OROFACIAL TUMOURS: COMBATING THE ENEMY AT THE GATEWAY AND PUTTING A SMILE ON THE FACE

AN INAUGURAL LECTURE,
2010/2011

JUWON TUNDE AROTIBA

UNIVERSITY OF IBADAN

OROFACIAL TUMOURS: COMBATING THE ENEMY AT THE GẠTEWAY AND PUTTING A SMILE ON THE FACE

An inaugural lecture delivered at the University of Ibadan

on Thursday, 30 June, 2011

By

JUWON TUNDE AROTIBA
Professor of Oral & Maxillofacial Surgery
Faculty of Dentistry
University of Ibadan
Ibadan, Nigeria.

UNIVERSITY OF IBADAN

Ibadan University Press
Publishing House
University of Ibadan
Ibadan, Nigeria.

First Published 2011

ISBN: 978 – 978 – 8414 – 56 – 8

Printed by: Ibadan University Printery

The Vice-Chancellor, Deputy Vice-Chancellor (Administration), Deputy Vice-Chancellor (Academic), Registrar, Librarian, Provost of the College of Medicine, Dean of Dentistry, Dean of the Postgraduate School, Deans of other Faculties, and of Students, Distinguished Ladies and Gentlemen.

Preamble

I am indeed grateful to the Almighty God and the University authority, led by the Vice-Chancellor, Professor I.F. Adewole for the opportunity granted me to deliver, on behalf of the Faculty of Dentistry, this inaugural lecture, the 11th in the 2010/2011 series. The first Dental School in Nigeria and black Africa was established at the University of Lagos in 1965 through the initiative of Professor Horatio Oritsejolomi Thomas, a renowned surgeon who was recruited from the Department of Surgery of the University of Ibadan as the foundation Dean of the University of Lagos Medical School in 1961. The University of Lagos Dental School started with the appointment of Dr John Fox-Taylor, a Briton, and then Chief Dental Surgeon of the Northern Region, as a Professor of Dentistry[1]. Prior to this, dental surgeons with postgraduate fellowship qualifications in oral surgery had been practising as senior registrars and consultants in the Plastic Surgery Unit of the Department of Surgery of The University College Hospital (UCH) Ibadan. One of the oral surgeons in the Department of Surgery, University of Ibadan, Professor (then Dr.) J. O. Akinosi, was recruited by Professor Thomas to start the oral surgery programme of the newly established School of Dentistry of the University of Lagos [2]. The University of Ibadan, who would have been the first to establish a Dental School in Nigeria and black Africa, having commenced the training of medical students since 1948, became the second Nigerian University to do so—a decade after the University of Lagos. Dental training began in the University of Ibadan with the admission of students for the Bachelor of Dental Surgery (B.D.S.) programme in 1975 and the first set of dentists graduated in 1980. Understandably at the beginning,

the mantle of leadership fell on two Oral and Maxillofacial Surgeons then practising under the Plastic Unit of the Department of Surgery, University of Ibadan, Professor (then Drs.) J.O. Daramola and H.A. Ajagbe. The former was appointed the Acting Head of the newly established Department of Dentistry and the latter, Sub-dean (Dentistry). These two were joined by Dr. Moronke Noah, Dr. Kulasekara and later Dr. S.P Luthra with the assistance of Dr. Adewumi, Dr. Aremu, Dr. Koledade, Late Drs. Ajayi-Obe, and Olaniyan as associate lecturers.

In 1981, three departments were created from the then Department of Dentistry in anticipation of the establishment of a Faculty of Dentistry out of the existing Faculty of Clinical Sciences and Dentistry. Unfortunately, this dream was aborted as a result of the "brain drain" malady which saw almost all the lecturers in the dental programme becoming "Andrews" by seeking "greener pasture" in the Gulf States due to the poor remunerations existing in the university system. Two decades later, this dream was reawakened at the commencement of the tenure of Professor T.M. Shokunbi as Provost, College of Medicine, and eventually in 2002, the National University Commission approved the establishment of the Faculty of Dentistry, University of Ibadan. Professor Lawoyin was appointed the first Acting Dean.

History of Inaugural Lectures from Dentistry

This is the 6th inaugural lecture from the profession of dentistry in Ibadan. The first was delivered by Professor J. O. Daramola, an Oral and Maxillofacial Surgeon, on 28th January, 1988. Professor A.E. Obiechina, also an Oral and Maxillofacial Surgeon, delivered the second lecture on 18th December, 2003. The third lecture was given on 22nd December, 2005, by Professor Gbemi Oke from Community Dentistry, while Professor J.O. Lawoyin from Oral Pathology delivered the fourth lecture on 13th December, 2006. Professor Modupe Arowojolu the current Dean of Dentistry, who is also a Periodontologist delivered the 5th lecture on 12th August, 2010 (table 1).

Table 1: Past Inaugural Lectures from Dentistry

LECTURE	DATE	LECTURER	DEPARTMENT
1ST INAUGURAL LECTURE	JANUARY 28, 1988	PROF. J.O. DARAMOLA	ORAL & MAXILLOFACIAL SURGERY
2ND INAUGURAL LECTURE	DECEMBER 18, 2003	PROF. A.E. OBIECHINA	ORAL & MAXILLOFACIAL SURGERY
3RD INAUGURAL LECTURE	DECEMBER 22, 2005	PROF. GBEMISOLA OKE	COMMUNITY DENTISTRY
4TH INAUGURAL LECTURE	DECEMBER 13, 2006	PROF. J.O. LAWOYIN	ORAL PATHOLOGY
5TH INAUGURAL LECTURE	AUGUST 12, 2010	PROF. MODUPE AROWOJOLU	PERIODONTOLOGY AND COMMUNITY DENTISTRY

This is the third lecture from the Department of Oral and Maxillofacial Surgery which implies that the earlier lectures from my speciality were delivered by my teachers. Today's lecture will mean oral and maxillofacial surgery constitutes 50% of inaugural lectures from dentistry. This is understandably due to the fact that the pioneers of dentistry in the University of Ibadan as earlier mentioned were oral surgeons. I can safely predict that by the grace of God the next inaugural lecture from the Faculty will also come from this speciality.

Oral and Maxillofacial Surgery

Oral and maxillofacial surgery is the branch of dentistry that deals with the surgical management of orofacial diseases or pathologies. It entails the art of diagnosis and treatment of various diseases, injuries and defects involving the orofacial region. It includes the sub-specialities that deal with the surgical treatment of facial trauma/injuries, orofacial tumours, cysts and fibrosseous lesions, jaw deformities (orthognathic surgery) and facial defects (cleft lip/palate and jaw reconstructions), replacement of missing or lost tooth (implantology), orofacial infections and temporomandibular joint lesions (TMJ surgery) among others.

History of Oral and Maxillofacial Surgery

According to the American Dental Association's history of dentistry, oral surgery began as far back as between 500BC and 300 BC during which Hippocrates and Aristotle wrote about various dental topics such as treating decayed teeth, gum disease, extracting teeth and the use of wires to support loose teeth and fractured jaws. The Guild of Barbers was created in France in 1210 and this later split into two groups: surgeons who carried out simple procedures and those who carried out complex operations. In 1575, Ambrose Pare (the Father of Surgery) published "Complete Works", a book which contained information on tooth extractions, treatment of tooth decay, and jaw fractures. In 1728, Pierre Fauchard wrote a treatise called "The Surgeon Dentist" which contained the basic anatomy of the mouth and surgery techniques and in 1840 the American Society of Dental Surgeons was established.[3]

Fig. 1: Pictorial illustrations of dental surgery practised in Spain, Italy and Russia in the 19th Century.

Source: Adapted from Dentistry: An Illustrated History, Malvin E. Ring (eds.); Abradale Press: Harry N. Abrams Inc. Publishers, New York.

My Choice of Course

Exactly 34 years ago, I was offered a direct entry admission to read Dentistry (a newly introduced course in the University of Ibadan then) because computed point from my 'A' level result was not enough for medicine, which was my first choice. That was my first contact with the word "Dentistry" and I reasoned erroneously in ignorance that it was a waste of time for me to study how to take care of "the teeth" for 5 years while others would be studying the whole body for the same period. Due to this and some other circumstances, I deferred the admission as advised by my Uncle, Engineer J.B. Fadupin, a staff in Works and Maintenance Department, who asked me to go back and think about my decision. Meanwhile, I applied to read medicine at the University of Lagos through the newly created Joint Admission Matriculation Board (JAMB) in 1978. While I was waiting for the JAMB admission, I went around gathering information on dentistry as a course of study. It was while doing this that I was introduced to Dr. Koledade, the Chief Dental Surgeon at the Kwara State Ministry of Health who happened to come from the same local government with me. He explained what dentistry entails to me and this aroused my keen interest, having learnt that a dentist sees and treats the human being as a patient and not the tooth as a patient[4]. A year later in 1978, despite the fact that I was offered admission to study medicine at the University of Lagos by JAMB, I chose instead to take up my deferred admission to read dentistry at the prestigious University of Ibadan, having now been well-informed on what the course entails.

Mr. Vice-Chancellor Sir, I became a maxillofacial surgeon by choice. Two experiences made the choice for me. The first was my undergraduate training exposure to and contact with patients with jaw tumours of varied sizes and shapes while passing through oral surgery and pathology postings. I empathized deeply with the sufferings of these patients who had to travel over great distances to look for treatment. One interesting and intriguing fact to me was that a considerable number of them were referred from my State

(then Kwara State). The second experience was during my internship at the Government Dental Centre, Ilorin, Kwara State. While I was undergoing my internship training in 1983, I was overwhelmed by the number of cases of facial trauma/fractures from victims of road traffic accidents and jaw tumours of gigantic sizes. My first case of bilateral mandibular fracture was referred to the University College Hospital (UCH), Ibadan, as directed by my superiors despite the fact that I asked for permission to treat under their supervision. Few days later, I got a beautiful but embarrassing letter from my teacher, Professor H.A. Ajagbe, who asked me to list all the materials needed for the treatment of the patient which were not available in my centre, offering to dispatch them to me for future cases because they had put enough in me to be able to manage such cases and not refer them. My next surgical case was a patient with a dentigerous cyst in the mandible and my superiors again asked me to refer the patient. I succeeded in convincing one of them, a Pakistani, after much persuasion, to allow me to do it under his close supervision since I had assisted on similar cases while in training. He reluctantly agreed but by the time the patient sat on the dental chair and I was administering the local anaesthesia, I curiously noticed that all my superiors, most of whom were foreigners including the one I had approached earlier to supervise me, started exiting the clinic on flimsy excuses one after the other and did not return until after the surgery was completed. What saved me was that I had wisely invited a friend, Dr. O.O. Dosumu, who was a year my senior in school and was then undergoing his National Service at the neighbouring Dental Centre, Military Hospital, Sobi, Ilorin, to come and give me a helping hand. This experience left an indelible mark on me and the success of the surgery emboldened me to seek a place for further training in oral and maxillofacial surgery.

