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THE ONE HUNDRED AND TWENTY-SECOND (122ND)
INAUGURAL LECTURE

"A PLASTIC AND RECONSTRUCTIVE SURGEON IN A DEVELOPING COUNTRY: PRACTICE, PROBLEMS AND PROSPECTS"

BY

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Preamble

Mr Vice Chancellor,

I give Almighty Allah (SWT) all the glory for giving me the opportunity to present the 122nd Inaugural Lecture of our great university. I am overwhelmed with joy for this singular opportunity. In the history of the Department of Surgery, since its existence for over 3 decades, this will be the 2nd inaugural lecture to be delivered by a professor in the Department of Surgery. At this point, I must express my profound gratitude to the immediate past Vice-Chancellor of this great University, Professor Is-haq O. Oloyede for finding me appointable a professor of surgery, without which I would have not been qualified to be the inauguree of today's occasion. In the history of plastic surgery in Nigeria, this will probably be the 2nd inaugural lecture to be delivered by a professor of surgery in the specialty of plastic and reconstructive surgery in Nigeria and probably in the West African sub-region. To the best of my knowledge, the 1st inaugural lecture was delivered in November 2007 at the University of Ibadan by Professor O. M. Oluwatosin

What is Plastic Surgery and who is a Plastic Surgeon:

The word '*plastic*' of Plastic Surgery is coined from the word "*plastikos*" – a Greek word meaning to repair or reconstruct. Some have argued that the word 'plastic' is used for a plastic surgeon because we use "Z-plasties" a lot for reconstructive surgeries. Some lay people (both Caucasians and Blacks) however believe that we use

"plastic" called "*Ike*" in Yoruba language for our reconstructive surgery.

We use plastics in plastic surgery, but most of these "plastics" are made of silastic which can be used as implants in breast reconstruction and also elastomers which can be used as explants in facial reconstruction. It has often been thought that there is little or no place for plastic surgeons in the tropics, however there are similarities and profound differences in plastic surgery as seen and practiced in advanced countries and as seen and practised in the developing countries.

A plastic surgeon is an ubiquitous surgeon whose practice of surgery is not limited to any region of the body. He works around from the head to the toe. He is seen and found everywhere. His area of coverage includes: Management of Burn and its Complication; Congenital absence and deformities; Reconstructive surgery after trauma and ablation of skin or soft tissue tumours; Micro-vascular surgery; Re-implantation surgeries; Cosmetic surgeries; others such as Chronic leg ulcers, scars of hypertrophic and keloid origin, lymphedema, tribal marks, tattoo marks etc. Thus a plastic and reconstructive surgeon finds himself working, operating and collaborating research virtually with all other specialists within the faculty of clinical sciences.

As I proceed in my presentation, I shall showcase some of these interdisciplinary reconstructive procedures within my short period of practice.

Burn and its Major Complications

Burn injury is one of the most devastating injuries anyone can sustain and remain alive. Burn is more traumatic and emergent than most other emergencies. The utilisation of resources for burnt patients is extra ordinarily high when compared to other trauma victims. The morbidity and mortality in this part of the world is still very high and for now in the West African sub-region, it is better prevented than treated.

There are 138 burn centres in the USA in the early year 2000 and 21 in Canada which are distributed to population density and contain a total of 1,951 beds[1]. Nigeria with a population of about 160 million is yet to have a single burn centre, though there has been very few burn units spread across the nation. The commonest cause of mortality (death) in burn patient is infection. A situation where a burn patient is being managed in the open ward where you have other patients in other specialties with varying degrees of infected clinical conditions, the risk of a burn patient coming down with septicaemia is unavoidable. This is the main cause of very high mortality in burn patients in Nigeria and the West-African sub-region.

FIGURE 1: Burn patient being managed in the open ward

Adigun and Oluwatosin et al in 2004 reviewed the survival after a major burn at the University College Hospital, Ibadan[2]. I have not come across a similar study in Nigeria, as at the time this study was done, with objective survival figure in the year 2004.

The LA_{50} value is burn size that is lethal in 50% of those injured (or the TBSA associated with 50% mortality). In our study, in the overall group, the value was 68% while in those with inhalational injury the value was 53% [2]. Of the variables considered in our study, TBSA was the most singular determinant of mortality. This value however falls short of that from some centres in the developed world where some have concluded that mortality has so decreased in massively burnt to the extent that all patients should be considered as candidates for survival. We are very far away

to move close to that mark. What we need in Nigeria to start moving is to have burn units in every institution where major burn injuries are being managed and then to have burn centres spread across the geo-political zones of this country. Adigun et al in another study of inhalational injury in burn patients reported an incidence of 16% which is similar to the 2.5 – 21% reported in the literature by other workers [3]. It is said that apparently 80% of fire related deaths result not from burn injury but from the inhalation of toxic product of combustion including carbon monoxide and cyanide. In our study, we recorded mortality of 78% which falls within the range of 19 – 84% reported in the literature[3].

I will like to share my experience in the management of burn patients with special aetiologic factors.

Burn and Adulterated Kerosene

Towards the end of the year 2001, certain parts of the country witnessed the epidemic of burn injuries sustained from domestic use of kerosene with varying casualties. Thirty-three patients were managed by my unit over a period of 5 weeks. There were more females and half of the patients were below 30 years of age. The mean total burn surface area (TBSA) was 32.3%. Twelve patients died with a crude mortality rate of 41.4% [4]. This crude mortality rate was high compared with the result published by Fasika (35%) [5], Olabanji et al (21.8%) [6] and Oluwasanmi (18%) [7] in their various studies on burn mortality in Western Nigeria.

