

OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE, NIGERIA.

Inaugural Lecture series 244.

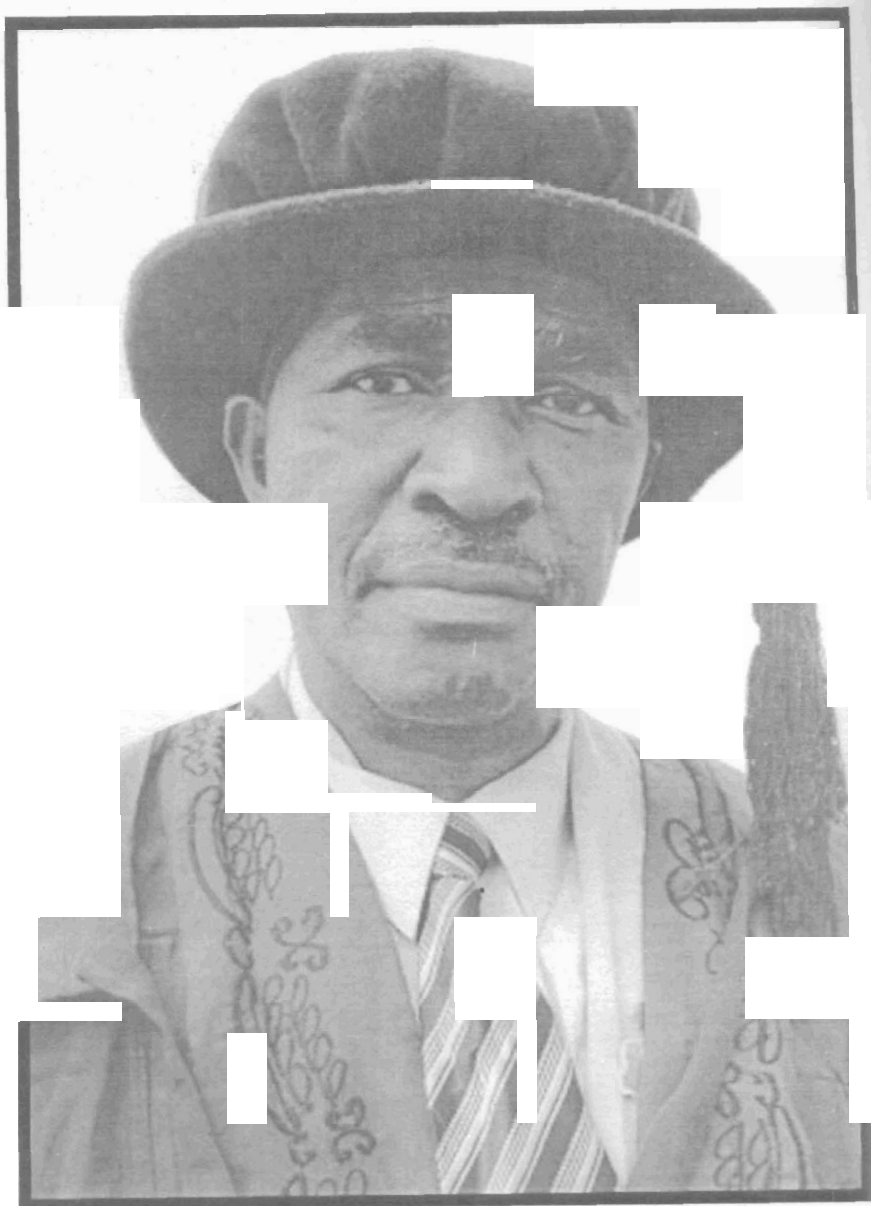
**CLEARING ROAD BLOCKS ALONG
THE ALIMENTARY CANAL: THE EYES,
HANDS AND KNIFE OF THE
GENERAL SURGEON.**

By

Elugwaraonu Augustine Agbakwuru
Professor of General Surgery



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**An Inaugural Lecture Delivered at Oduduwa Hall,
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On Tuesday 21st, February, 2012**

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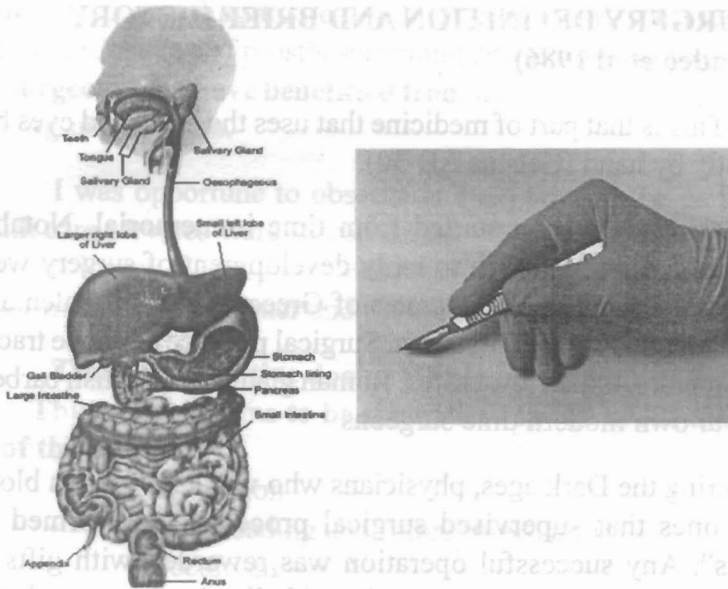


Figure 1: Surgeon's knife on the Alimentary canal

1. INTRODUCTION

Mr. Vice-Chancellor sir, distinguished ladies and gentlemen, it is with great pleasure and gratitude to God that I have come here to give the 244th inaugural lecture of this great University – Obafemi Awolowo University, Ile-Ife.