When I came back in October 1986 to submit my application form for residency training in oral and maxillofacial surgery, I approached the Head of Department to inform him of my intention and to request for a letter of

recommendation, but I was informed politely that there was no vacant training slot in the Department. As I was going out of the administrative office, I met one of the pioneers of dentistry and my mentor, Professor H.A. Ajagbe who in his characteristic fatherly manner asked what I was looking for. When I told him about my mission and what the Head of Department told me, he took me to his office. In his office he, offered me a cup of tea and said, "Young man, if you are really interested in maxillofacial surgery, there is a way out; so don't be discouraged but make sure you pass your primary exams" (which I had registered for then). He advised me to submit my application choosing a speciality where there were many vacancies. He believed within the next one or two years, some residents would have graduated and I could seek a transfer back to oral and maxillofacial surgery, although he gave me no assurance—and that was what I did to enlist in the army to **Fight the Enemy at the Gateway.**

Oral Cavity and the Face

The oral cavity or the mouth is part of the body where the organs used to bite, tear, chew and swallow food are situated. It therefore plays a vital role in digestion and nutrition which are essential for a healthy body. The mouth, in addition, serves the function of speech (communication) and it assists in the process of facial and emotional expressions. It has therefore been described as the **gateway to the body** (fig. 2). The mouth consists of various parts which include the lips, the teeth, the tongue, the gum (gingiva), alveolar mucosa, the floor, the palate (roof) and the jawbones (maxilla and mandible).

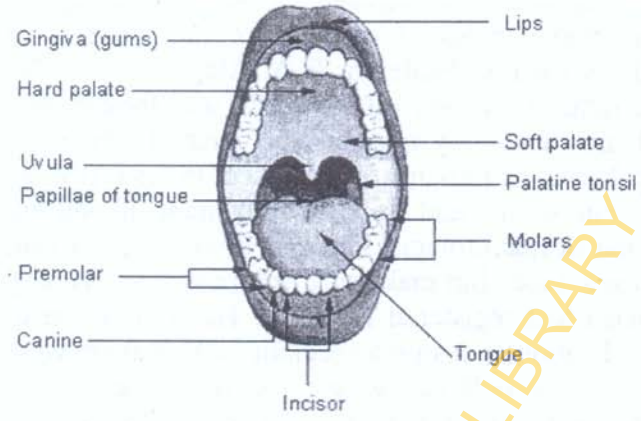


Fig. 2: Oral cavity – the gateway of the body

The face is the anterior part of the head which starts from the forehead superiorly, to the chin inferiorly. It usually includes the upper jaw (maxilla) which is in the middle third of the face and the lower jaw (mandible) which is in the lower third of the face. It is an organ of expression of emotions (smiling, frowning, crying, worrying) and aesthetics (beauty). Beauty, they say, is in the eye of the beholder! Therefore, different facial expressions can implicate different individual emotions such as satisfaction, joy, sadness, anger, irritation, confusion, confidence, and many others.

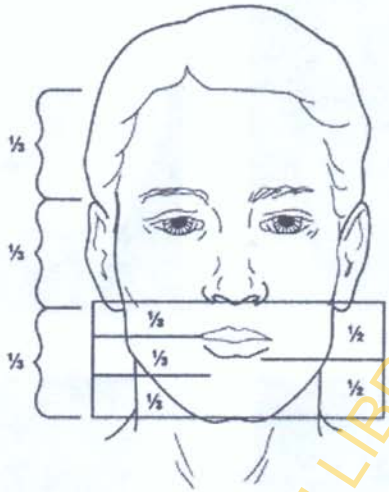


Fig. 3: The Face

Orofacial Tumours

Orofacial tumours are tumours affecting essentially these two contiguous regions which are under the care of the oral and maxillofacial surgeon. However, for the purpose of this lecture, orofacial tumours shall be confined to tumours affecting the oral cavity, including the jaws, primarily and or extending to the adjacent structures of the face from the oral cavity. When a tumour affects these areas, it compromises their functions and adversely affect not only the physical but social, emotional and remarkably, financial well-being of the individuals involved. It also affects those who care for the patient (the relatives and/or friends). Therefore, an oral tumour is an ENEMY AT THE GATEWAY.

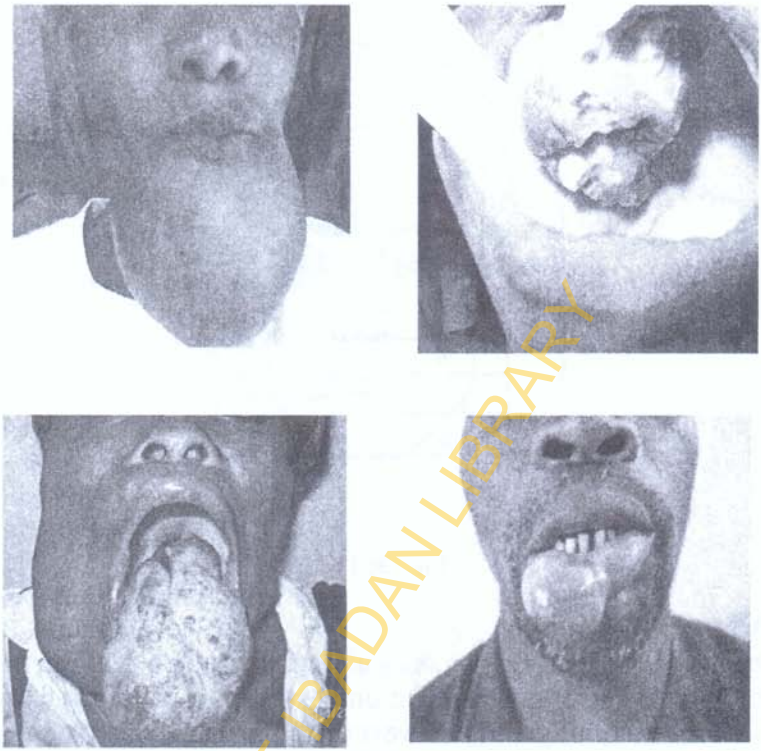


Fig. 4: Different sites of oral tumours

A tumour is an abnormal growth of tissues or a swelling. It results from abnormal and/or uncontrolled replication of cells with resultant expansive (benign) or invasive/infiltrative (malignant) growth. It is also referred to as "Neoplasm" which means new growth. Willis (1967)[5] defined neoplasm as an abnormal mass of tissue—the growth of which is independent, exceeds and is uncoordinated with that of normal tissues, and persists even after cessation of the stimuli that provoked it. In simple terms, a tumour results from uncontrolled growth of cells/tissues.

Tumours are generally divided into benign or malignant types or groups based on the morphology of the neoplastic cells (differentiation and anaplasia), rate of growth, local invasion and distant spread or metastasis. Benign tumours

consist of cells that are similar in appearance to normal cells of origin. They usually exhibit mild clinical symptoms, are well encapsulated, show expansive slow growth without infiltrating adjacent tissues or organs or spreading to distant tissues (metastasis) and responds favourably to treatment. On the other hand, malignant tumours typically tend to be anaplastic, have a fast rate of growth, invade and infiltrate surrounding tissues, have some systemic effect on the host and generally metastasize to distant sites (table 2). Therefore, malignant tumours have poor clinical and prognostic features compared to benign tumours and I see both as **enemies at the gateway** attacking the organs of nutrition, communication and facial expression.

Table 2: Characteristics of Benign and Malignant Tumours

Benign	Malignant
• Slow growth	• Fast growth
• Expansive	• Infiltrative
• Well encapsulated	• Non encapsulated
• Pressure on adjacent tissues	• Infiltrate /destroys adjacent tissues
• Effect on host–insignificant	• Marked systemic effects – anaemia, loss of appetite and loss of weight
• Does not metastasize	• Metastasis is possible
• Prognosis good/fair	• Prognosis usually poor
• Recurrence is rare	• Recurrence is common

Tumour in History

Cancer is as old as human history, as the word carcinoma which was derived from the Latin word "cancer" was frequently used in ancient literature to mean tumours or corrosive ulcers. It was the belief in ancient times that it is a disease caused by malfunctioning of the "humour" which should be treated with purgatives like arsenics, sulphur and

laxatives[6]. Hippocrates (460 – 370 BC) was credited to be the first to use the Latin word "*karkinos*" and "*karkinoma*" to describe non-ulcer forming (benign) and ulcer-forming (malignant) tumours respectively. He proposed that the separation of "humour" by toxins produced in the body led to the production of black bile and consequently cancer. Clarus Galen (131 - 200 AD), supporting this belief, stated that people in whom black bile predominated were likely to develop tumours because this bile tended to solidify in certain selective sites such as the lips , breasts and the tongue. However, evidence supports the fact that cancer predates the era of Hippocrates and Galen. Medical manuscripts of Chinese and Summerian origin from the third millennium B.C., documented evidence of cancer and historical archives of ancient India indicated that "*Ramajana*" and "*Ayurveda*" recommended herbal remedies, red arsenics and minerals for the treatment of deep-seated cancer, while superficial ones should be cauterized with red-hot iron [7,8]. Edwin Smith Papyrus, an Egyptian textbook believed to have been written around 3000 - 1500 B.C., also described tumours that must not be touched as treatment might prove fatal[9].

Also, in the Holy Bible[10], in the first book of Samuel, Chapter five, verse six, we were told how the Lord God struck the Philistines with "tumours". An analogy to this is the belief of some of our patients that oral tumours are consequences of supernatural afflictions from an unknown force or agent who might be an enemy. This sometimes informed their running to spiritualists, herbalists and prayer houses for a solution resulting in a delay before they report for treatment in the hospital.

What are the Causes (Aetiology) of Tumours?

A tumour is of multi-factorial aetiology. This implies that there is no single clearly recognizable cause for any one type of oral tumour. A tumour therefore may arise as a result of many factors with the precise role of each cause or factor being poorly understood.

Although the aetio-pathogenesis of oral benign tumours is not too clearly elucidated, recent studies have identified various molecular alterations that may be responsible for the development and progression of odontogenic tumours.[11] On the other hand, the aetio-pathogenesis of oral cancer (malignant tumours) is well investigated, thus giving an insight into the process of cancer development (Carcinogenesis). Oral cancer has been widely studied with regards to the factors that are strongly implicated in its pathogenesis, which are:

Genetic Factors

(A) Hereditary Predisposition: An individual with a hereditary predisposition to cancer is a person with an increased likelihood of developing cancer due to inherited genes. These inherited genes make body cells more sensitive to changes caused by environ-mental factors which cause a change of normal body cells into cancer cells.

(B) Mutations (Genetic Damage)

(i) Oncogenes: Cancers are derived from mutations in genes that change cell growth patterns. These genes are called oncogenes. A mutation in an oncogene can convert ordinary body cells into cancer cells. Cancers caused by oncogenes are not inherited. More than 100 oncogenes have been discovered and several oncogenes have been associated with cancers of the head and neck including oral cancers [12].

(ii) Tumour Suppressor Genes (Anti-oncogenes): Normal tumour suppressor genes are genes which slow down or stop the growth of normal body cells. Mutations of tumour suppressor genes result in loss of control of cell division or replication and this can also cause the development of oral and pharyngeal cancers[13].

(iii) Genes regulating programmed cell death (apoptosis) if mutated can cause impaired function which leads to continuous growth and replication of cell thereby resulting in cancer.

(iv) Genes involved in DNA repair if impaired in functioning can lead to damaged DNA perpetration-development of mutation which results in cancer formation.