None of our patients had early or late skin grafting d

one to cover their wounds. They were all managed in the open wards where other very septic patients were being managed. The 12 patients that died succumbed to overwhelming infection. What we need to combat the high mortality is a burn unit in our centre UITH, Ilorin.

Burn Disaster from Road Traffic Crash

In a road traffic crash that occurred in Eyenkorin area of Ilorin, 28 seriously burnt patients were brought to the emergency room of our hospital. Many of them could not be managed on hospital beds because there were only 14 bed spaces for surgical and medical emergencies. Some of them were put on examination couches, stretchers, and even wheel chairs. Four patients died (14.3%). They sustained burn injury ranging from 78 – 100% [8]. The remaining 24 (85.7%) requested to be transferred to a medical centre nearest to where they were living. They were however stabilised by the 5^{th} – 8^{th} day post burn injury before the transfer.

FIGURE 2: Cross section of burn patients at the temporary hospital site

Burn and Epilepsy

Burn injury caused by seizure is a serious cause of morbidity in people with epilepsy. Such burns are usually scalds and more often occur while the victims are performing daily activities at home. Over a 5-year period we had managed 2 patients who sustained burn injury as a result of epilepsy. They eventually had various types of amputation of their extremities [9]. This degree of morbidity is uncommon in reported cases of epileptic patients with burn injury. Our people must be educated that epilepsy is not an infectious disease and that it responds to orthodox medications.

FIGURE 3: Amputation from burn injury in an epileptic (a) before and (b) after skin grafting

Major Burn Injury from Lightning Strike

Lightning can cause burn injury; rarely can it cause a major burn as shown in figure 4 [10, 11].

FIGURE 4: Major burn injury from lightning strike

Burn and Chemical Attack

Chemical burn, especially with sulphuric acid is not uncommon in the western and eastern parts of Nigeria. We have managed patients who were victims of acid bath each sustaining major and deep burn injuries with loss of parts of the body.

FIGURE 5: Effects of chemical burns

CONGENITAL ABSENCE AND DEFORMITIES

Orofacial Anomalies

Clefts of either the lip and / or the palate [CL(P)] are the most frequent congenital malformation of the head and neck region with a combined overall prevalence of approximately 1 in 700 (WHO 2002). The aetiopathogenesis of these abnormalities are complex and involve several candidate genes [12, 13, 14, 15].Prevalence of CL (P) in Africa has often been reportedly low [16]. They require complex multidisciplinary treatment and are associated with elevated infant mortality and significant life-long morbidity.

The division of Plastic and Reconstructive Surgery of the University of Ilorin/ University of Ilorin Teaching Hospital since its inception in 2001 has been actively involved in the management of babies born with OFC in

Nigeria especially in collaborating with a philanthropist organisation, Smile Train, based in USA. According to the Smile Train data, Ilorin has operated over 70 babies with cleft lip and palate so far during this collaboration thus putting smiles on the faces of babies born with OFC. We have a formidable “Ilorin cleft team” comprised of plastic surgeons, maxillofacial surgeons, paediatric surgeons, otorhinolaryngologists, anaesthetists, orthodontists, speech pathologists, audiologists and specialist nurse. Our team is in the forefront of management of OFC in Nigeria.

FIGURE 6: Cross section of orofacial clefts before and after surgery

We collaborated in a multicentre study to investigate candidate genes in OFC in the sub-Saharan African population [17]. Direct sequencing and genotyping in this study showed a greater number of CL (P) in males, more CP in females and CL (P) to CL ratio of 2:1, which is consistent with what obtains in other parts of the world [18]. A missense mutation, "A34G in MSX 1" was obtained in 9 cases and 4 hap map control. The replications of a mutation previously implicated in other populations suggest a role for the MSX 1 A34G in the regulating of cleft lip and palate in Nigerian populace. The study was published in a world class cleft lip and palate journal [17].

Various ethnic groups in Nigeria believe that witchcraft, evil spirits or the devil, the mother and occasionally the child are responsible for OFC outcome. These cultural and ethnic beliefs may be responsible for reported cases of infanticide in those born with OFC [19]. Distinguished ladies and gentlemen, children born with OFC are subject of ridicule in the society; other children are prevented from playing or even moving close to them. The mother of such children may be accused of witchcraft. The parents of such babies are very desperate for surgical intervention irrespective of other major associated congenital anomalies that might put the baby at risk for surgery. This desperation sometimes informs the surgical team taking a brave decision to operate on a 5 month old baby (picture shown) with congenital cyanotic heart disease. The operation lasted 2 hours and was uneventful.

Figure 7: Bilateral cleft lip & palate in a child with multiple congenital anomalies

FIGURE 8: Same child after cleft lip repair

Muskuloskeletal Anomalies

Embryologically, most of the morphological differentiation of the limbs occurs during the embryonic period which ends by the 8th week. The most critical period of the development of limb anomalies is from 26th – 36th

day of embryonic life [20], however, ossification and growth proceeds throughout the foetal period to puberty. Using Modified Swanson classification, congenital limb anomalies are divided into 7 groups. I want to say with all sense of modesty that we have worked on virtually all the anomalies in various groupings in the last one decade. For the purpose of this lecture, I will use illustrations of Swanson type II, III, IV and VII.

Modified Swanson Type II - There is failure of differentiation of parts.

Examples of these are: - Syndactyly (where fingers are fused together); Camptodactyly (with associated flexion contracture); Clinodactyly (associated sideway deviation).
In syndactyly, the fingers are separated surgically using multiple Z-plasties with or without Split Thickness Skin Grafting (STSG) of the raw surfaces between the fingers.
The timing of the surgical intervention is very important; the older the baby, the better the outcome of the procedure. In the 80s, when we were been taught, it used to be done at pre-school age (i.e. 4 – 5 years). That was when Nigeria was good. Nowadays, you cannot predict the pre-school age of any child. To some parents, it can be as short as 6 months of age, so that the child will be able to graduate at the age of 13 or 14 years from the university. I have chosen to operate these babies at the age of about 1 year.