By definition, inaugural lecture is supposed to be an opening or a foundational lecture of a newly appointed Professor who will use it to summarize his contribution to his/her field of practice or teaching.

The problem with the 'old school' general surgeon is that he/she operates and researches in many areas of the body, and therefore,

capturing his/her contribution in a summary may be difficult. All the same, I shall try to see as we go along, how much justice can be done to this discourse.

1.1. SURGERY DEFINITION AND BRIEF HISTORY (Badeo et al 1986)

Surgery: This is that part of medicine that uses the brain and eyes but cures mostly by hand (Celsius AD 30).

Surgical operation started from time immemorial. Notable people that contributed much to early development of surgery were Hammurabi of Babylon, Hippocrates of Greece, Celsius, Galen and our own – Olauda Equiano of Africa. Surgical practice could be traced to early sorcerers, Indian low castes, Roman gladiators, British barbers down to our own modern time surgeons.

During the Dark ages, physicians who would not touch blood were the ones that supervised surgical procedures performed by “Surgeons”. Any successful operation was rewarded with gifts or praises but a failed one attracted penalty with dismissal or even death.

Before the advent of anaesthesia, surgery was done by physically restraining the patient while the stone-hearted surgeon would be performing the operation. Prior to the introduction of antibiotics, Surgery was commonly complicated by infections and high mortality as a rule; - thanks to Louis Pasteur (who formulated the germ theory) Joseph Lister (introduced antiseptis) and Flemings (discovered penicillin):- infections can now be put in check.

Surgery, after a long period, has evolved to become a science and art that requires a formal training in medicine and surgery while also requiring personal attributes of the trainee such as intelligence, common sense, patience, love, understanding of human beings, competence, manual skills, dexterity, knowledge and applications of computer and robots, among others.

1.2. BACK HOME IN OAU

Surgery has also undergone positive growth with many modern facilities and practices being made available in our centre such as minimal access diagnostics and surgery, renal transplantation, endoscopy, and use of prosthesis among others. **I happen to be one of the surgeons who have benefitted from these facilities and currently making use of them.**

I was opportune to observe and experience the period when health care services were shared almost equally between four groups of practitioners, namely the traditional herbalist, the native doctor, Quasi-medical practitioner and the western doctor (1950-1960).

i. **Traditional native doctor (Dibia na agbaafa or Babalawo)**

This group claims to be specialised in the art of all or some of the following:

- Divination
- Palm reading and future forecasting
- Occultism
- Telepathy
- Spiritualism
- Poison medicine

ii. **The traditional herbalist**

This group claims to be specialised in the art of all or some of the following:

- Purgatives and diuretics
- Treating febrile illness
- Anti cough preparations based on clay or syrups
- Dressing of wounds with pepperish mixture of leaves or roots
- Illegal /criminal Abortion using herbs
- Traditional birth care
- Traditional circumcision practice

They are between the traditional doctor group and the quasi-western practice

iii. **Quasi –Western Medicine (*Gbogbonise*)**

Quack home Doctors – untrained/unqualified personnel who have been privileged to observe **some** medical procedures and practice such with little or no understanding of what they are doing.

Quack home Nurses who used to come around to give injections with syringes re boiled with the patient's cooking pots.

Quack abortionist-This would carry his instruments in a box on a bike or motor bikes-*okada*-with an alarm system: announcing his arrival.

Corner Shop Chemists – These are street side shop owners who operate chemists and dispense drugs without the services of a trained pharmacist (*Akapo/Adalu*- a combination of two or more pain relievers with different brand names, some multivitamins, antimalaria, antibiotic with incomplete dosages..

iv. **Western Medicine**

Dispensaries and health centres- These usually offer primary health care services to the community where they are situated and are most times manned by an experienced Nurse or Doctor or a team comprising the two with a Pharmacist /Pharmacy Technician.

The modern Doctor, Nurse, Paramedicals etc. These have undergone regulated and organized training and have been certified and licensed by Government and professional agencies.

This is the group to which I belong.

1.3. Having gone through the Nigerian Civil War of the 1960s, I landed in Ile-Ife to start my medical training as a student from 1973 to 1980 and was one of the members of the third set of the medical school.