Current evidence suggests that cancer development is a multi-step process. The concept of multi-step carcinogenesis was first proposed by Berenblum and Schubik in 1948[14] and present day oncology recognizes three main phases or steps: initiation, promotion, and progression.[13] Genetic damage (mutation) may be acquired by the action of environmental agents, such as chemicals, radiation, or viruses, or it may be inherited in the germ line. These four classes of normal regulatory genes earlier mentioned are the principal targets of genetic damage [15, 16, 17]. A tumour is believed to be formed by the clonal expansion of a single precursor cell that has incurred these genetic damages leading to the development of cancer.

Social Habits/Factors

Tobacco

The use of tobacco is the most widely implicated and major environmental risk factor for developing oral cancer[18]. Tobacco contains substances that are carcinogenic or promote cancer such as polycyclic amines, nitrosamines and polycyclic aromatic hydrocarbons. Cigarettes smoke and substances in smokeless tobacco, snuff dipping and others have received considerable attention as carcinogens that promote oral cancer. Studies also indicate that smoking in combination with consumption of alcohol produces an even greater risk for oral cancer than use of either substance alone [19, 20]

Alcohol

Although pure ethanol has never been proven to be carcinogenic, it has been suggested that alcohol may promote cancer through three possible mechanisms, namely[21, 22, 23]:

(i) Its damaging effects on the liver which then secondarily results in nutritional (including Vitamin B complex) deficiencies, thus increasing susceptibility of the oral mucosa to carcinogens from the environment.

(ii) Direct damage to the oral mucous membrane allowing it to be more permeable to carcinogenic substances from tobacco and other sources.

(iii) Carcinogenic chemical impurities from alcoholic beverages.

Areca Nut wrapped in Betel Vine (Betel Quid)

The high prevalence of oral cancer in south-east Asia especially India, has been established to be a consequence of the cultural social habit of chewing betel quid containing lime, tobacco and spicy ingredients[24, 25, 26].

Infections

Various types of bacterial (e.g. Syphylis), Fungal (e.g. Candidiasis) and viral infections (especially Human Papilloma Virus–HPV, Human Immunodeficiency Virus-HIV, Epstein Barr Virus–EBV and Herpes) are risk factors in the development of oral cancer [27]. It was suggested that additional factors (genetic or environmental) may be needed in these infections as they contribute only a step in the multi-step process of carcinogenesis[28].

Extrinsic Factors

Actinic radiation from sunlight, exposure to chemical substances in tanning and leather industries as well as plastic production factories have been documented to be risk factors for oral cancer as a result of exposure to carcinogens which cause damage to genes (gene mutation)[29]. Other extrinsic risk

factors include chronic irritations from ill-fitting dentures/ appliances, Lichen planus and Leukoplakia [27, 30].

Intrinsic Factor

Genetic lesions (e.g.dyskeratosis congenita), nutritional deficiencies (Fe,Folate,Vit B12, A and E) and immunosuppression/immunodeficiency are known to increase the risk of oral cancer [27].

Classification of Tumours

Classification of tumours in the orofacial region is cumbersome and complex because of the varied types of tissues in this region and their different growth characteristics. As a result, there have been many attempts at classifying oral tumours, but the most universal was the one by World Health Organization (WHO) in 2005[31]. Tumours of the oral cavity and oropharynx are said to be either of epithelial, mesenchymal or haematolymphoid origin. Oral tumours are also grouped into odontogenic and non-odontogenic tumours depending on whether they originate from tooth forming cells or not (table 3).

Table 3: WHO Classification of Odontogenic Tumours

BENIGN TUMOURS

Odontogenic epithelium with mature, fibrous stroma without odontogenic ectomesenchyme
• Ameloblastoma, solid / multicystic type 9310/0
• Ameloblastoma, extraosseous / peripheral type 9310/0
• Ameloblastoma, desmoplastic type 9310/0
• Ameloblastoma, unicystic type 9310/0
• Squamous odontogenic tumour 9312/0
• Calcifying epithelial odontogenic tumour 9340/0
• Adenomatoid odontogenic tumour 9300/0
• Keratocystic odontogenic tumour 9270/0
Odontogenic epithelium with odontogenic ectomesenchyme, with or without hard tissue formation
• Ameloblastic fibroma 9330/0
• Ameloblastic fibrodentinoma 9271/0
• Ameloblastic fibro-odontoma 9290/0

Table 3 contd.

- Odontoma 9280/0
- Odontoma, complex type 9282/0
- Odontoma, compound type 9281/0
- Odontoameloblastoma 9311/0
- Calcifying cystic odontogenic tumour 9301/0
- Dentinogenic ghost cell tumour 9302/0

Mesenchyme and/or odontogenic ectomesenchyme with or without odontogenic epithelium

- Odontogenic fibroma 9321/0
- Odontogenic myxoma / myxofibroma 9320/0
- Cementoblastoma 9273/0

Bone-related lesions

- Ossifying fibroma 9262/0
- Fibrous dysplasia
- Osseous dysplasias
- Central giant cell lesion (granuloma)
- Cherubism
- Aneurysmal bone cyst
- Simple bone cyst

OTHER TUMOURS

- Melanotic neuroectodermal tumour of infancy 9363/0

MALIGNANT TUMOURS

Odontogenic carcinomas

- Metastasizing (malignant) ameloblastoma 9310/3
- Ameloblastic carcinoma – primary type 9270/3
- Ameloblastic carcinoma – secondary type (dedifferentiated),
- intraosseous 9270/3
- Ameloblastic carcinoma – secondary type (dedifferentiated),
- peripheral 9270/3
- Primary intraosseous squamous cell carcinoma – solid type 9270/3
- Primary intraosseous squamous cell carcinoma derived from
- keratocystic odontogenic tumour 9270/3
- Primary intraosseous squamous cell carcinoma derived from
- odontogenic cysts 9270/3
- Clear cell odontogenic carcinoma 9341/3
- Ghost cell odontogenic carcinoma 9302/3

Odontogenic sarcomas

Ameloblastic fibrosarcoma 9330/3
Ameloblastic fibrodentino–and fibro-odontosarcoma 9290/3

Mr. Vice-Chancellor Sir, it is obvious that I will not be able to talk about all the tumours encountered in the orofacial region—the enemies at our gateway—within the space of time of this lecture. I will therefore, crave your indulgence to allow me go straight to the common ones in our environment, on which I have made my contributions to knowledge.

Orofacial tumours are known to exhibit geographic variations in prevalence and pattern due to cultural, social, occupational or climatic factors. For example, Ameloblastoma, an odontogenic tumour, is known to be more common in black Africans than Caucasians[32]. However, the frequency of oral tumours, especially jaw tumours in Africans is debatable. Earlier reports emanating from Africa showed a relatively high frequency [33, 34, 35, 36] which could be due to a "harvesting phenomenon" as had been hypothesized by Anand et al. [36, 37]. This is a situation where untreated cases, which grow slowly and are seldom life-threatening, accumulate for lack of facility to treat them, thus conveying an erroneous impression of high prevalence when a centre for treatment becomes available. Recent studies from Africa [38, 39, 40] show that oral tumours constitute between 1% to 4% of all tumours and about 9% to 30% of these are odontogenic tumours [41, 42]. In our study of odontogenic tumours from Ibadan,[41] my colleagues and I were able to establish that about a third (30% precisely) of oral and jaw tumours seen at the University College Hospital over a 15 year period were odontogenic tumours in contrast with 1-3 % in Caucasians [43, 44]. Essentially, our study showed that Ameloblastoma is usually the most common, accounting for 59% of odontogenic tumours in our environment. This finding is similar to reports from other centres in Nigeria [42, 45, 46], and Asian countries[47, 48] but differs from findings in Europe and North America where odontomes are the commonest odontogenic tumours[49, 50].

Ameloblastoma

Ameloblastoma is a benign, but locally aggressive and infiltrative epithelial odontogenic tumour found almost exclusively in the jaws. It constitutes 1 – 3% of all jaw tumours [51, 52]. First described by Falkson in 1879 and later named adamantinoma by Malassez in 1885[32], the current name was given by Ivy and Churchill [53]. It commonly presents as a slow growing, painless jaw swelling which causes expansion of cortical bone and later, perforation of the lingual and/or buccal plates infiltrating the soft tissues. Due to its slow growing and painless clinical characteristics, patients often present late, causing a lot of delay in diagnosis (fig. 5).

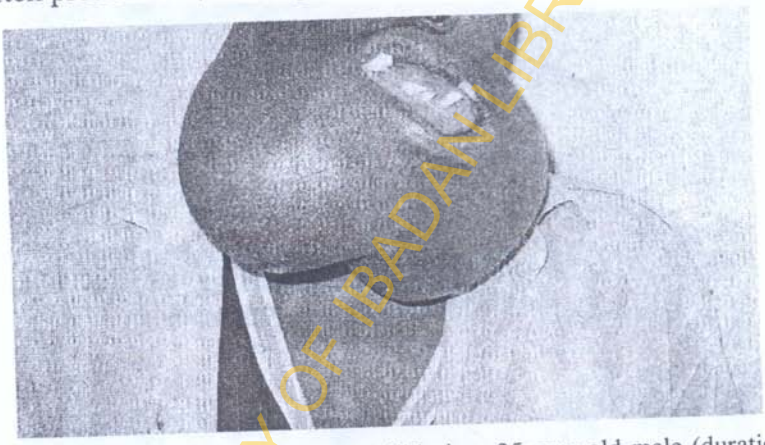


Fig. 5: Ameloblastoma of the mandible in a 25 year old male (duration >10 years)

Sawyer et al. [32], and Shear and Singh[54] provided statistical evidence that Ameloblastoma is more common in black Africans than in Caucasians. In our review of a series of patients with odontogenic tumours in Ibadan[41] we reported that Ameloblastoma was the most common, accounting for more than half (59%) of all odontogenic tumours.

Other characteristics of this tumour showed it is seen mostly in the 2nd to 4th decades of life with the peak in the 3rd decade, slightly more common in males than females and affects the mandible (91%) far more frequently than the

maxilla (9%). While early studies from Nigeria[55, 56, 57] had reported a high prevalence for the anterior mandible in Nigerians, we found a higher posterior mandibular prevalence in our own study which agreed with the findings of Adekeye and Olaitan et al., from northern Nigeria[58, 59, 60]. However, the proportion of anterior mandibular lesions was still significantly higher when compared with the Caucasians. Our findings from a recent study carried out in collaboration with colleagues from Ahmadu Bello University Teaching Hospital, Kaduna further confirm these epidemiological characteristics of Ameloblastoma in Nigerians [61].

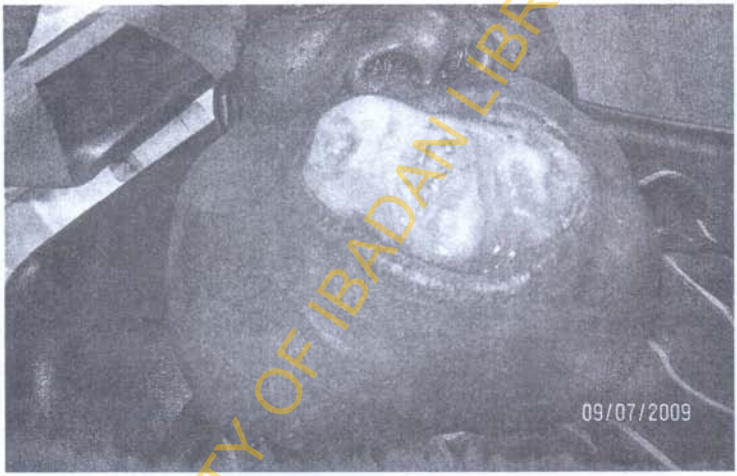


Fig. 6: Gigantic ameloblastoma showing local infiltration

One major weapon of this enemy at the gateway is that it usually recurs after treatment due to its local infiltration of adjacent tissues. About 50% to 80% of the recurrences are diagnosed within the first five years, but recurrences have been reported more than 30 years after surgery. In our series from Ibadan, 13(19%) out of 68 patients had recurrence while more than three quarters (83%) of the recurrences were within 5 years after surgical treatment. A more significant finding was the fact that the rate of recurrence was higher (40%) in those treated with conservative surgery than those treated with radical surgery (10%). Based on this, we

therefore recommended adequate surgical removal and not conservative procedures (like enucleation or curettage) for the tumour and that patients should be followed up for a lifetime after surgery.