FIGURE 9: Syndactyly of the upperlimb

Modified Swanson Type III - When there is duplication of parts. Examples are polydactyly (extra digits); Triphalangism (3 phalanges in thumb) otherwise known as mirror hand.

A plain x-ray of the affected hand must be done to know which of the extra digits should be removed. Any digit that does not have corresponding metacarpal or metatarsal is the abnormal digit.

FIGURE 10: Polydactyly of the (a) hands and (b) feet in the same patient

Modified Swanson Type IV – There is overgrowth of a particular digit.

Example is Macrodactyly (large finger or toe). In this anomaly, there is hypertrophy of a particular digit affecting both the bone and soft tissue component. Surgical procedure is by reduction of both the bony and soft tissue elements. Amputation could be an alternative.

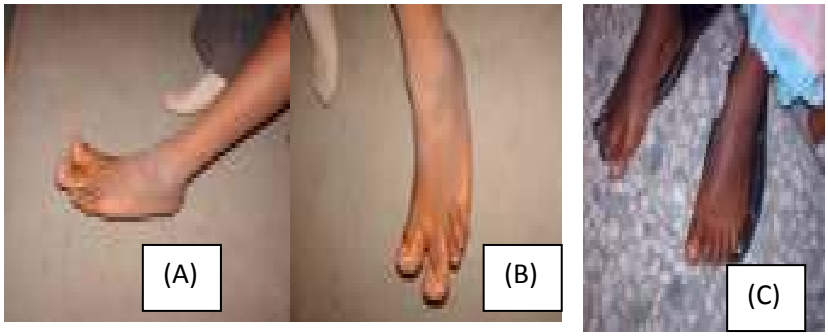


FIGURE 11: Macrodactyly of the big & 2nd toe before (a) &(b) and after (c) surgery

Modified Swanson Type VII – Here you have generalised skeletal anomalies. Our unit managed 2 babies with multiple skeletal anomalies of the upper limb. Case 1 showed a 5 month old baby with left upper limb smaller and shorter than the contralateral limb, radial clubbed hand and tridactyly with absence of the ring and little finger. The limb was malrotated with the elbow being anterior and cubit posterior. There was no other phenotypical abnormality.

FIGURE 12: Clinical and radiological picture in a child with multiple skeletal anomalies

Case 2 showed a month old male with left limb deformity which is characterised by fixed elbow flexion; anterio-cubital webbing and one metacarpal with two fingered hand.

FIGURE 13: Clinical and radiological picture in a child with multiple skeletal anomalies

Management Offered to These Patients – Management of upper limb hemimalia is challenging and is largely

individualized. These babies are trained to make maximum use of the right limb which we hope will be without serious handicap to their livelihood. They are on continuous physiotherapy which we started earlier to reduce the degree of atrophy from non-use. We hope to follow them up until adulthood; they may however need to have some surgical intervention along the way to free the elbow joint and a well-fitting prosthesis for the forearm and hand.

Reconstructive Surgery

Mr Vice Chancellor, the bulk of work of a plastic surgeon in our sub-region is mainly reconstructive surgery. It constitutes more than 60% of our surgical procedures and it makes us to collaborate with other specialists within the faculty of clinical sciences. I shall show case these under 3 major headings: Trauma, Tumours and Others

Trauma

Eye Avulsion Injury

Ocular trauma is often the leading cause of unilateral loss of vision particularly in underdeveloped countries [21]. It is said to be responsible for the greater population of head trauma associated with ocular visual complications occurring in head injured patients in our country [22].

Due to an increasing growth of poverty, cultism, mysticism, religion and pseudo-sciences nationwide, a few Nigerians believe in the use of human body or body parts such as breasts, sexual organs and the eyes for money making rituals, thus introducing damage to the causation of blindness in Nigeria.

I present a 14 year old boy we managed for near-total enucleation of both eyes by assailants. Our patient, who had enjoyed normal vision in both eyes previously, was alone on the farm when two cattle rearers attacked him, forceful enucleating his two eyes with a knife for ritual sacrifice [23].

He was taken to the operating theatre where he had debridement and primary repair of avulsed periorbital and intra-orbital tissue. The boy has been socially rehabilitated; he reads with Braille at school and returned to his former occupation and society on vacation.

FIGURE 14: Intra-op (a) and post-op (b) appearance after near-total enucleation of both eyes

Lip and Nose avulsion injury

The lips play an important role in the maintenance of oral competence, deglutition and articulation of speech, non-verbal communication, social and emotional interaction as well as being an important symbol of beauty [24]. In the reconstruction of lip defects, these are taken into account. The reconstruction of large lip defects is challenging because of the highly specialised nature of the lip tissue. The goals of surgery in lip reconstruction include the constitution of a competent oral sphincter around an adequately size stoma, the restoration of the vermilion border and oral lining as well as achieving a sensate lip [25].

We managed several cases of lip defects together with our colleagues at Obafemi Awolowo University, Ile Ife (Drs J. K. Olabanji & A. O. Oladele) and published our work in 2009 [26], an inter-institutional research work.

I shall showcase this by presenting a 35year old trader who presented to us two days after a gunshot to the face following a robbery attack. There was injury to the lower part of the face with loss of the lower lip; drooling of saliva and impaired speech. Examination revealed oedematous face with near-total loss of the lower lip, leaving a tag at the left commissure.

