Country's Manpower in my Specialty

I had a unique invitation to visit the ancient city of Kano in the year 2001, during my annual vacation, from a gentle man I had never met physically but only on the pages of newspapers, I hesitated because I was worried about being caught violating some aspects of the just implemented *Sharia* law. Dr. S.S. Walli (Now Professor Walli) was formally Physician to the Head of State and then Chief Medical Director to the new Aminu Kano Teaching Hospital, he assured me of my safety with some provisos.

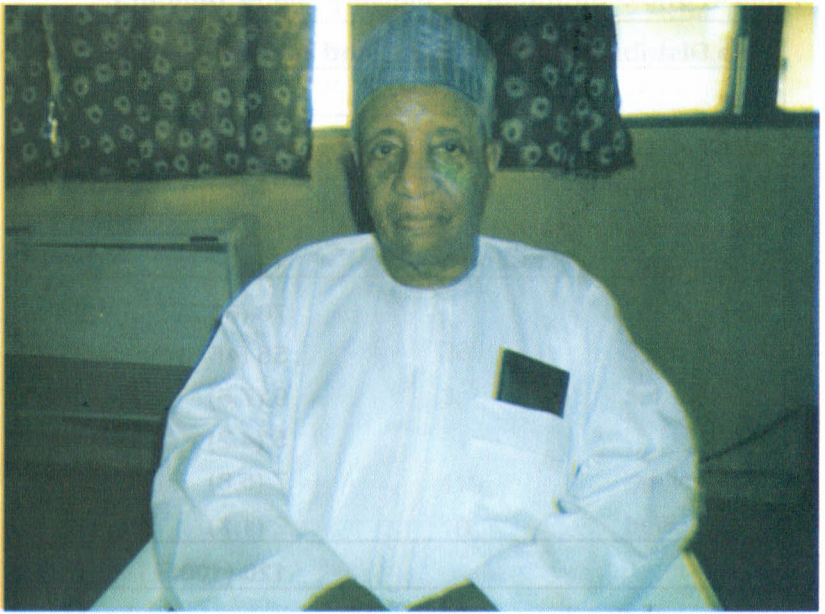


Fig. 17: Professor S. S. Walli

This encounter later became what I considered my most important opportunity to impact on my profession and Dental manpower development in the country. The distribution of doctor/dentist in the country was dangerously skewed to the southern Nigeria, especially south west.

Table 5: Distribution of Dentists (by States) in Nigeria

Distribution of Dentists (by States) in Nigeria			
Name of State	Population (millions)	Number of Doctors	Number of Dentists
Abia	2.83	1173	17
Adamawa	3.17	245	0
Akwa Ibom	3.92	492	5
Anambra	4.18	1690	42
Bauchi	4.68	247	7
Bayelsa	1.7	135	4
Benue	4.22	486	14
Borno	4.15	590	15
Cross River	2.89	819	8
Delta	4.1	1274	84
Ebonyi	2.17	323	5
Edo	3.22	2129	195
Ekiti	2.38	335	22
Enugu	3.26	2239	44
FCT	1.41	1006	50
Gombe	2.53	159	6
Imo	3.93	1312	29
Jigawa	4.35	90	1
Kaduna	6.07	1501	59
Kano	9.38	954	33
Kastina	5.8	189	2
Kebbi	3.24	106	1
Kogi	3.28	345	6
Kwara	2.37	1174	22
Lagos	9.01	11971	886
Nassarawa	1.86	136	6
Niger	3.95	388	18
Ogun	3.73	1224	58
Ondo	3.44	813	43
Osun	3.42	1256	96
Oyo	5.59	2669	202
Plateau	3.18	1006	30
Rivers	5.18	1829	46
Sokoto	3.7	410	15
Taraba	2.3	123	3
Yobe	2.43	92	3
Zamfara	3.26	88	1
	140.28	41018	2078

Source: Akinosi (2012)

Prior to this (2005) the accredited dental manpower training institutions in the country were all located in the old western region, the University of Nigeria made comatose efforts, University of Port Harcourt and University of Maiduguri started Dentistry programmes in recent years, thus leaving the North

west and north central geopolitical zones of Nigeria as the only two without any dental manpower training institutions.