In furtherance of our research efforts on this tumour, I collaborated with my colleagues from four other tertiary health institutions in Nigeria to study the clinic-pathologic presentation of Ameloblastoma in Nigerian children and adolescents[62]. We found that children and adolescents accounted for 21.9% of Ameloblastoma seen in all ages in Nigerians. In addition, some peculiar clinical features of Ameloblastoma seen in Nigerian children include the predominance of males, solid multi-cystic types and site predilection for the symphyseal (anterior) region of the mandible. Since radical surgical resection remains the predominant form of treatment, varying degree of interference in jaw growth are usually seen in these patients.

Arising from our observed rate of recurrence of Ameloblastoma coupled with the lack of consensus on surgical treatment as a result of the controversies on whether conservative (enucleation, curettage, cryosurgery) or radical surgery (wide resection) should be the appropriate treatment for multi-cystic Ameloblastoma, we proposed an anatomical classification of multi-cystic intraosseous Ameloblastoma which could form the basis of a uniform guideline for its documentation and management, thus facilitating comparison of results or outcome of treatment[63, 64].

In all my experience so far, I have encountered only one case of primary malignant Ameloblastoma. My colleagues and I reported a case of primary ameloblastic carcinoma, a rare malignant variant of Ameloblastoma, in a Nigerian patient highlighting its clinical features for a timely diagnosis[65].

Adenomatoid Odontogenic Tumour

The epidemiological characteristics of Adenomatoid Odontogenic Tumour (AOT) have been well documented in Nigerians. This is a benign odontogenic tumour we found to be more frequent in the second decade of life in this

environment. The most prevalent site of occurrence is the anterior areas of the upper jaw[66, 67]. In our studies on the prevalence of odontogenic tumours, AOT was the third most frequent odontogenic tumour in Nigerians[41, 61]. In another multi–centre collaborative research, we established further, that the follicular types were more common in the maxilla and in younger patients while the extrafollicular types were more commonly found in the mandible and among older age groups[68]. We also confirmed that conservative surgical treatment in form of enucleation or curettage was sufficient to eradicate the tumour.

Fibromyxoma

Fibromyxoma or odontogenic myxoma is a rare odontogenic tumour of mesenchymal origin. It presents as a multilocular, expansile, slow growing (benign), painless tumour which shares similar characteristic of local aggressiveness with Ameloblastoma. It is usually found in adolescents and young adults with peak incidence in the second to third decades of life. The tumour affects both jaws with a slight predilection for the mandible and although it is said to have no sex predilection, cases reported from Nigeria showed a slightly higher female prevalence[41, 62, 69]. Fibromyxoma occurs almost exclusively in the jaws and although a benign tumour, it can grow to a considerable large size if left untreated (fig. 7).

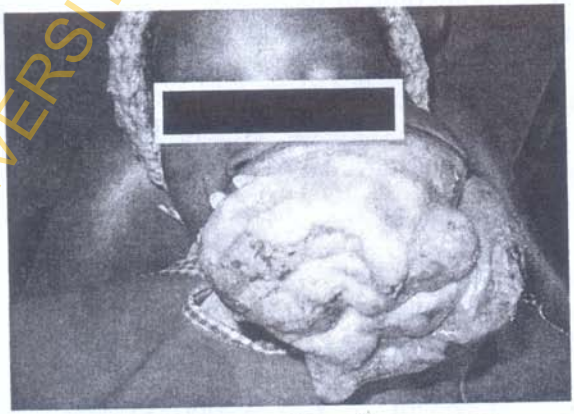


Fig. 7: Huge maxillary fibromyxoma

The relative frequency of Fibromyxoma is second only to Ameloblastoma in most of our studies from Nigeria and one of the significant findings in these studies was that despite the fact that it is locally infiltrative, it recurs less often than Ameloblastoma. However, surgical excision with adequate margin of adjacent normal tissue ensures total removal with no recurrence in most of our patients (fig. 8).

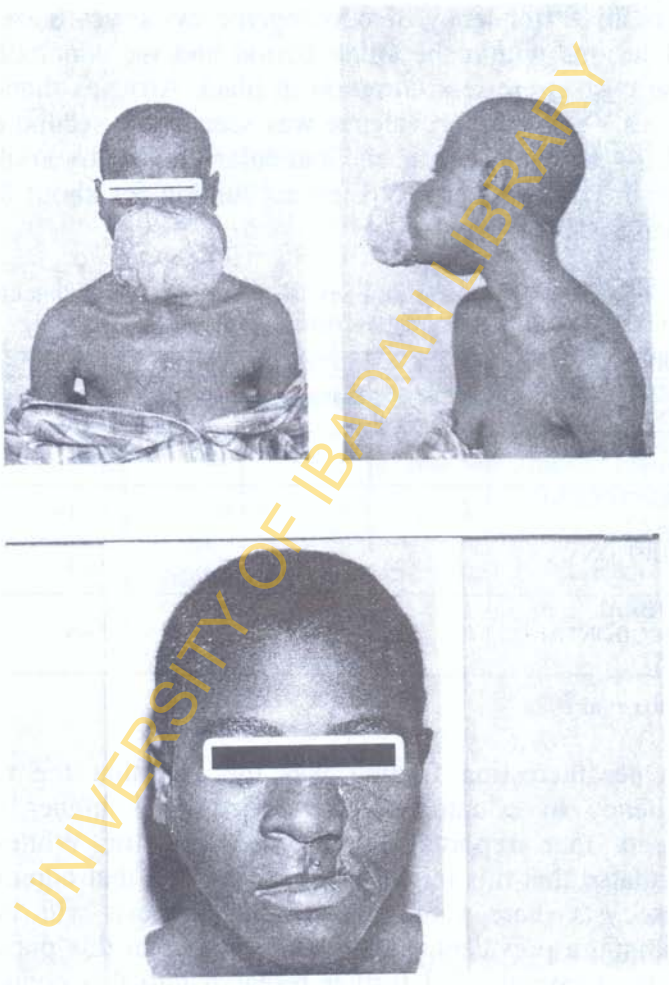


Fig. 8: Pre-operative and post-operative picture of a gigantic maxillary fibromyxoma

Odontogenic Cysts

Due to paucity of reasonable quantum of published data on odontogenic cysts in black Africans, we studied retrospectively, the clinical characteristics of these types of cysts in a set of patients seen at the University College Hospital, Ibadan over a fifteen-year period.[70] Our results showed that the relative frequency of odontogenic cysts was 8.8% of all oral lesions within the study period and we concluded that these cysts were less common in black Africans than in the Whites. The peak prevalence was seen in the second decade with 44% of the cases, and radicular and dentigerous cysts were the most frequently seen accounting for about 80% of patients (table 4).

Table 4: Frequency and Sex Distribution of Odontogenic Cysts from Ibadan

CYST TYPE	MALE	FEMALE	TOTAL	PERCENTAGE
RADICULAR CYST	21	18	39	61.9%
DENTIGEROUS CYST	3	9	12	19%
ODONTOGENIC KERATOCYST	4	5	9	14.3%
ERUPTION CYST	2	0	2	3.2%
LATERAL PERIODONTAL CYST	0	1	1	1.6%

Arotiba et al 1998[70]

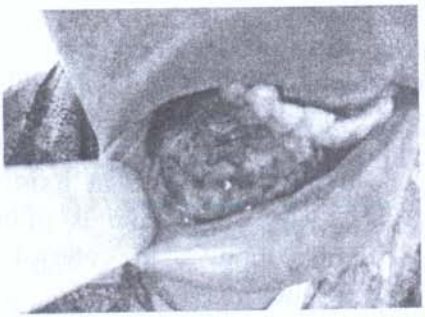
One interesting finding was the fact that the relative frequency of odontogenic keratocysts was higher in our patients than reported in the literature for Whites. We speculated that this might be due to the fact that odontogenic keratocysts share a similar aetio-pathogenesis with Ameloblastoma, a prevalent odontogenic tumour in this population and we recommended further research into this connection. Recent reports have shown that odontogenic keratocyst, because of its clinical characteristics should rather be classified as a tumour[31] which may explain these findings.

Oral Pyogenic Granuloma

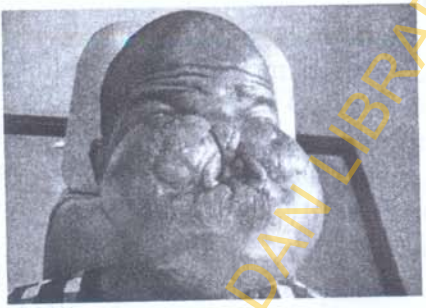
Oral pyogenic granuloma is an uncommon tumour-like inflammatory lesion of oral mucosa rarely reported in Africans previously. We studied a large series of this lesion in Ibadan. We established the fact that it is more commonly found on the gingivae (gums) and is often located in the lower anterior labial gingiva in contrast with the upper anterior regions in Caucasians.[71]

Oral Cancer

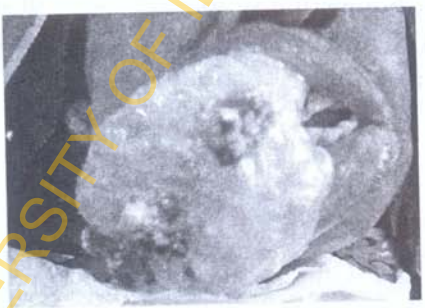
Cancer appears to be one of the most deadly human diseases. In fact, cancer causes more death per annum than HIV/AIDS. According to a WHO Report[72], malignant tumours (cancers) were responsible for 12% of nearly 56 million deaths worldwide. Over five million men and four million women developed malignant tumours and altogether 6.2 million died from the disease in the year 2000. The report also revealed that cancer has emerged as a major public health problem in developing countries, matching its effect in industrialized nations[72]. Oral cancer is one of the 8 leading cancers worldwide. It constitutes about 2 - 4 % of all malignancies in the United States of America[73], 1 - 2% in Britain[74], 3 % in Austalia[75] and 12 – 40% in India and South East Asia[24, 76].



(A) Intra-alveolar carcinoma of mandible



(B) Sarcoma of the jaws



(C) Carcinoma of the lips

Fig. 9: Oral cancer

In a retrospective study of pattern of oral cancer from the Ibadan Cancer Registry records between 1976 and 1995[39] my colleagues and I established the fact that oral cancers constituted 2.9% of all cancers seen in Ibadan and squamous cell

carcinoma was the most common, accounting for 43% of all oral cancers. In this study, we established further that for oral squamous cell carcinoma:

- the peak age-group was the 6th decade (51-60 years), a decade lower than that of the Europeans and Americans;
- males were more frequently affected than females;
- the site of high prevalence included palate (roof of the mouth), the tongue and the mandibular alveolus;
- in about half of the cases studied, risk factors like tobacco and alcohol consumption were not implicated, indicating indirectly that other aetiologic factors like nutrition and possibly viruses might play a more significant role in our population; and
- most of our patients presented late with advanced tumours thereby resulting in poor treatment outcome.