The wound was infected. Three of the lower incisors and two of upper incisors had been fractured with exposure of the lower gum and teeth.

FIGURE 15: Pre-op (a) Intra-op (b) and Post-op (c) pictures following gunshot to the face

A single stage lip reconstruction with modified bilateral Karapandzic flaps which is superiorly based and nerve sparring was performed. The immediate post-operative outcome was satisfactory with mild microstomia.

Nose avulsion injury

The nose is arguably the most prominent aspect of the face. It occupies a prominent place in the centre of the face making it a structure of obvious aesthetic significance. Its reconstruction involves alteration and aesthetic details that cannot be easily hidden with clothing or apparel. In reality, recreating the nose is impossible; what nature has fabricated in a mother's womb is not reproducible.

FIGURE 16: Complete loss of nasal structure

Mr Vice Chancellor, I hereby present the case of a patient with a major traumatic nasal loss who had a near-total nasal reconstruction as a single procedure.

Case presentation

A 35 year old civil servant was involved in a road traffic accident two years before presentation. He sustained multiple extensive facial injuries which were managed in a private hospital. He presented to us with complete loss of nasal cover and lining. The nasal bone and upper lateral cartilages were however intact. He had a transverse scar on the upper lip and a complete distortion of the normal anatomy of the upper lip. The lower lip appeared normal.

The patient became socially withdrawn. He will only go out when it was absolutely necessary and will cover the mid portion of his face with a mask. He was referred to our unit for nasal reconstruction. He was examined to ascertain the missing structures of the nose and had a good pre-operative preparation.

FIGURE 17: Nasal reconstruction intra-op

FIGURE 18: Postoperative outcome (a) 7 days post-op and (b) 6 months post-op after nasal reconstruction

The mode of operation and possible outcome was discussed with the patient. He was reconstructed with superiorly-based bilateral nasolabial flaps to line the floor and the nasal septum and a Para median forehead flap for skin cover [27].

The patient did well post-operatively and was discharged home on the 7th post-operative day.

Long bone fracture with exposed bone

In many cases of fractured tibia especially Gustillo Anderson type 3b, a reconstructive surgeon will have to join the orthopaedic surgeons for a fasciocutaneous, muscular or musculocutaneous flap cover of the exposed bone. Here we use lateral or medial head of gastrocnemius muscle, soleus or hemi soleus muscular flaps regularly.

FIGURE 19: (a) Exposed tibia (b) Fasciocutaneous flap raised (c) Gastrocnemius/ soleus flap raised (d) Fasciocutaneous flap used

Hand injury

Hand injury is one of the major surgical emergencies in a plastic surgery unit. Hand injuries rarely result in death but they cause untold loss to the injured, his family, employers and fellow citizens. The objective of treating hand injuries is to retain as much function as possible through well manage primary care [28]. Oluwatosin, Adigun et al 2005 in a study conducted in UCH, Ibadan reported that the commonest cause of hand injury was grinding machine followed by road traffic accident. Other causes include gunshot, machete cuts, bottle cuts, and animal bite to mention but a few [29]. However, Adigun, Ogundipe and Aderibigbe 2007 at UITH reported road traffic accidents as the commonest cause of hand injury closely followed by grinding machine [30].

The hand with its 27 muscles and 27 bones is strong, flexible and able to perform fine movements. Injuries that can be sustained include; abrasion, laceration, avulsion, partial amputation and amputation involving structure like tendons, nerves, bone (fracture or dislocation) together with the skin and subcutaneous tissue.

FIGURE 20: Hand injury before (a) and after (b) surgery

Management of hand injuries is teamwork. Machine operators must be properly educated in various safety devices while passengers in vehicles are educated on how to position their hands in a moving vehicle.

Post Burn Contracture

Post burn contracture management could pose a serious challenge to a burn surgeon in the developing countries. Unfortunately, I can't remember any of my out-patient clinics that I ran without seeing a patient with post burn contracture. To prevent a burn patient from developing contracture, people managing burn injury must

ensure that burn wound across a joint space must be properly splinted and patient must commence early physiotherapy. Such patient is not likely to develop contracture. It is a preventable complication [31].

FIGURE 21: Child with post burn contracture; Perineal contracture being repaired with gracilis musculocutaneous flap

Tumours

Majority of our patients present with very large sized malignant tumours thus creating the problem of excision of a large tumour and cover of the exposed bed to

the reconstructive surgeon. Most of these tumours are either soft tissue sarcomas (STS) or malignant skin lesions. Malignant fibrous histiocytoma (MFH) is said to be the most common STS in the Western world [32]. Adigun et al 2007 however reported that fibrosarcoma is the most common of the malignant soft tissue tumours in black Africans followed by MFH, leimyosarcoma and rhabdomyosarcoma [33, 34, 35, 36]. Basal Cell Carcinoma (BCC) is said to be the most common human skin malignancy (cancer) [37]. Adigun et al 2006 however reported Squamous Cell Carcinoma (SCC) as the most common non-melanomatous skin tumour in black Africans [38]. This is closely followed by BCC and Malignant Melanoma.

FIGURE 22: Albino with basal cell carcinoma of the face

STS can occur in any anatomic region of the body because of the ubiquitous nature of the connective tissue; but most sarcomas (60%) [39]develop in the extremities, more commonly in the lower limb. Other areas include the

trunk, head and neck, intra-abdominal and retroperitoneal. The size of a STS is an important prognostic variable and affects the quality of tumour resection.

Mr Vice Chancellor, I will like to share my experience in the management of one of several of these cases of advanced huge malignant lesions (cancer).