In collaboration with my friend Prof. Adebola (then Dr. Adebola) we came up with the idea to start a phased high level Dental manpower development plan for the Hospital and geopolitical zone, starting with the House-manship training, then to mono speciality Residency training in Oral and Maxillofacial Surgery, with the unique scheme of inviting specialist from other Teaching Hospitals/Universities to Kano to make up for the deficient specialist in other mandatory areas of specialisation in the Dental Surgery Residency programme.

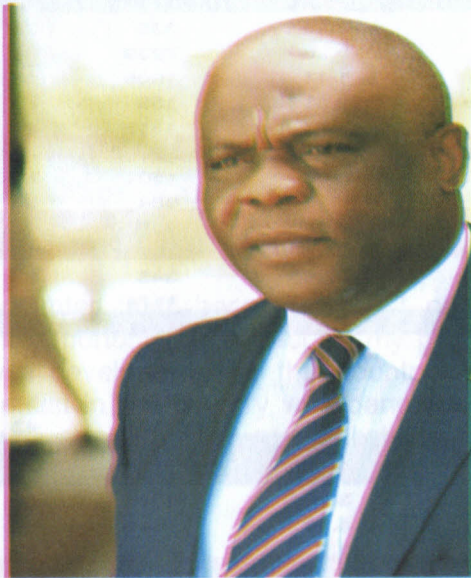


Fig. 18: Professor R. A. Adebola

This experiment worked excellently well, producing five successful candidates in the final Fellowship examinations of the National Postgraduate Medical College and West African College of Surgeons within a period of six years.

Mr. Vice Chancellor Sir, I am most grateful to the University of Lagos for granting my application to for Sabbatical leave in

2005/2006 Academic session, which gave me ample time to further develop this pet project.

With tremendous support from The Chief Medical Director of AKTH (Dr. Isah Dutse) and the V.C. of Bayero University (Professor Atahiru Jega), they were able to source the necessary funding for the 'neonate' Faculty.

The succeeding V.C of BUK (Prof. Rasheed) and CMD of AKTH (Prof. Mohhamed) also bought into the project and were what I called the "Heroes" of the development of the Faculty.

This exemplary cooperation between the two "sister" institutions is mandatory for success in Dental and Medical education in Nigeria, (**Lagos University Teaching Hospital Act, CAP. L4, LFN 2004**) unless the University decides to develop its own teaching Hospital.

Kano thus became the first to develop the foundation academic staffing for the proposed Faculty locally.

This did not come without its challenges, our plan to retrain and convert maxillofacial surgeons to other specialities didn't work. That notwithstanding the proposals to commence training was forwarded for accreditation to the NUC and MDCN. Today, BUK Faculty of Dentistry is a marvellously successful story.



Fig. 19: Faculty of Dentistry, Bayero University, Kano



Fig. 20: Landscape of the Hexagonal Faculty Building (Courtyard)



Fig. 21: Phantom Head Laboratory (Students & Lecturer)



Fig. 22: First-set of BDS Graduates in 2014/2015 Academic Year

I am grateful to the V.C. and Dean of the Faculty of Dentistry for rewarding me with the singular honour of delivering the first Faculty of Dentistry lecture.

The University of Jos is seriously pursuing the accreditation to commence the Dentistry programme, which I was mandated to be actively involved with by my respected teacher Professor E.O. Adekeye, based on his evaluation of the BUK success. He unfortunately passed on *early 2015* before his pet project could take off. I believe that with determinations akin to what happen in Kano, all the geopolitical zones of the country would have been covered.

Conclusions

Mr. Vice Chancellor Sir, I have spent the last one hour discussing the Oral cancers and the need for us to pay more attention to changes that might occur in the mouth during our routine tooth brushings.