Consequent upon these findings, we recommended stepping up the campaign on oral cancer to raise awareness, encourage mass screening programmes, provide more centres for cancer treatment, and establish a health insurance scheme to reduce the financial burden of the high cost of treatment. It is unfortunate that the present National Health Insurance Scheme does not cover the treatment of tumours including cancer.

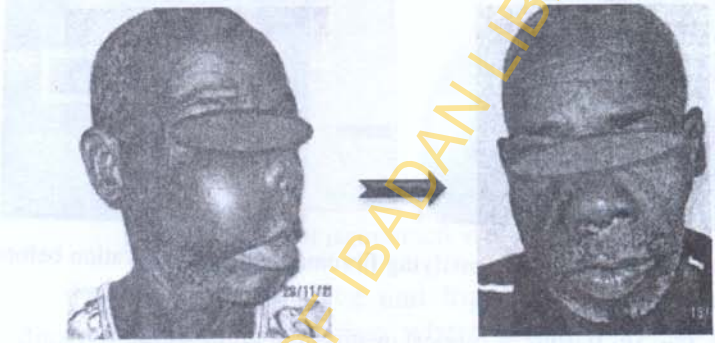
In another study on malignant tumours of the Antrum[77], it was established that one of the most common early symptom at presentation of antral carcinoma is a history of toothache. Dental practitioners should therefore have a high index of suspicion on seeing patients complaining of toothache or tooth mobility from maxillary molars or premolars which are related to the antrum but with no obvious clinical pathology on examination. In this same study, we recommended that due to the advanced nature of antral carcinoma at presentation in Nigeria, a multimodal therapy combining surgery, radiotherapy and/or chemotherapy should be the treatment of choice for most cases. In a recent review of hospital incidence of oral cancer in UCH, Ibadan[78], we also reported a trend

where more females and extremes of ages are increasingly being affected.

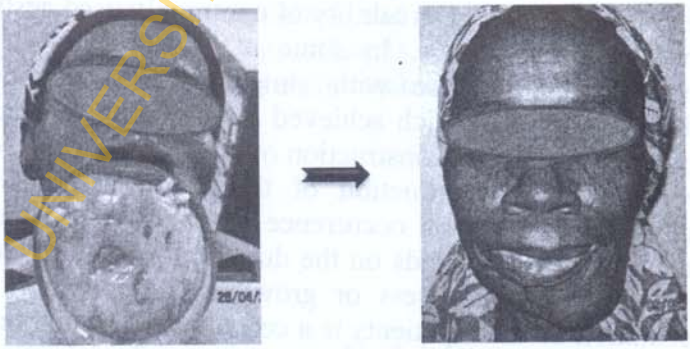
Reconstruction in Oral and Maxillofacial Surgery

Mr. Vice-Chancellor Sir, during my training period as a resident doctor, one of the most difficult experiences I personally went through was the management of patients after radical surgical procedures have been undertaken to fight these various enemies (oral tumours) at the gateway. Traditionally, the senior resident doctor is like the combatant foot soldier in first-line contact with the reality on ground and most often easily more accessible and approach-able to the patient. Each time, the euphoria of having successfully defeated these enemies soon disappeared when faced with the attendant post surgical disabilities that are inevitable consequences of getting rid of these tumours. It has a great analogy in the aftermath of physical wars where massive disruption of normal life pattern and infrastructures are hallmarks. Rehabilitation of the patients to a satisfactory level and acceptable quality of life becomes a great challenge, moreso in an environment with limited infrastructure, equipment or facilities and sometimes the technical support and know-how. Achieving good results therefore readily becomes a herculean task. It is this great challenge that prompted my colleagues and I into trying to report some of our efforts at PUTTING A SMILE ON THE FACE through reconstruction and rehabilitation of our patients after routing the ENEMY AT THE GATEWAY (fig. 10). I have had to collaborate a lot with my colleagues in Plastic and Reconstructive Surgery Unit in this endeavour in view of the large soft tissue and bone defects we frequently encountered, following the surgical removal of these tumours. We reported our experience with the use of pectoralis musculocutaneous pedicled flap, suggested some modifications based on our local experience, and recommended its use in head and neck reconstruction where tissue volume requirement is large [79]

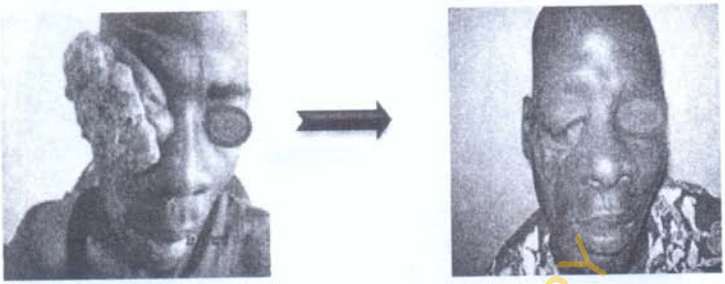
(A) 40 year old female with ameloblastoma of 10 years duration before and after surgery.



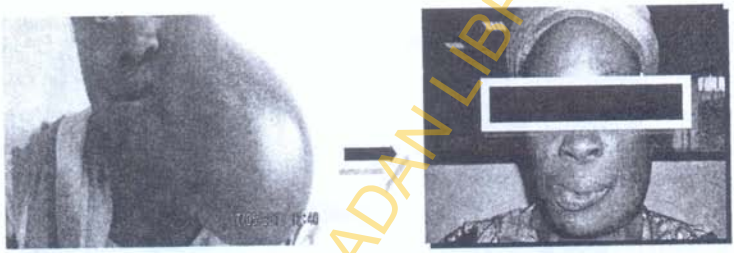
(B) 55 year old male with maxillary ameloblastoma of 12 years duration before and after surgery.



(C) 49 year old female with ossifying fibroma of 2 years duration before and after surgery.



(D) 35 year old male with squamous cell carcinoma of 7 months duration before and after surgery.



(E) 35 year old female with ossifying fibroma of 12 years duration before and after surgery.

Fig. 10: Results of surgical treatment of orofacial tumors

One main problem encountered in many of our patients with oral tumour needing jaw reconstruction is the non-availability and non-affordability of commonly used aesthetic reconstruction materials. In some of our cases, we have attempted to improvise with simple, cheap and locally available materials, which achieved a reasonably satisfactory degree of success in reconstruction of the oral mucosa and the lower jaws[80, 81]. Destruction of the jaws, especially the mandible, is a common occurrence in jaw tumours and the extent of damage depends on the duration of the tumour and the rate of aggressiveness or growth of the tumour. Late presentation of these patients is a commonly reported feature in our environment[40, 41, 59, 60] and there is often the need to resect and reconstruct the jaw. Reconstruction after ablative

surgery of the jaws is necessary to restore function, aesthetics, emotional and psychological well-being of the patient. In a review of a series of patients[82], we showed that free iliac bone graft proved to be a good reconstruction material with satisfactory functional and aesthetic results in low resource economy where facility and skill for micro vascular surgery are still limited (fig. 11).

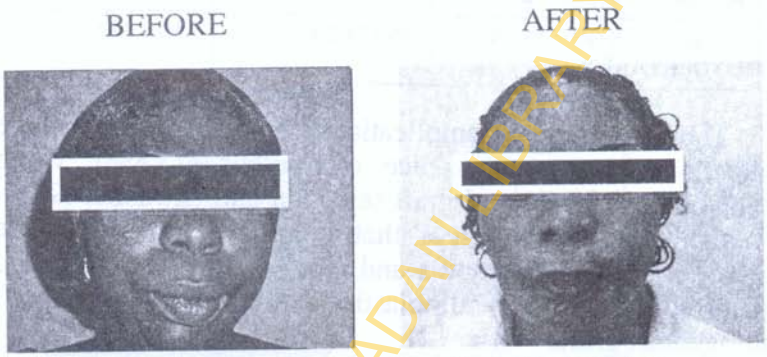


Fig. 11: Iliac crest reconstruction of mandibular defect

The cost of extensive and high-tech surgery is also a disadvantage in a situation where treatment is largely on "cash and carry" basis. In an audit of mandibular continuity defect reconstruction in our institution [82], only 65 out of the 82 patients with mandibular defect caused by orofacial tumours were reconstructed and bone grafts were used in 58.5% (n =48) patients. This is an improvement over the usual practice a decade earlier (table 5).

Table 5: Trends in Jaw Reconstruction in Ibadan

	1980-1984 (n=42)	2001-2007 (n=82)
NUMBER OF CASES RECONSTRUCTED	22(52.4%)	65(79.3%)
NUMBER OF CASES WITH AUTOGENOUS BONE GRAFT	2(4.8%)	48(58.5%)
NUMBER OF CASES WITH ALLOPLASTIC GRAFT	20(47.6%)	17(20.7%)
NO RECONSTRUCTION UNDERTAKEN	20(47.6%)	17(20.7%)

The common complications encountered included infections (21%), recurrence of tumour (13.8%), wound dehiscence (12.3%) and graft rejection and extrusion (9.2%). A significant finding was that recurrent disease occurred more in malignant tumours and graft rejection and extrusion occurred more when alloplastic grafts were used than in autogenous grafts [82] (fig. 12).

Fig. 12: Extrusion of steinmann's pin (alloplastic graft) in a patient

Challenges

A major challenge faced in our management of these various tumours was the late presentation of patients to the hospital. For example, 81% of our patients had stage 4 tumour at presentation in a series of oral squamous cell carcinoma

patients[39] (fig. 13). Unfortunately, treatment at this stage has poor outcome with little or no chance of a cure. This, coupled with failure to come back for follow up reviews was a major problem highlighted from our studies. The latter contributed to late detection of recurrences which conferred poor prognosis. Two main causes of this late presentation are ignorance and poverty. Arising from this is the difficulty in reconstruction and rehabilitation as a result of advanced tumours usually encountered in our environment due to late presentation.

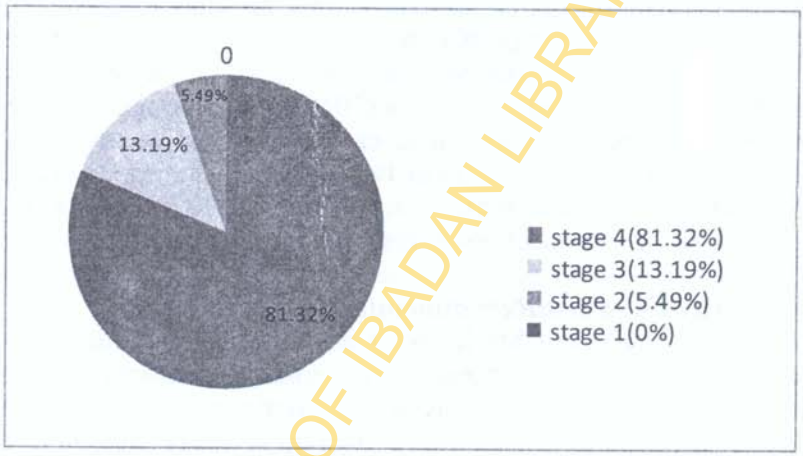


Fig. 13: Oral squamous cell carcinoma; clinical stage at presentation

Another major challenge is the "cash and carry" system of healthcare operating in our healthcare facilities. Most of our patients are poor and cannot afford the cost of treatment. They therefore seek for alternatives by patronizing prayer houses, herbal medicine and other "alternative medicine" practitioners. They eventually come back to the hospital after failed efforts with advanced tumours that have poorer prognosis or treatment outcome. Unfortunately, the present National Health Insurance Scheme (NHIS) is mostly restricted to the working class to the exclusion of the majority of the population and rather sadly, treatment of tumours is not covered.