FIGURE 23: Soft tissue sarcoma of the left thigh

Case 1

We operated on a 35 year old woman with a huge soft tissue tumour on the (L) thigh. During the resection, the major vessel was injured and a vascular surgeon joined the team and repaired the vessels. The operation lasted 10 hours. When the vascular clamps were released to establish circulation to the affected limb, the patient had cardiovascular arrest and failed to respond to

cardiopulmonary resuscitation. The death was attributed to reperfusion ischaemic injury. That experience led to the publication of an article titled: "Soft tissue sarcoma of the thigh: Need for angiography in the developing countries." [39] There I warned that angiography in the developing countries remains important as a pre-operative guide to surgical approach in STS of the thigh. It will allow us to guide our dissection with respect to the adjacent vascular structures, thus reducing the operation time significantly and reducing the ischaemic time in cases where we have to clamp the femoral artery. This will reduce the incidence of reperfusion ischaemic injury.

FIGURE 24: (a) Intraoperative excision of soft tissue sarcoma of the left thigh with (b) blood vessels demonstrated

Since then in all our subsequent cases of STS of the thigh, we always request for CT-angiography and that has made us to guide our dissection without injury to the femoral vessels and we have not lost any patient since then.

Case 2

The picture shown in figure 25 is a huge recurrent fibrosarcoma before excision and figure 26 is the immediate post-operative picture while figure 27 is the post-operative tumour bed [40]. He was to have STSG with adjuvant chemo and radiotherapy but discharged against medical advice because of lack of funds. This is one of the impediments to our ability to offer optimum care for our patients.

FIGURE 25: Recurrent soft tissue sarcoma

FIGURE 26: Immediate post-excision of tumour

FIGURE 27: Postoperative tumour bed

Others

Large Anterior Abdominal Wall Defects

Defects in the anterior abdominal wall could be partial or total and can arise from congenital and acquired causes. When the abdominal wall defects are very large, they usually cannot be closed by the patient's own tissues. An attempt at forceful closure of the fascia causes excessive tension and is almost invariably followed by dehiscence thus the need for tissue to bridge the gap and ensure tension-free repair [41]. Early surgeons have used fascia lata for the repair of hernia and abdominal wall defects [41]. Lateral and posteriorly based composite flaps of the external oblique muscle, anterior rectus fascia and the overlying skin which have a limited arc of rotation have been used to repair defects of the upper or lower abdominal walls.

The use of prosthetic mesh in structural abdominal wall reconstruction provides a viable option. However in our environment, the use of prosthetic materials has not been commonly used in practice. Adigun, Olabanji and Oladele in 2007 advocated the use of prosthetic mesh as fascia replacement in structural abdominal wall reconstruction [42].

FIGURE 28: (a) Large anterior abdominal wall defect (b) & (c) Mesh repair of defect (d) After final closure

Macromastia

The terms macromastia, Gigantomastia, Breast or Mammary hypertrophy are sometimes used interchangeably [43, 44]. Macromastia is defined as amount of breast tissue resected from one breast weighting 1, 800g or more [44].

Case presentation

The patient was a 26 year old woman who presented to our specialist service with massive swelling of both breasts and bilateral axillary swelling, both of 6 years duration. She noticed gradual but progressive increase in the size of her breasts but became apprehensive when she observed swelling in both axillae. Because of her very large breasts, she was isolated and perceived by many to be abnormal. Her first husband abandoned her for the same reason. Two years later, she suffered a similar fate with her second husband.

FIGURE 29: Frontal (a) and side view (b) of a patient with macromastia

On examination, she was very anxious and disturbed. Her weight was 89Kg with a height of 1.5m. There was massive swelling of both breasts and the axillary breasts all extending below the groin and hip joints. A diagnosis of bilateral massive gynaecomastia and bilateral axillary hypertrophy was made. She suffered significant

psychological problems. We did a total bilateral excision of the hypertrophied axillary breasts and bilateral breast amputation with composite nipple-areola complex graft of the normally located breasts. It was a combined surgery by the plastic surgery team and the general surgery team comprising of 4 surgeons.

FIGURE 30: Same patient after reduction surgery

The total weight of the breast tissue removed was 44.8 kg. Although we lost the nipple areola complex, the spot became hyper pigmented and was cosmetically satisfactory to both the patient and the surgeons.

We followed her up for three years without any problem. We searched through the world literature. In our patient, the breast tissue removed weighing 44.8kg is about the largest series reported all over the world [45, 46].

Microvascular Surgery, Re-Implantation Surgery

Microvascular surgery has challenged the traditional concept of reconstructive surgery and wound

management. In other to achieve the goals of optimal form and function, the use of microvascular tissue transfer is now the first choice of treatment [47].

The first microvascular free tissue transfer in the southern part of Nigeria was performed in 1993 at University College Hospital (UCH), Ibadan by Oluwatosin and his group [48]. The first reported microvascular free tissue transfer in the whole of Northern Nigeria was performed in the year 2002 at the University of Ilorin Teaching Hospital by Adigun and Odebode [49]. It was done on an 18 year old senior secondary school student who presented with 2 weeks' history of fever and headache.

Computerised Tomography (CT) scan confirmed osteomyelitis of the frontal bone with pneumatocele. A radical debridement of the osteomyelitic bone was done with a microvascular free lattisimus dorsi musculocutanoes flap repaired the defect created. The procedure lasted 16hours. Immediate postoperative period was uneventful. The patient was discharged home four weeks after the procedure and was seen subsequently at the outpatient clinic for more than 6 months [49].

Reconstructive microsurgery is very demanding; it is still at its infancy in the West African sub-region but with persistence and regular microvascular operative practices and sessions, confidence will build up and success rate shall rise such that the failure rate can be reduced to 1.2% [50]as it is obtained in advanced countries.