In the course of my training, I went through basic tutelage under medical giants such as Prof. T.A. Ige Grillo(RIP), Durotoye(RIP), Jessop(RIP), Harrison(RIP), Laja, Simarin(RIP), Caxton Martins, M.A. Bankole, Baxter Grillo, Arigbabu, Odesanmi, Roger Makanjuola, Adeyemo, Soyinka, Badejo(RIP), Alabi (RIP), Uchenna Nwosu, Andy and a host of others.

After a break of six (6) years, I came back the second time to Ile-Ife to undergo a residency programme in Surgery from 1986 to 1992.

I went through a thorough apprenticeship under surgeons such as Professors Arigbabu, Adeyemo, Adejuyigbe, Akinola, Late Badejo, late Alabi and late Baba Bamgboye. Others were Odetoyinbo, Lawal, Fadiran, Fasakin, Aderounmu etc.

Mr. Vice Chancellor sir, there is an adage that says: “*the road to a man’s heart is through his belly*”. The belly this time refers to the Alimentary canal (Fig 2).

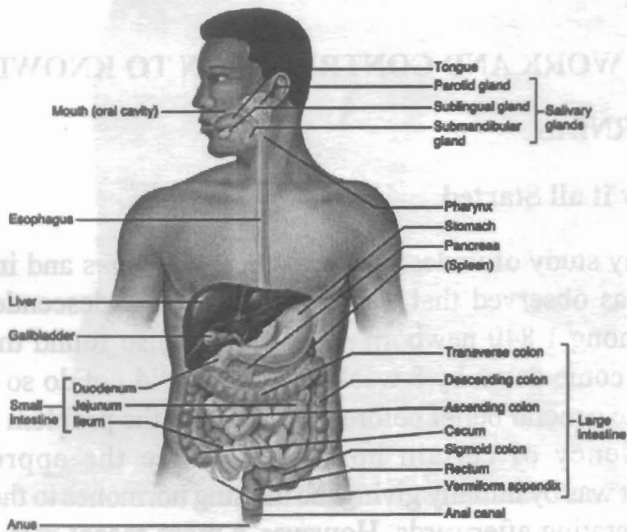


Figure 2: The Alimentary Canal

My discourse this evening is on the obstruction (blockage) along the alimentary canal and how it concerns the surgeon.

1.4. WHAT IS ALIMENTARY CANAL? (Figure 2)

This is a tubular structure that opens from the mouth, through the gullet (oesophagus) to the stomach, small and large intestines to end at the anus (idi-igbe, onu-shi). There are as it were relatives of this canal, for example, liver, spleen, pancreas and others. This canal has a lumen and wall. It passes through the chest, the abdomen and pelvis. The wall has smooth muscles that have intrinsic contracting ability which helps with peristaltic movements that propel movement of soft, hard or fluid contents down to the anus. (Gray's Anatomy 1973)

This tube – the alimentary canal can be blocked (obstructed) from within (intraluminal), from the wall (intramural) or from outside the wall (extramural). The blockage may also be due to paralysis of the muscles (functional obstruction). My research works over 26 years involve among others, clearing, preventing or palliating these obstructions.

2. MY WORK AND CONTRIBUTION TO KNOWLEDGE

2.1. HERNIAS

How it all Started

In my study of undescended testes in neonates and infants in Ile-Ife, it was observed that a 4% incidence of undescended testis occurred among 1,840 newborn males. It was also found that those that did not come down by 8 weeks after birth did not do so even by one year. The general belief before then was that the problem was due to insufficiency of certain hormones, hence the approach to management was by initially giving the missing hormones to the patient and then operating afterwards. However, a more recent method is to

attempt to bring the testis down surgically after 6 months but compulsorily before 2 years because of irreversible structural changes.

It is also a known fact that when the testis remains undescended, the connection between the peritoneal cavity and testis (processus vaginalis) also remains patent and hernia usually occurs through this opening:- this was the beginning of my interest in the study of hernia.

2.2. HERNIA DEFINITION (Devlin HB 1988; Agbakwuru 1995): This is the protrusion of intra-abdominal viscera/contents through a weakness/defect in the abdominal wall – *Ipake / Kusimu-Kusode, Kunu-Kuode, Ihe Ngbapu*



Figure 3a: Left Inguino-Scrotal Hernia



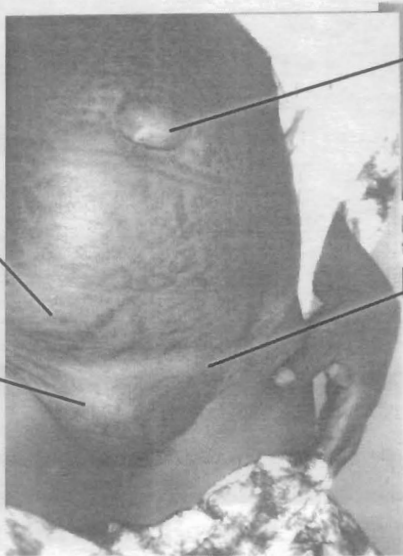
Figure 3b: Right Inguino-Scrotal Hernia

Spigelion
hernia

a

Femoral
hernia

c



b
Epigastric
hernia

d
Inguinal
hernia

Figure 3c: Multiple Abdominal Hernia in a Woman

- a: Spigelian Hernia
- b: Epigastric Hernia
- c: Femoral Hernia
- d: Left Inguina Hernia

The immediate cover of this hernia (sac) is the ceiling of the abdomen – peritoneum.