An additional problem in patient's management is the non-availability of basic infrastructures, equipment and materials for early detection, treatment, reconstruction and rehabilitation of these patients. In a country where a 6- hour continuous electricity supply is not guaranteed, it is not particularly safe to plan a 12 to 20 hour micro-vascular surgery even when you have adequate skill, manpower and materials.

Inadequate funds for research are also a major problem. We had noticed and documented the fact that other risk factors might play a more important role than tobacco and alcohol in the aetiology of oral cancer in our environment. In order to investigate the role of some of these other risk factors (Human Papilloma Virus (HPV) and Vitamins) further in Nigerian patients with oral cancer, we had submitted a proposal for funding to one or two national funding agencies for more than a year without any response. This reflects the attitude of our government to research.

The Way Forward/Recommendations

Mr. Vice-Chancellor Sir, having gone through the clinical and epidemiological characteristics of orofacial tumours in our environment, treatment, outcome of treatment, and some of the difficulties encountered in managing these tumours, I hereby proffer the following steps as a way forward:

1. The role of malnutrition (especially deficiency of vitamins) and viral infections in oral cancer should be further investigated in our environment since we had identified the fact that a significant proportion of our patients with oral cancer are not habitual smokers or drinkers. This is an important step as current evidence suggests that some dietary components such as Vitamins C (ascorbic acid), A (retinol), and E, carotenoids and vegetables protect against cancer and as a result, chemo-prevention is now being advocated[83]. This will definitely be a cheaper option for fighting the enemy at the gateway in a poor-resource economy like Nigeria. Prevention is better and (more importantly) cheaper than cure.

2. The Federal Government should establish a well-structured National Oral Cancer Awareness Campaign Programme arising from a well-developed National Oral Health Policy to educate and create more awareness among the populace.
3. Oral screening programme for early detection of the disease should be incorporated in the National Health Policy at the primary healthcare level. There should be training of all primary healthcare givers to be able to recognize early clinical features of oral tumours/cancer and ensure prompt referral.
4. The government at the national and state levels should provide well-equipped and adequately-manned centres for cancer treatment to make cancer treatment accessible to all patients.
5. The present National Health Insurance Scheme should be reviewed to include treatment of orofacial tumours to reduce the financial burden of the high cost of treatment. In addition, the scheme should be widened in its coverage so that majority of Nigerians will have easy access to treatment.
6. The government should encourage research into Oral Health Diseases by providing adequate funds for research in this field as a disadvantaged-research area. It should also create a Trust Fund (like Education Trust Fund) for cancer treatment and research. A proportion of this Fund should be used to subsidize or totally take care of oral cancer patients.
7. A national protocol for diagnosis and treatment of oral cancer should be formulated and instituted in all treatment centres to ensure prompt treatment.

Training and Mentorship

Mr. Vice-Chancellor Sir, my role in the training and mentorship of my junior colleagues was thrown at me by the hand of fate due to the mass exodus of our teachers in the late eighties to the Gulf States. I crave your indulgence to briefly narrate a story incidental to this. The National Post Graduate Medical College had just withdrawn accreditation of University

College Hospital (UCH), Ibadan. After a meeting to deliberate on our fate as resident doctors, I led our team, as the Chief Resident, to the Chief Medical Director of the University Teaching Hospital, Ibadan, Professor O.O. Ajayi to demand for the creation of Dental Revolving Fund, which would eradicate the "Out of Stock syndrome" by ensuring adequate provision of dental consumables and consequently, enhance our training. Professor Ajayi, who initially refused to meet us, had to do so due to my persistence. He was so much surprised at my effrontery as a senior registrar "who was not sure of completing the training" because of the withdrawal of accreditation. He however, finally deferred to superior argument and approved our request based on the fact that it will improve patients' turn out and training. We later became good friends and he became one of my mentors.

I eventually passed my final (Part II) examination at first attempt in May 1989, but due to some bureaucracy, the University did not appoint me immediately despite the fact that there was only one lecturer on ground. Professor O.O. Ajayi then offered me a position as a Consultant Maxillo-facial Surgeon in the Hospital to prevent other sister institutions from engaging me before University of Ibadan. Immediately I was offered employment by the University, the only lecturer in the Department decided to take his accumulated leave, followed by a leave of absence for another year. I then had no choice but to offer training and mentorship, although I was a green horn. It was initially hard and rough as this translated to my being unable to publish for the first three years of my career because of my heavy workload both in the University and the Teaching Hospital. It gives me great pleasure to inform you that up to date, my colleagues and I have successfully trained seven Consultant Maxillofacial Surgeons, three (a Reader, a Senior Lecturer, and Lecturer 1) are current members of the Department. I have also had the opportunity to be involved in training, directly or indirectly, numerous resident doctors in four other sister departments in the Faculty, within the University and,

outside the University, the postgraduate training programmes of both the National Postgraduate Medical College and the West African College of Surgeons. I have so far supervised nine dissertations at the part two (final) postgraduate fellowship examination and I am currently supervising three others. I have also, as a committed member, promoted a virile and responsible unionism in ASUU and MDCAN.

What Next?

You cannot succeed in fighting against the wind.
Yet you can harness its power and do great things with it.
You cannot now be anywhere other than in this moment.
Yet you can transform this very moment into whatever kind of experience you wish to live.

You cannot stop the sun from setting.
Yet you can prepare yourself to make the very most of the new day that comes when the sun surely rises again.
You cannot stop the years from passing.
Yet you can fill each one of those years with a life that's rich in meaning.

There are many things beyond your control.
Yet you can live true to your most authentic purpose no matter what may come.
You cannot be sure of what the future will bring.
Yet you can choose right now, and always, to continue bringing your own unique beauty to life.

— (Ralph Marston)

Mr. Vice-Chancellor Sir, I hope, by the grace of God, to continue to combat the enemies at the gateway in order to put smile on faces through pursuing further research especially on environmental risk factors of relevance to our environment. I

intend to also draft others into this noble cause, through mentorship and offering of responsible leadership in my department. As the Holy Bible said in Mathew 11:12, "The Kingdom of God suffereth violence but the violent taketh it by force" – a vigorous pursuit of awareness campaigns will also be a major thrust of my future endeavour in combating the enemy at the gateway. To this end, we recently formed the Ibadan Oral Head and Neck Cancer Research Group. A successful Oral Head and Neck Cancer Awareness (OHNCAW) week in Ibadan, was recently organized by this new group.

Acknowledgements

According to the first book of Corinthians, Chapter 1 verse 7b (paraphrased): "What do I have that I did not receive? Now if I did indeed receive it, why should I boast as if I had not received it?" I am eternally grateful to the Omnipotent God, the Author and Giver of Life who has spared my life to see this day – the day the Lord has made in which we are glad and rejoicing in. I thank Him for finding me and redeeming me. To Him be all Glory, Honour and Praise forever more (amen).

I am also grateful to my institutions (The University of Ibadan and the University College Hospital, Ibadan), for the great opportunity offered me to contribute to knowledge and care. I am eternally grateful to my father (Pa Robert Olorunfemi Arotiba of blessed memory) and my loving mother (Madam Deborah Imsitan Arotiba) for being my first and greatest teachers who taught me to be hard-working, God-fearing and honest.

I am highly indebted to my uncle and mentor, Engineer J. B. Fadupin and his wife, Dr. (Mrs) Fadupin. Uncle, you have been a guardian and mentor and I appreciate all your efforts. I thank my teachers and mentors, Professor H. A. Ajagbe and his dear wife Mrs. Ajagbe, Professor O.O. Ajayi, Dr. B.O. Abiose (Uncle Toks) Dr. Idowu Koledade and Professor Arinola Sanya. I also express my sincere appreciation to all my teachers at both undergraduate and postgraduate levels

who imparted so much into my life; Professor J.O. Daramola, Dr. S. Kulasekara, Dr. Moronke Noah, Dr. S.P. Luthra, Dr. Bode Falomo, Professor J.O. Lawoyin, Dr. D.O. Lawoyin, Professors Ayotunde Ogunseyinde, E.A. Bamigboye, Bola Osifo, M.O. Olatawura, O.O. Olorunsogo, D.O. Oyebola, A.B.O. Desalu, A.O. Falase, Modupe Onadeko and Kikelomo Osinusi. Time and space will not permit me to list all your names but I am eternally grateful.

I cannot but pay a special gratitude to Professors M.T. Shokunbi and I.F. Adewole who offered great and inspirational leadership to me and under whom I served as Sub-dean, for their belief in me, support and encouragement which led to the creation of the Faculty under my tenure as sub-dean (Dentistry). I want to also register my gratitude and indebtedness to my colleagues and friends in the Academic Staff Union of Universities (ASUU) especially the executive members, both past and present, for comradeship, forth-rightness, tenacity and courage to continue to be a catalyst in the emergence of an enviable university.

My gratitude also knows no bound to colleagues from the University College Hospital, the Medical and Dental Consultants Association UCH, Ibadan, for their comradeship and support. I thank my colleagues in the Department: Professor Obiechina (who is also my teacher), Drs Bayo Fasola, Vicky Okoje, Victor Akinmoladun, Deola Olusanya and 'Lere Gbolahan; our ambassadors-at-large: Drs Dimeji Akadiri, Obi Obimakinde, Sam Udeabo and Femi Oluteye, as well as the Senior Registrars in my department: Titi Ibiyemi, Tim Aladelusi, Wasiu Olawole and Sam Agboola for offering me a conducive environment through their cooperation, collaboration and fellowship. They have also been loyal comrades on the "battle field".

I pay special tribute to my colleagues in the Department of Anaesthesia, especially Dr. (Mrs) Patience T. Sotunmbi and her team of "Maxillofacial" Anaesthetists who always work closely with us when it is convenient and when not so convenient. I am grateful for the collaboration and fellowship of the plastic surgery team led by Professor O.M. Oluwatosin

and the orthopaedic surgery team: Professor Alonge and Mr. Ogunlade (FRCS).

I thank the Ibadan dental family including: all the lecturers/consultants especially Drs. Obafunke Denloye, Juliana Taiwo, Olubunmi Bankole, B. Kolude, Elizabeth Dosumu, all the resident doctors, nurses, dental nurses/technicians, technologists, therapists, records officers, cancer registry staff led by Mrs. Fabowale, Faculty Officer (Patrick Obi), and his team in the Faculty of Dentistry, for their support and encouragement. I am grateful and indebted to my professional colleagues from sister dental schools in Ife, Lagos, Benin, Port Harcourt Maiduguri and lately, Aminu Kano Teaching Hospital, for their support, especially my research collaborators. I am especially indebted to Dr. R.A. Adebola, the Head, Dental & Maxillofacial Surgery Department of Aminu Kano Teaching Hospital for facilitating a sabbatical post in his institution from which some of these studies emanated.