Re-Implantation

Survival of replanted tissue has improved since the 1st reported case in the 60s. Tissues that have been successfully replanted include limbs, scalp, ear, and nose.

Best results are often obtained from clean, guillotine cuts. Preservation of an amputated part is a major problem in our environment. The last 2 cases of limb re-implantation that was carried out in our hospital failed because of poor handling of the amputated parts. In the first patient, the amputated hand was dropped directly inside iced water for several hours before presentation at the accident and emergency unit. We still went ahead to re-vascularise the hand after the orthopaedic surgeons had fixed the bone.

FIGURE 31: Completely amputated hand being re-implanted

The amputated part seemed to have survived the first 72 hours after which we noticed skin changes at the distal phalanges signifying gangrene. It was however progressive so we then called the orthopaedic surgeons for re-amputation. Let me say that there is need for every medical practitioner to know how to preserve an amputated part while awaiting the arrival of the re-implantation team. The steps to take are:

- ✓ Wrap the part in saline moist gauze
- ✓ Put it in a polythene or a container
- ✓ Then put container in mixture of ice and water

With these steps, the amputated part can be made viable for another 6 – 8 hours, giving enough time for the re-implantation team.

Aesthetic or Cosmetic Surgery

Aesthetic surgical procedure is a major work of a plastic surgeon. But even in most parts of advanced nations it is just about 10% of the work of a plastic surgeon. The situation is worse in the West-African sub- region where it contributes less than 1%. Cosmetic surgery is done to reverse the signs of aging; to look more normal; to set free from obsession and to correct some congenital abnormalities [48]. Nigerians are however not cosmetically inclined. It is sad to let you know that in the last 1 decade of my practice, only 2 young ladies with large breasts have come for reduction mammoplasty.

Other cosmetic procedures are:

FIGURE 32: Large breast before and after reduction mammoplasty

Procedure	Indication
✓ Brow lifts	- Abnormal sagging of the frontal furrows

- ✓ Blepharoplasty - Baggy eyelids
- ✓ Face lift (Meloplasty) - Excessive facial folds
- ✓ Rhinoplasty - Nasal humps; saddle nose
- ✓ Abdominoplasty (Tummy tuck) - Baggy or drooping abdomen
- ✓ Liposuction - Fatty abdomen, upper thigh, buttocks, Fatty gynaecomastia
- ✓ Otoplasty - Prominent ears

Nigerians are encouraged to imbibe the culture of looking good and embrace cosmetic surgery. The very few people that want to look good and can afford the payment do not need to travel abroad for any of those procedures.

Others

Chronic Leg Ulcers

A chronic lower limb ulcer is a chronic wound of the leg which does not heal within 6 weeks. In this environment, Adigun I.A., Rahman G.A. et al [51] reported poorly managed trauma as the commonest cause of chronic leg ulcer followed by infection. Oluwatosin et al [52] formulated a reliable and simple system called ABDEFS' Scoring System. This was used in a study which showed a clinical correlation between the bacterial count of an ulcer and the clinical status of the ulcer. Using the ABDEFS' scoring system, clinicians in peripheral and some general hospitals in our sub-region can predict the degree of bacterial invasion of the ulcer based on assessment of its clinical appearance and thus commence appropriate treatment before any complication sets in [53].

In another study, Fadeyi, Adigun and Rahman [54] showed pattern of bacterial pathogens that usually infect

chronic leg ulcerations of patient managed at University of Ilorin Teaching Hospital. The following organisms were implicated; *Klebsiella spp, Citrobacter spp,* and *Escherichia coli.* These organisms were sensitive to third generation cephalosporins and fluoroquinolones. We advised that these drugs should be used for first line treatment of patients with infected chronic leg ulcers except when contraindicated.

FIGURE 33: Chronic leg ulcer after skin grafting (a) recipient site (b) donor site

Mr Vice Chancellor, I will like to share my experience of a 20 year old University of Ilorin undergraduate with recurrent chronic leg ulcer. She presented with a three- year history of recurrent chronic leg ulcer of the right leg. The leg ulcer had started increasing progressively in size following the use of herbal concoctions the patient used to dress the wound two weeks prior to presentation. She had had 2 previous skin grafts done under our care. She however, absconded from follow-up appointment. At presentation, she developed widespread skin necrosis and palpable crepitus on her right foot up to the upper third of her leg.

FIGURE 34: Necrotizing fasciitis of the right leg before and after radical debridement

She had emergency radical debridement of the right leg on the fourth day following admission with extensive myonecrosis of the gastrocnemius and the tibialis anterior muscle which were debrided. There was however progressive necrosis involving the tibia and fibula up to the level of her knee and she was septic. We invited the orthopaedic surgeons who did above-knee amputation (AKA) of the right lower extremity. Culture of the wound biopsies yielded mixed growth of *Klebsiella* and *Psuedomonas.* She did well post-operatively and was being prepared for prosthesis. The herbal concoction the patient used is a highly toxic contaminant that can lead to fulminating soft tissue infection [55]. The use of this herbal concoction for wound care should be discouraged in our

environment [56].

FIGURE 35: Gangrenous right leg

Chronic Lymphoedema

Lymphoedema is a clinical condition involving the extremity that is characterized by accumulation of protein-rich fluid within the intercellular space of the subcutaneous tissue and the skin. It is almost always a permanent and often progressive condition. While it occurs most frequently in the extremities, it can be found in the head, neck, abdomen, lungs and around the genitalia. It can be primary or secondary [57].