These herniae can be internal (hidden) or external (outside and obvious). The common sites for the external hernias are epigastric, umbilical, paraumbilical, spigelian, lumbar, groin (inguinal and femoral).

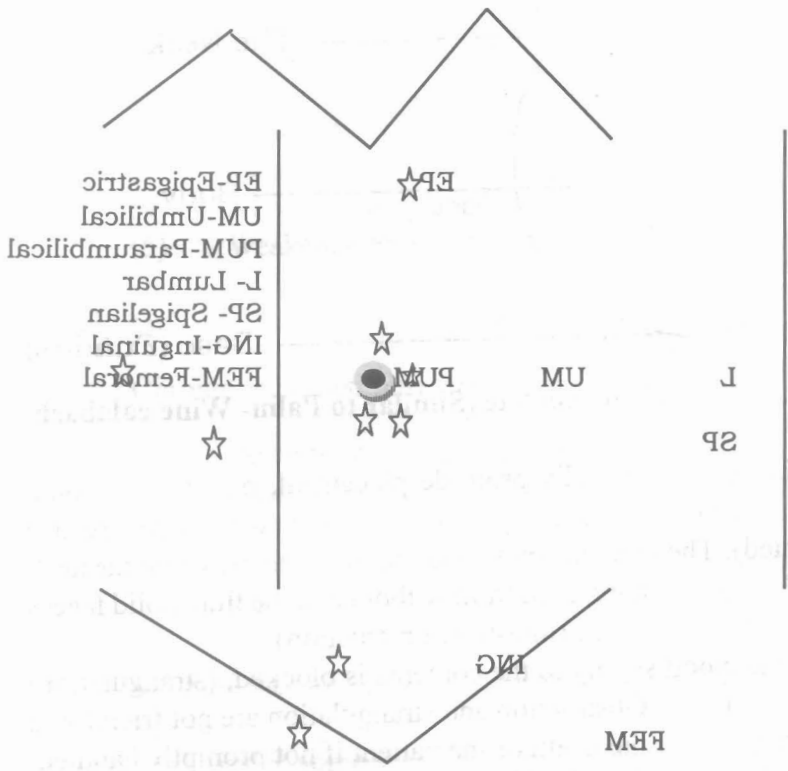


Figure 4: A Model Showing Common Sites of External Hernia

A typical hernia sac is like a palm-wine calabash (Fig 5) – with a mouth, neck, body and base (fundus). The contents can be intestines (ifun, eririafo), omentum, bladder, ovaries, fallopian tubes and others. The hernia produces a cough impulse. It changes in size with straining or lying down and may be reducible. It normally manifests itself by protrusion (on exertion) and retraction on relaxation from the abdominal wall. When complications set in, the hernia may remain permanently external (irreducible).

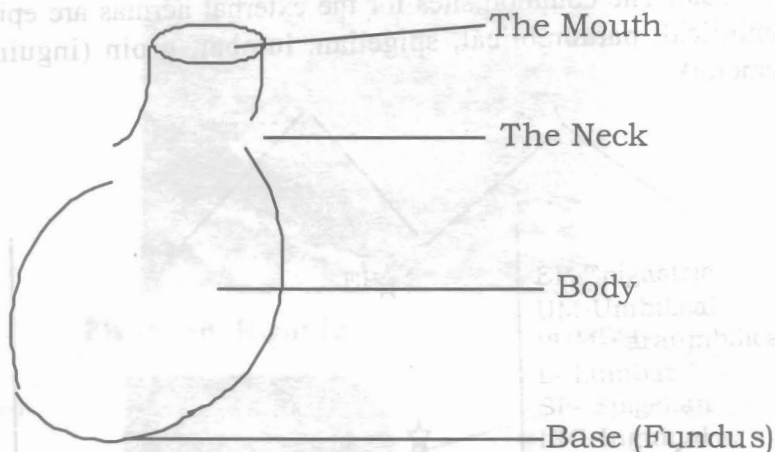


Figure 5: A Typical Hernia Sac (Similar to Palm- Wine calabash)

The contents usually protrude piecemeal, but if the amount outside becomes too large the hernia may no longer return (incarcerated). The contents may twist on themselves, while the neck of the sack may be compressed from without and the fluid/solid faeces inside the content blocked (intestinal obstruction).

If the blood supply to the contents is blocked, (strangulation) the content may die. Obstruction and strangulation are not friendly as they can progress to the death of the patient if not promptly handled. With time the neck of the fascia defect widens, the volume of content also increases and complications such as incarceration, obstruction or strangulation may follow.