I cannot but be grateful to all my past and present students and resident doctors in training at the Dental School, Ibadan, for encouraging and allowing me play positive roles in their lives. I acknowledge and appreciate the efforts of the Inaugural Committee members ably led by Dr. (Mrs) Mojirade Ajayi. I am also indebted to all those who helped in one way or the other during the preparation of this lecture: Professor Oyetade, Dr. A.A. Olaitan, Drs. Tosin Tokede, Foluso Olajide, Akin Adisa, Ayo Awopegba, and Ope Sigbeku.

I am grateful to my Dean, Professor Dupe Arowojolu and my Provost, Professor O.O. Akinyinka for nominating me for this honour. I thank my colleague who has stayed by me through thick and thin, Dr. Wole Dosumu and his wonderful family. I will be unjust if I do not specially acknowledge my immediate past Dean, Professor Gbemi Oke. When the dental programme was almost collapsing because of the emigration of our teachers to Saudi, there was a point in time when she and Professor Obiechina were the only academic staff on

ground. She provided the necessary leadership—a good role model for us—and that was why we were able to weather the storm. Thank you ma and may the Lord perfect all that concerns you and grant you all that you desire (amen).

I appreciate my caring Pastor and his lovely wife, Pastor Oluranti and Sister Rosetta Oyedele who have been nurturing my spiritual man and my loving family—the entire members of Christ the Day Spring Church, Samonda, Ibadan. I appreciate my siblings, Mrs. C.B. Ejiko, Professor G.T. Arotiba, Pastor (Architect) Abodunde Arotiba, Barrister Oluwatimilehin Arotiba, and Mrs. Yetunde Arotiba for we have all gone through thick and thin together, but we thank the Almighty God for keeping us till now. I acknowledge the fellowship of the INNER CIRCLE of friends, University of Ibadan. I also appreciate the support of my town union, Mopa Welfare Society, Kogi State represented here by the Chairman, Mr. & Mrs. A. Oloyede.

Finally, I pay a special tribute to the "Lady and Boys Company", who through their immense support, prayers and love have kept the "home front" during all the time of my service in continually combating the enemy at the gateway and putting a smile on the face. My loving jewel of inestimable value: Oreoluwami Oluwafunmilayo, the boys company: Fiyinfoluwa Adegbayi, Temiloluwa Toluwanimi, and Oluwatomiloba Boluwatife and their cousin, Ifeoluwa Dipe. I thank you all for your endurance during my periodic absence from home in service to humanity. Our God will surely reward your labours of love.

Mr. Vice-Chancellor Sir, I thank you and this wonderful audience for your patience and attention. God bless you all. Amen.

Notes

1. Akinosi, J.O. (2007) Dental education in Africa: Past, present and future. *Nig Dent J.* 15: 110 – 112.
2. Odusanya, S.A. (1993) Dental education in Nigeria: A guest lecture delivered at the College of Medicine, University of Lagos on Wednesday, July 14, CMUL Press, Idi-araba Lagos, Nigeria.
3. *http://www.ehow.com/printabout5421409oral-surgery-history.html*
4. Jeboda, S.O. (2008) *The genesis of an academic community dentist*. University of Lagos Press: University of Lagos inaugural lecture series Pg 2.
5. Willis, R.A. (1967) *Pathology of tumours* (4th edition) London; Butterworth & Co pg 1.
6. Burrow, H. (1954) Cancer, In: *History and conquest of diseases*: WR Betts (ed.) Norman 260 – 285.
7. Betts, W.R. (1957) Historical aspect of cancer. In: *Cancer*, RW Raven (ed.) Vol. 1 London: Butterworth and Company Publishers Ltd.
8. Issels, J. (1975) *Cancer a second opinion*. Hodder and Stonghton: London pp 23.
9. Betts, W.R. (1957) Historical aspect of cancer. In: *Cancer*, RW Raven (ed.) Vol. 1 London: Butterworth and Company Publishers Ltd. pp 1-5.
10. *The Holy Bible*, New International Version.
11. Hiroyuki Kimamoto (2010) Molecular alterations in the development and progression of odontogenic tumours. *Oral Med Pathol* 14: 121-130. doi: 10.3353/omp 14. 121.
12. Sugerman, P.B. and Savage, N.W. (1999) Current concepts in oral cancer. *Australian Dent J.* 44(3):147 – 156.
13. Umai Devi, P. (2005) *Health Administrator* Vol XVII (1):16 – 24 pg.
14. Berenblum, I. and Shubik, P. (1949) An experimental study of the initiating stage of carcinogenesis and a re-examination of the somatic mutation theory of cancer. *Brit J. Cancer*. 3: 109 – 117.
15. Cross, S.H. and Bird, A.P. (1995) CpG islands and genes. *Curr Opin Genet Dev* 5(3): 309 - 314.
16. Nordling, C.O. (1953) A new theory on the cancer-inducing mechanism. *Brit J. Cancer*. Vol VIII 68 - 72.

17. Knudson, A.G. (Jr.) (1971) Mutation and cancer: Statistical study of Retinoblastoma. *Proc. Natl Acad Sci*, USA 64(4):820 – 823.
18. Wynder, E.L. and Stellman, S.D. (1977) Comparative epidemiology of tobacco related cancer. *Cancer Research*. 37: 4608- 4622.
19. Schmidt, W. and Popham, R.E. (1981) The role of drinking and smoking in mortality from cancer and the other causes in male alcoholics. *Cancer* 47: 1031 – 1041.
20. Rothman, E. and Keller, A.Z. (1972) The effect of joint exposure to alcohol and tobacco on the risk of cancer of the mouth and pharynx. *J. of Chronic Dis*. 25: 711 – 716.
21. McLaughlin, J.R. (1988) Dietary factors in oral and oropharyngeal cancer. *Journal of National Cancer Institute*. 80: 1237 – 1243.
22. McCoy, C.D. and Wynder, E.L. (1979) Aetiological and preventive implications in alcohol carcinogenesis. *Cancer Res* 39: 2844 – 2850.
23. Ogunbodede, E.O., Afolayan, M.O., Arotiba, J.T. (1997) Oral cancer: A review of risk factors, diagnosis, prevention and management. *Nig Med. J*. 32: 80 – 84.
24. Paymaster, J.C. (1957) The problem of oral, oropharyngeal and hypopharyngeal cancinoma in India. *Brit. J. of Surgery*. 44: 467 – 472.
25. Vogler, W.H., Lloyd, W.H., Milmore, B.K. (1962) A retrospective study of the aetiological factors in cancer of the mouth, pharynx and larynx. *Cancer* 15: 246 – 258.
26. Hiramaya, T. (1996) An epidemiological study of oral and pharyngeal carcinoma in Central and South East Asia. *Bull W.H.O*. 34: 41 - 69.
27. Dimitroulis, G. and Avery, B.S. (1998) *Oral Cancer: A synopsis of pathology and management* Oxford, Butterworth-Heinemann's Reed Educational and Professional Publishing Ltd. pgs 4 – 6.
28. Cox, M.F., Scully, C., and Maitland, N. (1991) Viruses in the aetiology of oral carcinoma? Examination of the evidence. *Br J. Oral Maxillofac Surg*. 29: 381.
29. Wynder, E.L., Bross, I.J., and Feldman, R.M. (1957) A study of aetiological factors in cancer of the mouth. *Cancer*. 10(6): 1300 – 1323.
30. Tyldesley, W.R. (1982) Malignant transformation of oral lichen planus. *Brit Dent J*. 153:329.

31. WHO Classification of Oral Tumours (2005).
32. Sawyer, D.R., Mosadomi, A., Page, D.G., Svirsky, J.A., and Kekere-Ekun, A.T. (1985) Racial predilection of Ameloblastoma: A probable answer from Lagos (Nigeria) and Richmond, Virginia, (USA). *J. of Oral Med* 40:27 – 31.
33. Singh, P. and Cook, J. (1956) Tumours of the jaws in Uganda. *East Afr. Med. J.* 33:383-390.
34. Davies, A.G.M. and Davies, J.N.P. (1960) Tumours of the jaws in Uganda, *Africans Act Un. Int. Cancer*; 116:1320.
35. Kovi, J. and Laing, W.N. (1966) Tumours of the mandible and maxilla in Accra Ghana. *Cancer.* 19: 1301 – 13045.
36. Anand, S.V., Davey, W.W., and Cohen, B. (1967) Tumours of the jaws in West Africa. *Brit J. of Surg.* 54:901 – 917.
37. Mosadomi, A. (1975) Odontogenic tumours in an African population. *Oral Surg. Oral med. Oral Pathol Radiol Endod.* 40:502 – 521.
38. Oyango, J.F., Awange, D.O., and Wakiaga, J.M. (1995) Oral tumours and tumour-like conditions in Kenya: Histological distribution. *East Afr. Med. J.* 72:560 – 563.
39. Arotiba, J.T., Obiechina, E.A., Fasola, O.A., Fawole, O.I., and Ajagbe, H.A. (1999) Oral squamous cell carcinoma: A review of 246 Nigerian cases. *Afr. J. Med. & Med Sci.* 28:141 – 144.
40. Arotiba, J.T., Adebola, R.A., Ajike, S.O., Adeola, D.S. and Ladeinde, A.L. (2003) Orofacial tumours and tumour-like lesions in Kano, Nigeria. *Nig J. of Surg Res.* 5: 134 – 139.
41. Arotiba, J.T., Ogunbiyi, J.O., and Obiechina, A.E. (1997) Odontogenic tumours: A 15 year review from Ibadan, Nigeria. *British J. Oral & Maxillofac. Surg.* 35: 363 -367.
42. Ladeinde, A.L., Ajayi, O.F., Ogunlewe, M.O., Adeyemo, W.L., Arotiba, G.T., Bamgbose, B.O., and Akinwande, J.A. (2005) Odontogenic tumours: A retrospective analysis of 319 cases in a Nigerian teaching hospital. *Oral Surg. Oral Med Oral Pathol Oral Radiol Endod* 99: 191 – 195.
43. Regezi, J.A., Kerr, D.A., and Courtney, R.M. (1978) Odontogenic tumours: Analysis of 706 cases. *J. Oral Surg*; 36: 771 – 778.
44. Daley, T.M., Wysocky, G.P., Pringle, G.A. (1994) Relative incidence of odontogenic tumour and oral and jaw cysts in a Canadian population. *Oral Surg. Oral Med. Oral Pathol* 77: 276 -280.