(C)

FIGURE 36: (a) Chronic lymphoedema of the right leg (b) after surgery (c) and after skin grafting

My unit has managed some cases of lower extremity lymphoedema that were reported in 2008 [58] where we highlighted problems that can be encountered by the managing team in the developing countries. I will like to present our experience of managing an unusually large penoscrotal lymphedema in the West African sub-region.

A 25 year old single Nigerian man was admitted via the surgical out-patient clinic with a 2-year history of scrotal swelling which was initially small in size, non-painful and not associated with fever. The swelling gradually increased in size to the extent of impairing free movement of the patient. The swelling made sexual intercourse and voiding in standing position impossible. Examination showed a healthy looking young man with a giant scrotal swelling of a size greater than that of his head with the penile shaft buried in the scrotal wall skin.

FIGURE 37: Huge penoscrotal lymphoedema (a) before surgery (b) and immediate post-op

He subsequently had a modified Charles' procedure with a primary penile shaft split-thickness skin graft performed by a team of general surgeons and plastic surgeons.

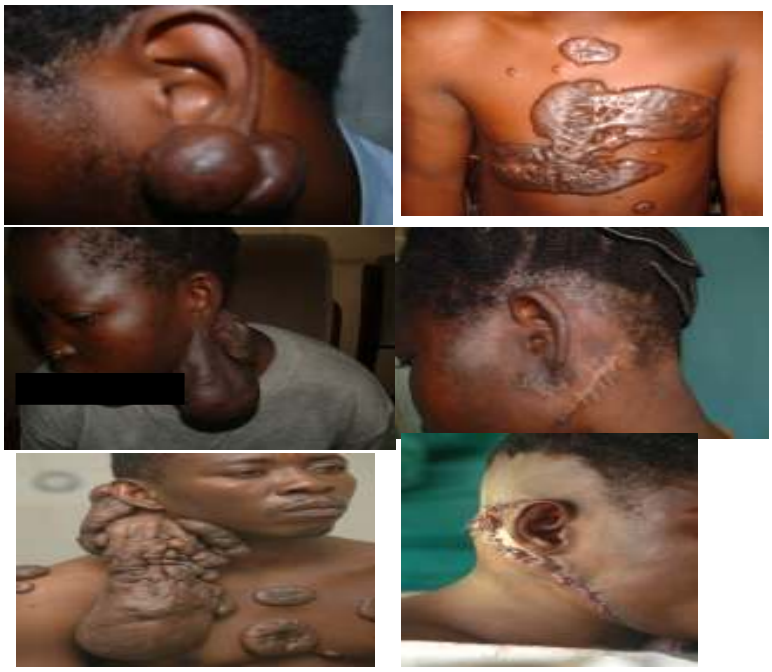
His immediate post-operative condition was satisfactory. By the 6th week postoperatively, the perineal wound had healed and contracted appreciably leaving about a 3cm raw area of the wound.

He had an uneventful postoperative course with the scrotal wound healing completely by the 8th postoperative week. We followed him up for more than 3 years with no complaint. The patient was physically and socially satisfied with his improved quality of life [59].

FIGURE 38: 6 weeks after surgery of huge penoscrotal lymphoedema

Keloids and Hypertrophic Scars

Keloids are benign cutaneous lesions that result from excessive collagen synthesis and deposition after healing of a skin injury. Although keloids occur in all age groups, they are rarely found in newborn or elderly persons and have the highest incidence in individuals aged 10 – 20 years. Trauma to the skin, both physical (surgery, earlobe piercing) and pathological (e.g. acne, chicken pox) are the



prominent causes identified for the development of keloids[60].

[redacted]

[redacted]

FIGURE 39: Keloids of various shapes, sizes and locations before and after excision

"Mystery" continues to surround the treatment of keloids. Some people have reported the use of local materials like shear butter cream (*ori amọ*) and the Boa constrictor fat (BCF) (*ọra ere*) with varying degree of success. In my unit, we use triple regimen which comprises of surgical excision combined with triamcinolone and low dose telecobalt radiation therapy. When lesions are small, we use intralesional injection of triamcinolone.

Hypertrophic scars generally arise within four weeks of injury, grow for several months and then regress between 12 -18 months post injury. It remains within the confines of the original scar border. In my unit, we use Silicone gel for hypertrophic scars and sometimes intralesional triamcinolone injection.

Prospects and Recommendations

Establishment of burn centres in various parts of this country is long overdue; so also is the formation of a disaster management teams that will map out disaster plans. This will transform the management of burn injury in Nigeria. We have the expertise; all we are asking for is a well-equipped centre and we shall be able to bring down the mortality of burn injured patients to the level that is obtained in the developed countries.

Preventive measures to help epileptics avoid injury, such as burn injury while cooking at home, are extremely important. They must never be allowed to cook alone without someone beside them.

There should be legislation in controlling the sales of concentrated sulphuric acid by roadside battery chargers or any persons who might have access to the products.

Microvascular surgery is still at its infancy stage in our sub-region. We need to train more personnel, make appropriate instruments available and in this 21st century, we should be able to be at par with our colleagues in the developed countries of the world. We also wish our people in this sub-region to embrace cosmetic surgery. Nigerians do not need to travel to Europe and United States of America or even Asian countries spending huge amounts of money for a service that can be provided within.

I hope to see more young surgeons specialising in plastic, reconstructive and aesthetic surgery. This will improve the availability of the specialty spread across the country and thus increase the service delivery in this sub-region.

Conclusion:

Over the years, I have learnt a lot of lessons and improved on my knowledge of plastic surgery. I have my challenges but I have always tried to manage my patients to the satisfaction of the patients or their relatives. With all sense of modesty, my success rate is comparable to what is obtained in other centres with established plastic surgery units in the West African sub-region.