These may result in block-age of the gut – when no food goes in and no gas/faeces comes out. When the neck is allowed to widen because of delay in presentation, the burden of repair to both the surgeon and patient also increases (materials and time). When complications occur, there is a higher risk of increase in morbidity and mortality.

The causative factors of abdominal hernias can be divided into 2 broad groups: predisposing and precipitating factors.

Predisposing factors: these can be

- (1) Genetic and congenital (developmental) defect e.g. patent processus vaginalis
- (2) Anatomic variation
- (3) Connective tissue disorders (example collagen derangement due to deficiency of alpha-1 antitrypsin enzyme).
- (4) Nerve damage (appendectomy)
- (5) Weakened Fascial Structures due to ageing, obesity e.t.c.

Precipitating factors: these may be due to

Chronic increased intra-abdominal pressure e.g.

- Ascites, straining from chronic cough
- Straining at micturition (urination) as in patients with bladder outlet obstruction from prostatic enlargement or urethral stricture.
- Straining at defecation e.g. chronic constipation, anal stenosis.

Most of the time many of these factors combine to result in hernia.

Treatment: Under some form of anaesthesia (general, regional or local), the contents are freed and reduced (pushed back) and the fascial defect repaired. This may be direct by using non-absorbable sutures or indirect by using mesh. If complications occur, the treatment takes another shape.

2.3 My Studies

On noticing that many of our patients that came for groin hernia repair appeared scared, cursory questions were thrown at them and their response revealed that the patients had fear of both the surgery as well as general anaesthesia (GA). Earlier surgeons who reported their experiences with groin hernia repairs had recognized the numerous advantages of local Anaesthesia (LA) over GA. (Change FE et al, 1977, Ponka JL 1980, Teasdale et al 1982, Basker Ville and Jarret, 198, Ofili et al 1987, Devies and Horrocks 1989.)

The above prompted us to carry out a prospective study of 138 consecutive and consenting adult patients who had their inguinal hernias repaired under local anaesthesia. We recorded a high acceptability, practicability and satisfaction among the patients. (Agbakwuru et al 1995)

In 1996, this local anesthesia became handy in a sixty year old male farmer who initially presented to us with reducible bilateral inguinal hernias and Chronic Obstructive Pulmonary Disease (COPD). The patient was to have his COPD controlled before the surgery. However, while waiting for the COPD to be controlled, the left inguinal hernia became irreducible and obstructed. The patient presented at the emergency department and the balloon of the Foleys urethra catheter used in resuscitating him converted the right hernia to irreducible state as well. We were able to carry out his operation successfully using LA; general anaesthesia's use in the patient above would have been catastrophic..(Agbakwuru 1996)

A review of 416 patients with abdominal wall hernias revealed that about 30% of the patients presented to us when the hernias had reached their full development or had become complicated with intestinal obstruction.(Adesunkanmi et al 1999)

Similar findings were noted when a study of prognostic factors in childhood inguinal hernias was carried out in 208 patients

(Adesunkanmi et al 1999). In a narrowed study of obstructed inguinal hernia in 110 adults, it was shown that most patients reported after 2.73 ± 4.7 years. Even those who had obstruction still presented after 1 to 5 days. (Adesunkanmi et al 2000). These late presentations of hernia were found to be mainly due to ignorance, fear of general anaesthesia as well as surgery itself.

General anaesthesia: the patient is put to sleep and surgery is done without the patient feeling any pain

Regional anaesthesia: Pain perception is blocked in some regions of the body e.g. lower half of the body, legs or arms using spinal anaesthesia and brachial block respectively.

Local anaesthesia (LA): Here we use drugs that block pain conduction along nerve fibers or neuromuscular junctions and this is injected around the area of operation. e.g xylocaine. The patient would be awake during the procedure, could take per oral few hours later and could even go home the same day or within the next 24-48 hours after surgery.

The acceptability and outcome of the above studies were encouraging and as the news filtered out, more patients started presenting themselves early in our clinic. This resulted in early operation which actually reduced cases with blockage of the alimentary canal in our environs (Agbakwuru, Arigbabu and Akinola 1995).

2.3.1 Premedication for Local Anaesthesia

To allay anxiety, patients were usually given premedication initially using injectable narcotic analgesics such as pethidine/pentazocine.

However at a point in time, pethidine/pentazocine became scarce in Nigeria and we had to resort to formulating an alternative by combining Novalgin plus valium. It was shown conclusively then that this combination was equally as effective as pethidine. Indeed, this observation had already found ready application in our institution and

other neighboring institutions before the ban on the use of novalgin in Nigeria, (Agbakwuru et al; 1999).

2.3.2 Technique of Inguinal Hernia Repair

There are various techniques of achieving repair of groin hernia. e. g. Bassini, Nylon darn, Shouldice, Lichenstein Mesh repair and a host of others. Most of my work involved Bassini, Nylon darn and Lichenstein Mesh repair.