The peculiarity of the oral cavity as an essentially high friction generating machine leading to high cell turnover which predisposes the basal cells to carcinogenic transformation was also discussed.

The carcinoma affecting the tongue mostly affect the sides of the tongue that often comes into the ways of the teeth during chewing popularly refers to as, "the fight between the teeth and tongue" which could be an early warning sign of possibility of development of malignancy.

The tooth wears which often result from chewing bones and other hard objects could create sharp surfaces that might be traumatising the tongue both in speech and chewing. All such sharp surfaces should be promptly treated.

There is urgent need to self-examine the mouth and report early for evaluation and treatment of any changes noticed.

The mandatory medical screening should also include oral health screening. It is said, "the mouth is the mirror of the body". Most medical conditions have oral mucosal component. The effects of both biological and non-biological cancers are destructive if not promptly attended to.

Medical and Dental education programmes require sustained synergy of efforts from both University and Hospital to produce competent medical manpower, for which the two institutions were established.

Recommendations

The recently formulated Oral health policy of the Federal Ministry of health should be implemented and integrated with the National health policy to effectively drive the efforts to manage all malignancies affecting the citizen of this country.

The National Cancer Registry should also be reinvigorated to be able to document all cases no matter the location in the country and coordinate all cancer screening efforts.

The National Health Insurance Scheme, at the present form is not serving comprehensively. It should therefore be restructured and enabled to insure our health comprehensively, every Nigerian no matter the status and

social standing should have access to comprehensive health care including oral health.

Dentistry degree programme is capital intensive in both initial equipment and continuously requiring consumable materials at such a quantity to baffle any resource manager who is not familiar with what it essentially involved. It is therefore important that the University management should proactively plan to accomplish this.

The "tripod" on which the Teaching Hospital stand should be reclassified, to give prominence to Training and Research, rather than placing service first. This is the current thinking of the Ministry of Health which expect the Hospital to be a revenue generating institutions. It thus drives up the costs of services rendered by these institutions, beyond the capabilities of the citizenry.

The Committees of Vice Chancellors of Universities, Provosts of Colleges of Medicine and policy drivers of the Ministries of Education and Health should cooperate to break down the invincible barriers and synergise their efforts to revamp the medical training facilities in the country.

To further this aim, the University of Lagos Health Centre deserves to be expanded to offer Dental services to staff and students of the great institution.

Mr. Vice Chancellor Sir!
Distinguished ladies and gentlemen!
I rest my case.

I thank you all for listening.

ACKNOWLEDGEMENT

I thank God almighty for making this day a reality. It is by His grace that I am stand before you today to deliver this lecture.

I am once again grateful to the Vice Chancellor for granting his approval for the lecture to take place today. Your leadership invigorated the importance of Inaugural lecture in the University.

I am grateful to the Provost of the College of Medicine; Professor Folashade Ogunsola for her unique style of leadership in the College of Medicine, especially encouragement and drive of research initiatives and also the Dean Faculty of Dental Sciences for continued progress in the Faculty.

I appreciate all the Past Provosts of CMUL and Deans of my Faculty. I must specially acknowledge Professor Soga Sofola who redirected me back to the academia; he saw me on my way to borrow some hand instruments for my surgery at General Hospital Gbagada and directed me to put in my application for Lecturer 1 position. I must also recognise the effort of Professor Olalekan Abudu for his firmness and forthrightness in redirecting my mind from being enmeshed in my clinical duties, to appreciate that it is only by research and publication that I will be assessed. He had since then maintained unwavering interest in my affairs. My teacher Professor J.O. Akinosi who despite the busy schedules of the office found time to nurture us through the tough time of "exodus" and sustained interest in our progress despite the vagaries of aging is immensely appreciated. I also appreciate Professors Odugbemi, Elesha and my friend Atoyebi.

The College of Medicine/Lagos University Teaching Hospital is my constituency, I have literarily spent last 40years of my life there, only interspersed by the brief period I spent partially out of Idi-araba. It is therefore natural that I develop intimate bond with the community. I acknowledge the contributions of all who impacted my life in one way or another, I cannot list you all.