Mr Vice Chancellor, within the short period of my practice, two eminent young plastic surgeons have passed through me as a trainee in plastic surgery. They are Dr K.O. Ogundipe, who is now a senior lecturer at the department of surgery, Ekiti State University, Ado Ekiti and Dr A.B. Aderibigbe, who is a Lecturer 1 in the department of

surgery,, University of Ilorin. They are both doing very well. I thank Almighty God for themTo God be the Glory.

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I want to thank the Almighty Allah (SWT) for sparing my life to see this day. He is the unseen hand that has carried me through the hills and valleys of my life. He lifted me to the status of Professor of surgery and many other achievements in my life.

To my teachers from primary school, through secondary school to the university; I say thank you all. May Almighty Allah reward you abundantly. To my trainers, Prof O.M. Oluwatosin, with whom I trained for about 1½ years, a refined Professor of plastic surgery with fear of God; I say thank you very much for everything. My sincere regards go to your amiable wife- Dr (Mrs) Abimbola Oluwatosin. To Prof G.O.A. Sowemimo and Mr J.O. Oyeneyin (FRCS); I appreciate all the training you gave to me. May almighty Allah continue to bless you and your family.

To my friends and classmates, too numerous to mention, at both secondary and university: My classmates at GSS Ilorin 1980 set, (UP GSS!); and to my classmates at University of Ilorin, 1988 set; I am grateful for the good time we shared and are still sharing. To my Childhood brothers and sisters whom we grew up together at Akodudu/ Oke-okuta, I say thank you for all the good relationships we built and have maintained for about four decades of our lives. I will like to particularly recognise names like: Ganiyu Mumeen, Adisa Yakub, Shehu Adebayo, Musa Oniyo, Ibrahim Olowo, Saka Adebayo, Late Kabir Ndarabi, Alhaji Salihu Oke- Okuta, Baba

Yawiri, Salihu Adisa, Rasheed Alabi, Wahab Jogbojogbo, Sule Isiaka, Rasheed Maiyaki, Tunde Maiyaki, Iyabo Muke, Aduke Adebayo, Iyabo Bororo, Adama Isiaka, Hafsat Ibrahim and Khadijat Ibrahim.

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To my sister, Hajia Hauwa Ikepe Saada, a director in Kwara State ministry of Commerce and cooperatives, you have stood by me for more than 3 decades of my life without looking back. You have been consistent in your love and care for me. It is like my mother "Iya Ibadan" gave birth to you. I thank you so much and pray that almighty Allah continue to bless you. I will like to particularly appreciate Prince John & Princess Omolola Olobayo for their love and care for me. It all started as a doctor-patient relationship but has grown to a family tie within the last few years. I want to say thank you for your support. You are a wonderful couple blessed with good children.

To my In-laws, the Alaya family, thank you for giving me your wonderful daughter to marry. I will like at

this point to remember Late Alhaji Ibrahim Baba Alaya (Baba re), may Allah grant you his Al-jana fridaous. I remember today my late uncle, Alhaji Ibrahim Ajamu, one of the very few people that I would have loved to witness this occasion. May almighty Allah forgive all your sins and grant you Al-janah fridaous. The people you left behind to take care of us have not disappointed me. They have been wonderful. At this point I will like to say thank you to Alhaji Yakubu Akodudu, Alhaji Amosa Oke-Okuta, Alhaji Sidiku, Alhaji Salihu Mogaji, Alhaji Abdulsalam Agbomojo, Alhaji Oba Bororo to mention but a few. May Allah continue to protect your children wherever they are. To my siblings, both paternal and maternal, I say thank you all for our relationships. You have been so wonderful; may Allah continue to bless your family.

The Emir of Ilorin- Alhaji (Dr) Ibrahim Sulu Gambari, CFR- and all the other members of the Ilorin Emirate Traditional Council- especially my "father" Alhaji Aremu Zubair, the Mogaji Are of Ilorin as represented here today- are gratefully appreciated. May your reign continue to witness many ground-breaking events like this, Amin. My sincere regard and appreciation go to the entire members of Akodudu Development Association and Mogaji Are Ward Development Association. Thank you all for your support always.

To my wife, Alhaja Rahmat Idowu Aduke Morenikeji (nee Alaya), you have been my source of joy. You are my baby, my sweetie, my heart, my spleen and my liver. You are the one that keeps my 'SA node' continually going. Thanks to almighty Allah for blessing us with our 'beautiful girls'- Mariam, Halimat, Zainab and Aishat. They have been our source of happiness.

Mr Vice Chancellor, before I conclude this lecture, let me pay tribute to two people in my life who are conspicuously missing here today because they have both gone on before: my father Lawal Adebayo Adigun and my mother Halimat Abike Lawal. I lost my father at a very tender age; I was never close to him. May Allah forgive him his sins and grant him Al-janah fridaous. I was left in the hand of my mother alone who trained and brought me up so well that I really did not miss my paternal care. All I am or ever hope to be, I owe my mother. She is the earliest, strongest, and most impacting force in my life. For me to tell my story means beginning with hers. You gave birth to 11 of us; every other person died except me. I was very lonely, but you were always there for me. She is the one that made all of you to know me and for you to be present at this occasion.

Today's INAUGURAL LECTURE IS DEDICATED to mark her 1 year of demise from this world. I thank God for her life. She enjoyed the latter part of her years on earth. She ate well; she dressed well; she slept well.

FIGURE 40: "Iya Ibadan"

She came, she saw and she conquered.

May almighty Allah grant her Al-janah fridaous. Amen.

Thank you all for listening.

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