Moloney's Nylon darn (1948): This is a modification of a technique called Bassini which I learnt from Dr. EI Abbadi of Shiroro Dam, Minna. (An Egyptian surgeon 1982-1985)

I pioneered and popularized the use of this technique among postgraduate surgical residents and later Consultants in OAUTHC, Ile-Ife.

a. The original Bassini had fundamental problems of repairing under tension. Moloney's nylon darn modification involved actually making a sort of weaving of suture over which fibrous tissues would later grow to close off the weakened portion. The aim of the nylon darn was to reduce tension on the repaired area. This technique was however still fraught with recurrence of the hernia. Other techniques tried included Sholdice repair. The most current technique - Lichenstein Mesh repair – which is reported to have the least recurrence rate was recently introduced to Ife and environs by my colleagues and I. The cost effectiveness and outcome of this technique though still at infancy are very encouraging (Agbakwuru et al 2011).

b. In a comparative study involving two groups of 160 patients with similar sex, age and weight, we found that there was no significant difference between one-layered closure of skin and subcutaneous tissues and that of two-layered closure of separate subcutaneous tissue and separate skin closure after groin hernia repairs (Agbakwuru, et al, 2009). Using one layer

was found to be faster and more economical and so was advocated.

TABLE I: TWO METHODS OF SKIN CLOSURE AFTER GROIN HERNIA REPAIRS WITH VARIABLES AND RESULTS

Variables		2-layer closure	One layer closure	P-value
Gender	Male	85	84	0.189
	Female	8	3	
Hernia	Inguinal	68	63	0.479
	ISH	25	21	
Duration of hernia		70.04 (months)	58.45	0.071
Subcutaneous thickness	(cm)	64.05	60.17	0.541
Age	Years	67.93	60.37	0.247
Operation time	(Minutes)	72.25	55.45	0.006
Complications	Nil	52	59	
	Wound indurations	25	15	
	Wound sepsis	10	8	0.785
	Wound haematoma	10	3	
	Raw area	0	1	
	Wound dehiscence	2	2	
Total		93	87	

2.3.4 Repair of Special Hernia

- i. **Incisional hernia:** This is a hernia that occurs through a previous abdominal operation scar (Figures 6 & 7)



Figure 6: Incisional Hernia in an Obese patient with Three (3) Recurrences



Figure 7: Incisional Hernia in a Middle Aged Women Following Emergency Cesarean Section

In a study conducted in Ife among 44 women with incisional hernia, I noted that this type of hernia was still common in our environment due to unavailability of the appropriate materials, operations on dirty or potentially dirty wounds under emergency conditions, longitudinal abdominal incisions, obesity, sepsis, and diabetic mellitus among others. Incisional hernia can still recur if obesity, sepsis, and diabetic mellitus are not corrected or properly managed before and after the 2nd surgery. This finding agreed with previous works by Dare and Lawal in 1991 and that of Adesunkanmi and Faleyi in 2003. (Agbakwuru, et al 2008).

TABLE II: FACTORS ASSOCIATED WITH INCISIONAL HERNIAS IN 44 WOMEN

	Number of patients	Percentages (%)
Midline incisions	44	100
Wound sepsis	35	79.5
Absorbable sutures	32	72
Overweight (BMI > 25 kg/m ²)	12	27.3
Post operative ileus	8	18.2
Wound infection	5	11.4
Cigarette smoking	4	9.1
Diabetes mellitus	3	6.8
Coughing (immediate post surgery)	2	4.5
Multiparity (previous multiple C/S)	2	4.5
Haematoma	2	4.5
Cancer	2	4.5
Drain site (outside original wound)	1	2.3
Difficult extubation	1	2.3

Incisional hernias were previously repaired by closing the various fascial defects under tension though apparently successful for many years. Currently, we use a synthetic material that encourages growth of natural but tough tissues which close the defect with less tension and recurrence rate (Agbakwuru et al, 2008). However, we still advise that surgeons should pay more attention to those factors that predispose to index, incisional and recurrent hernia.

Mr. Vice Chancellor sir, all the above were done in an attempt to keep the alimentary canal open.

2.4. A REVISION OF ANATOMY OF GROIN HERNIAS

An age-long traditional teaching in anatomy of groin hernias had to be revised because of a technical fault noted by my colleagues and I during our work over many years.

After several examinations of groin hernias with operations carried out on more than 500 hernias, we noted with conviction that not all inguinal hernias were above and medial to pubic tubercle (Figures 3 & 4). Rather, more than 65% were above and lateral to this land mark called pubic tubercle.