The Dental Family in which my development was nurtured, from Undergraduate to postgraduate (Residency programme) that later gave me the opportunity of an academic career the epitome of which we are here celebrating deserves my load of gratitude. I appreciate all cadres of staff from the janitors, surgery assistants, nurses, dental therapists, dental technicians and technologist, my predecessors in the residency programme and academic staff. I acknowledge the contributions of all past School and Faculty Deans.

I am grateful to my friends Late Tunji Okusanya (MIC), Bolaji Ogunkoya and others who contributed substantially towards the cost of surgical management of Miss. "T", their efforts encouraged me to strive for excellence and take on challenging cases courageously.

I appreciate the immense contributions of my friends who I had journeyed with in the course of my career and had been of immeasurable value, Pharm. and Professor Ajuluchukwu, Professor Wale Oke, Professor Akin Osibogun, Dr. Amam Mbakwem, the list is long to accommodate all please pardon me.

The Anaesthetists that have made our work seamless and quieter: the generation from Late Professor Ffoulkes-Crabb, Professor Kushimo to the "darling" of Oral and Maxillofacial Surgery, Dr. Ronke Desalu are all appreciated.

I have enjoyed tremendous support, cooperation from my colleagues in the Oral and Maxillofacial Surgery Department of CMUL/LUTH, Professors J.O. Akinosi, Late Professor, A.L. Nwoku, Professors Akinwande, Arotiba & Ogunlewe. Drs. Adeyemo, Gbotolorun, Olutayo James, Adewole, Adeyemi and Olojede, my Resident doctors both Senior and Junior, past and present. Nurses I had managed the patients with in the hospital, especially the unforgettable Matron Baruwa. Dental Nurses, Mrs. Akigbogun, Olori Daramola, Mrs. Ishola and Mrs. Akpan. I say a big thank you to all.

I am immensely grateful to my extended Family; I wasn't familiar with the titles of 'auntie, uncle and cousins' used for members of the family; I stand corrected if there is any African Language that has a single word equivalent to them. Every mother is mama to all, ditto fathers.

I salute all the mothers and fathers who had played corrective roles in my life as I grew up playing so many pranks with my peers on the streets of Lagos Island and later on the mainland, off the views of my biological parents and relations.

My biological Parents both of blessed memories put me through the values of hard work and contentment, for which I am eternally grateful. Discipline and prudence even when there is surplus is a value I cannot forget.

I appreciate my paternal families, Ladeinde, Daudu, Giwa, Akinsemoyin, Yekini lineages.

I recognise the roles all my Siblings played in moulding my character. I appreciate the efforts and love radiated to me by my "other" Mother (Step Mother)

Also, my maternal roots the famous Adeyinka dynasty of Abeokuta, "Ijaye-Kukudi" extraction, Babarinsa, Onifades lineages etc. The 'Olori-ebi' Eng. (Deacon) A.O. Adeyinka, I appreciate your support over the years, tolerating some of our "out-busts with an uncanny patience.

I am very grateful to God for blessing me with wonderful children [Oluwadamilola, Adunnola, Oladunni, Olamide and "my guy and co-tenant" Lakoyede]. I cannot ask for better.

When God loves you; He gives you daughters, when He likes you; He gives you sons. You have radiated warmth and love even when I am being over bearing. I am proud of your academic achievements and high moral fortitude. I thank you all.

I am immensely grateful to my extended Family; I wasn't familiar with the titles of 'auntie, uncle and cousins' used for members of the family; I stand corrected if there is any African Language that has a single word equivalent to them. Every mother is mama to all, ditto fathers.

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I am grateful to the University for not only having given me the enabling environment and opportunities to thrive; all my Children have graduated from this great university in Chemical and Electrical Engineering, Law and Economics. The foundation built at this Citadel of knowledge empowered them to perform excellently in their Masters Degree programmes at various high ranking Universities in the United Kingdom.

Thank you for your attention!

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