45. Odukoya, O. (1995) Odontogenic tumours: Analysis of 289 Nigerian cases. *J. Oral Pathol med* 24: 454 – 457.
46. Adebayo, E.T., Ajike, S.O., Adekeye, E.O. (2002) Odontogenic tumours in children and adolescents; A study of 78 Nigerian cases. *J Craniomaxfac surg*. 30: 267 – 272.
47. Wu, P.C. and Chan, K.W. (1985) A survey of tumours of the jawbones in Hong Kong Chinese, 1963 -1982. *British J. Oral Maxillofac. Surg*. 23: 92 – 102.
48. Jing, W., Xuan, M., Lin, Y., Wu, L., Zheng, X., Tang, W., Qiao, J., and Tian, W. (2007) Odontogenic tumours: A retrospective study of 1642 cases in a Chinese population. *Int J. Oral Maxfac surg* 36: 20 – 25.
49. Mosqueda-Taylor, A., Ledesma-Montes, C., Caballero-Sandoval, S., Portilla-Robertson, J., Ruiz-Godoy Rivera, L.M. and Meneses-Garcia, A. (1997) Odontogenic tumours in Mexico: A collaborative retrospective study of 349 cases. *Oral Surg, Oral Med Oral Pathol, Oral Radiol Endod*. 84: 672 – 675.
50. Buchner, A., Merrell, P., and Carpenter, W.M. (2006) Relative frequency of central odontogenic tumours: A study of 1,088 cases from Northern California and comparison to studies from other parts of the world. *J. Oral Maxillofac Surg*. 64: 1343 – 1352.
51. Small, L.A. and Waldron, C.A. (1955) Ameloblastoma of the jaws. *Oral Surg Oral Med Oral Pathol* 8: 281 – 297.
52. Ajagbe, H.A. and Daramola, J.O. (1987) Ameloblastoma: A survey of 199 cases in the University College Hospital, Ibadan, Nigeria. *J Nat Med Assoc*. 79: 324 – 327.
53. Ivy, R.H. and Churchill, H.R. (1930) The need for a standardized surgical and pathological classification of tumours and anomalies of dental origin. *Trans. Americ. Assoc. Dental Schools*. 240, Cited from Lucas, R.B. Pathology of Oral Tumours (1984).
54. Shear, M. and Singh, S. (1978) Age standardized incidence of Ameloblastoma and dentigerous cyst in the Witwaterstrand, South Africa. *Community Dent Oral Epidemiol*. 6:195.
55. Akinosi, J.O. and Williams, AO. (1969) Ameloblastoma in Ibadan, Nigeria. *Oral Surg* 27: 257 – 265.
56. Daramola, J.O., Ajagbe, H.A., and Oluwasanmi, J.O. (1975) Ameloblastoma of the jaws in Nigerian children. *Oral Surg* 40: 458 – 463.

57. Ajagbe, H.A. and Daramola, J.O. (1987) Ameloblastoma: A survey of 199 cases in the University College Hospital, Ibadan, Nigeria. *J Nat Med Assoc*. 79: 324 – 327.
58. Adekeye, E.O. (1980) Ameloblastoma of the jaws: A survey of 109 Nigerian patients. *J. Oral Surg*. 38: 36 – 41.
59. Olaitan, A.A., Adeola, D.S. and Adekeye, E.O. (1993) Ameloblastoma: Clinical features and management of 315 cases from Kaduna, Nigeria. *J. Cranomaxillofac Surg* 21: 351-355.
60. Olaitan, A.A., Arole, G. and Adekeye, E.O. (1998) Recurrent Ameloblastoma of the jaws: A follow up study. *Int J Oral Maxillofac Surg*. 27: 456 – 460.
61. Arotiba, J.T., Ajike, S.O., Akadiri, O.A., Fasola, A.O., Akinmoladun, V.I., Adebayo, E.T., Okoje, V.N., Kolude, B., and Obiechina, A.E. (2007) Odontogenic tumours: Analysis of 546 cases from Nigeria. *Indian J. Maxillofac. & Oral Surg*. 6:44 – 50).
62. Arotiba, G.T., Ladeinde, A.K., Arotiba, J.T., Ajike, S.O., Ugboko, V.I., and Ajayi, O.F. (2005) Ameloblastoma in Nigerian children and adolescents: A review of 79 cases. *J. Oral Maxillofac Surg*. 63:747 – 751.
63. Arotiba, G.T. and Arotiba, J.T. (1998) Anatomic classification of intraosseous Ameloblastoma as a guide to surgical management. *East African Medical Journal* 75:406 – 410.
64. Arotiba, G.T., Arotiba, J.T., and Taiwo, A.O. (2010) Biologic, anatomic, and clinical considerations in the management of classic intraosseuos Ameloblastoma of the jaws. *Nig Quart J. Hosp Med*. 2:55 – 63.
65. Arotiba, J.T., Mohammed, A.Z., Adebola, R.A., Adeola, D.S., Ajike, S.O., and Rafindadi, A.H. (2005) Ameloblastic carcinoma: Report of a case. *Nig J. of Surgl Res*. 7: 222-225.
66. Ajagbe, H.A., Daramola, J.O., Junaid, T.A., and Ajagbe, A.O. (1985) Adenomatoid odontogenic tumour in a black African population: Report of thirteen cases. 43: 683 – 687.
67. Arotiba, J.T., Ogunbiyi, J.O., and Ajagbe, H.A. (1995) Adenomatoid Odontogenic Tumour in Ibadan, Nigeria. *East Afr. Med J*. 72:783 – 786
68. Arotiba, G.T., Arotiba, J.T., Olaitan, A.A., and Ayayi. O.F. (1997) Adenonatoid odontogenic tumour: An analysis of 57 cases in a black African population. *J. Oral Maxillofac Surg*. 55: 146 – 148.

69. Akadiri, O.A., Arotiba, J.T., Ajike, S., Fasola, A.O., and Kolude, B. (2008) Odontogenic tumour in Nigerian children and adolescents. *Nigerian J. Surgical Sciences*. 18; 77 – 87.
70. Arotiba, J.T., Lawoyin, J.O., and Obiechina, A.E. (1998) Pattern of occurrence of odontogenic cysts in Nigerians. *East African Medical J*. 75: 664 – 666.
71. Lawoyin, J.O., Arotiba, J.T. and Dosumu, O.O. (1997) Oral Pyogenic granuloma: A review of 38 cases from Ibadan, Nigeria. *British J. Oral & Maxillofac. Surg*. 35: 185 – 189.
72. *http://www.who.int/mediacentre/news/releases/2003/pr27/en/* (retrieved 22/05/2011).
73. Krutchkoff, D.J., Chen, J., Eissenberg, E., and Katz, R.V. (1990) Oral cancer: A survey of 566 cases from the University of Connecticut Oral Pathology Biopsy Service 1975 – 86. *Oral Surg. Oral Med. Oral Pathol*. 70:192 – 198.
74. Binnie, W.H. (1976) A perspective of oral cancer. *Proc. Roy. Soc. Med*. 69: 737 – 740.
75. Fowler, G. Reade, P.C. and Radden, B.C. (1980) Intra oral carcinoma in Victoria. *Med. J. Austr*. 2: 20 – 22.
76. Sankaranarayanan, R. (1990) Oral cancer in India: An epidemiological and clinical review. *Oral Surg. Oral Med. Oral Pathol*. 69:325 – 330.
77. Campbell, O.B., Adeosun, A.B. Arotiba, J.T., Akinlade, B.I. and Obed, R.I. (2000) Management of malignant tumours of the maxillary antrum in Ibadan, Nigeria. *Nigerian Journal of Clinical Practice*. 3: 1-4.
78. Olusanya, A.A., Arotiba, J.T., Lawal, A.O., and Akinmoladun, V.I. (2010) Trends of oral cancer in the University College Hospital, Ibadan, Nigeria. *Nig Dent J*. 18(1): 24 – 27.
79. Oluwatosin, O.M., Abikoye, F.O., Adegboye, V.O., Brimmo, A.I., and Arotiba, J.T. (2000) A review of pectoralis musculocutaneous Island flap in head and neck reconstruct-tion in Ibadan. *Nig J Surg Res* 2: 16 – 20.
80. Fasika, O.M., Arotiba, J.T., and Fasola, A.O. (1996) Oral cavity onlay grafting using foam impregnated with honey: A case report. *Afr J. Med & med Sci* 25:297.
81. Obiechina, A.E., Fasola, A.O., and Arotiba, J.T. (2001) Combined acrylic and stainless steel in mandibular reconstruction. *Nigerian Journal of Health Sciences* 1: 42-45.

82. Arotiba, J.T., Obimakinde, O.S., Ogunlade, S.O., Fasola, A.O., Okoje, V.N., Akinmoladun, V.I., Sotunmbi, P.T., and Obiechina, A.E. An audit of mandibular defect reconstruction methods in a Nigerian tertiary hospital. *Niger Postgrad Med J.* (in Press).
83. Tanaka, T. (1995) Chemoprevention of oral carcinogenesis. *Oral Oncol, Euro J. Cancer.* 31B (1) pp 3 – 15.

BIODATA OF
PROFESSOR JUWON TUNDE AROTIBA

Professor Juwon Arotiba was born in Mopa, Mopamuro Local Government Area of Kogi State on 13th December, 1957. He attended ECWA primary school, from 1965-1970 and ECWA secondary school from 1971 -1975 both in Mopa, Mopamuro LGA Kogi state. Thereafter, he went to Kwara State College of Technology, School of Basic Studies, Ilorin from 1975 -1977. He gained admission into the University of Ibadan in 1978 to study dentistry and graduated with a BDS Degree in 1983.

In his quest for specialized skill in oral and maxillofacial surgery, Professor Arotiba came back for his residency training in the University College Hospital, Ibadan in 1987 and obtained the fellowships of the F.M.C.D.S. National Postgraduate Medical College of Nigeria in 1992 and F.W.A.C.S. West African Postgraduate Medical College in 1997. In the year 2007, he obtained the Master of Science (M.Sc.) in Epidemiology and Biostatistics from this great University of Ibadan.

Professor Arotiba was a part-time lecturer in the Department of Oral and Maxillofacial Surgery, College of Medicine, University of Ibadan from April 1990 to July 1992. He was appointed a Lecturer 1 in August 1992, a Senior Lecturer in October 1996 and a Reader in October 2002. In October 2006, he was promoted to a full professor in the Department of Oral and Maxillofacial Surgery. Professor Arotiba served the University Community in various capacities as Departmental Coordinator, Acting Head and Head of Department, Sub-dean (Dentistry), Sub-dean Postgraduate (Dentistry), a member of Academic Board, College of Medicine, member of Senate, a member of the University Admission Committee, Departmental Representative on Junior Staff Promotion Panel and Faculty and College Promotion Panels for Academic Staff.

In the year 2006, Professor Arotiba was awarded the Mac Arthur grant fellowship to School of Dental Medicine, University of Pennsylvania, Philadelphia, United States of America. Professor Arotiba belongs to many professional bodies. He was the first National Vice-President, Nigerian Dental Association from 1995 - 1997. He was a member of the Faculty Board of Dental Surgery, West African College of Surgeon (2002-2006); foundation member and current Vice-President, Nigerian Association of Oral and Maxillofacial Surgeons. He is also a fellow of the International Association of Oral and Maxillofacial Surgeon; Associate Member, British Association of Oral and Maxillofacial Surgeons; Member, Faculty Board of Dental Surgery and member of senate National Postgraduate Medical College of Nigeria from 1998-2005 and 2007 to date; and Vice-President, Nigerian Osseointegration and Dental Implantology Society (NODIS). Professor Arotiba is currently the Vice-Chairman of the Medical and Dental Consultant Association of Nigeria (MDCAN), UCH Branch. Professor Arotiba is an active member of Academic Union of Nigerian Universities (ASUU). He was a member of the Executive (Auditor) between 1998 and 2003.

Professor Arotiba has over 70 publications to his credit. He is happily married to Olufunmilayo Oreoluwa Arotiba (nee Oba) and they are blessed with children.