Because of the controversy and confusion that this old teaching had caused over the years and with increasing failure rate among students and surgical trainees examined on groin hernias, we had to suggest that pubic tubercle alone should be used to separate inguinal from femoral hernia. For example, any groin hernia whose neck of sac is above the pubic tubercle should be regarded as inguinal while that below should be seen as femoral. We then concluded that reference to medial or lateral relationship to pubic tubercle should be dropped in order to reduce this confusion (Agbakwuru, et al, 2009)

Figure 7: Incisional Hernia in a Mid Age Woman Following Emergency Caesarean Section

2.3.6. APPLICATION OF LOCAL ANAESTHESIA IN AREAS OTHER THAN HERNIA REPAIR

- i. **Elderly patients:** In our study of medical problems in 659 geriatric patients coming for surgery, we found that LA and other forms of regional anaesthesia were particularly useful in the elderly patients who were always afraid of being put to sleep for surgical procedures (Faponle and Agbakwuru, 1997). Elderly people fear that sleeping under general anaesthesia is another way to the beyond.
- ii. **Day-care surgery:** In our study involving 67 day-care surgical patients, we found that LA enhanced day-care or short-stay surgery with low cost and minimal inconveniences to patients (Agbakwuru, Faponle, Adesunkanmi 2001)
- iii. **Haemorrhoids (Piles) (Jedijedi Idi yiyo or Idi Orobo, or akpuru Ike) (Figures 8 & 9):** In a review of 70 cases that we managed in Ife, it was noted that most of our patients reported late (3rd degrees). Their reasons included shame, unfounded fear of impotence or even death (Agbakwuru, Adesunkanmi, Fadiora, 2004) especially from “sleeping anaesthesia”, as well as surgical treatment.

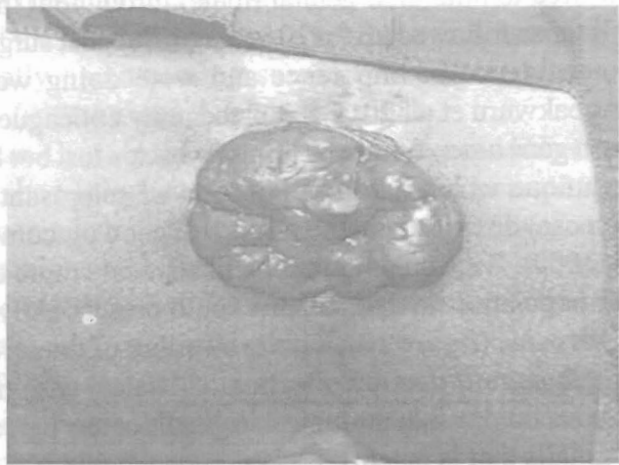


Figure 8: Prolapsed Haemorrhoid (3rd Degree)

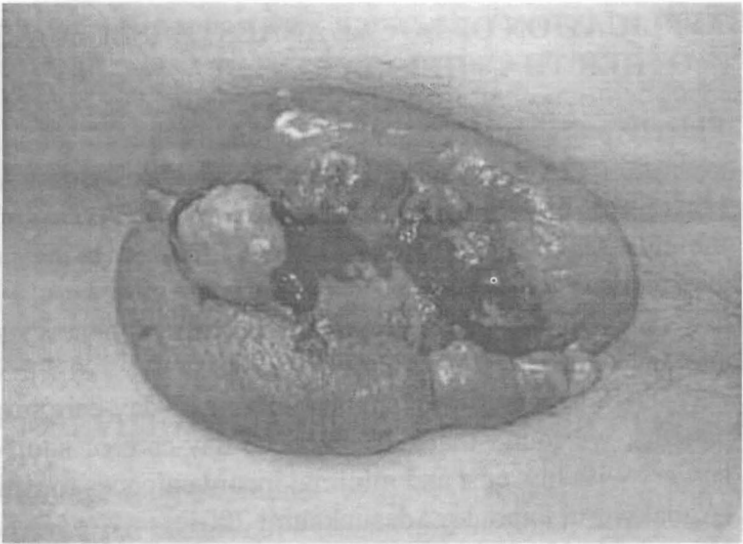


Figure 9: Complicated Haemorrhoid (Thrombosis, Ulceration and Bleeding)

We therefore extended the LA to operations on appropriate piles. At surgery the patients were awake and allowed to hold their genital (male) throughout the operation. All those followed up for 10 years (60%) post surgery reported no incidence of impotence and were doing well sexually. (Agbakwuru et al, 2011). At present my colleagues and I have even gone a step further by bringing back a lost but less invasive technique which involves injection of sclerosant using 50% glucose) dextrose into the piles with good outcome (Alatise et al, 2009). We would however still advocate more education of our population so that patients could present early.

- iv. **Hydrocele (figure 10):** This is swelling of the scrotum (Epon or Akpa-amu) due to collection of 'water' within scrotal sac (serous fluid within the tunical vaginalis or any part of processus vaginalis that is patent).

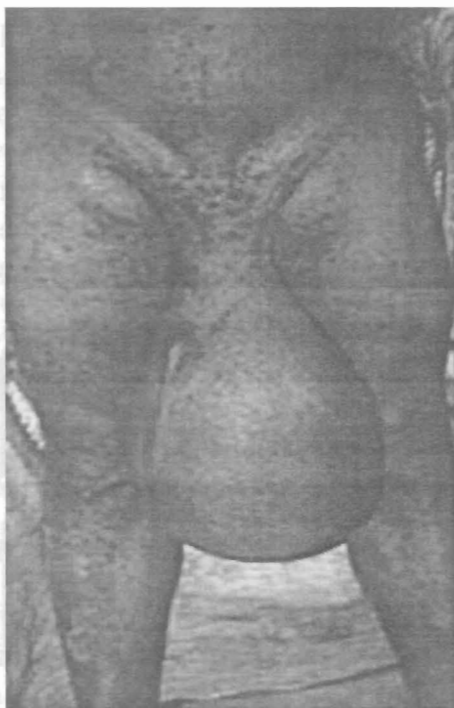


Figure 10: Hydrocele

Mr. Vice-Chancellor sir, my colleagues and I again demonstrated the feasibility and acceptability of LA use for operation on this socially embarrassing surgical scrotal condition in our environment. (Agbakwuru, Salako et al 2008)

- v. **Ovarian Cyst:** In the year 1996, a 35-year old lady (figures 11 & 12) who had 14kg benign ovarian cyst, was operated by me in a mission hospital while on leave. The hospital staff were afraid that the patient might not be able to survive the surgery due to the huge size of the swelling but the encouragement I received from the patient made me forge ahead with the operation. Using LA, about, 7 litres of fluid was initially evacuated before a ketamine-based general anaesthesia was administered and a successful operation was then carried out.



Figure 11: A 35-year old lady with benign ovarian cyst before Surgery



Figure 12: Same 35-year old lady After Surgery

2.3.7. ACUTE ABDOMEN

Acute abdomen connotes a clinical condition characterized by a sudden onset of abdominal pain that would require urgent surgical or medical intervention. In the course of my practice, causes encountered include intestinal obstruction, intestinal perforation, solid organ injury like spleen and others.

i. Intestinal obstruction (mechanical and ileus):

In a review of 29 patients managed for Rectal prolapse in Ile-Ife, we noted that fixation of the redundant rectum to the sacral wall was adequate for our Nigerian patients. Contrary to the fear constantly and silently expressed by our patients, there was no complication of impotence. (Akinola, Arigbabu, Agbakwuru, 1991).

ii. Sigmoid Volvulus and Diverticulosis:

Hitherto, surgeons in Nigeria had thought that diverticulosis (out pouches from inside to outside) was rare in West Africa, but our encounter with a 72-year old man who had recurrent volvulus for 30yrs (twisting of gut round itself) and with our recent findings from colonoscopy (magnified visualization of large gut lumen with a light source), we now know that diverticulosis of the colon is common in Nigeria. This we believe resulted from consumption of (oyinbo man) low fibre foods which hitherto was strange to the traditional African feeding pattern. We therefore advise our people to go back to our forefathers' diet – fresh fruits, plenty of vegetable and other high fiber food materials (Agbakwuru, et al, 2000; Alatise, et al, 2011)

In 1996, we reviewed the changing pattern of acute intestinal obstruction in 42 patients. The common causes were adhesions (40%), strangulated external hernia (16%), volvulus (twisting), intussusception (telescoping of segment of intestine into adjacent one), ascaris worms and large bowel tumors (Adesunkanmi and Agbakwuru 1996). Twelve years later another review of intestinal obstruction was undertaken in our hospital, adhesions were still the most common cause though

hernias remained significant. At the same time, the mortality was still high and was attributed to late presentation to the hospital. (Oladele et al, 2008). A treatment which was either conservative or surgical was aimed at re-establishing a continuous flow of the alimentary canal. **The public is again advised to come early to the hospital whenever suspicion of intestinal obstruction is entertained.** This will give the surgeon a good chance to clear the alimentary canal in a living patient.

iii. **Intestinal Worms:**

Obstruction of the small intestine can result from heavy worm load due to poor hygienic habit and irregular deworming of children. Typical example is an 11-year girl with intestinal obstruction in whom I removed more than 2,050 ascaris worms (Aran, Mkpurumkpu or okpo) (Figure 13). This I extracted by opening both the abdomen and then the intestine (Agbakwuru, et al 1998).

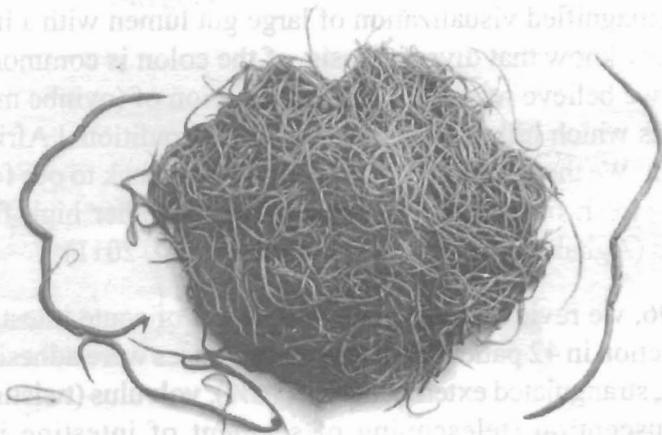


Figure 13: A Collection of 2,050 Ascaris worms Removed from the Small Intestine of an 11-year old girl

iv. Paralytic ileus from typhoid perforation:

Mr. Vice Chancellor Sir, working with colleagues, I found that typhoid perforation – a complication of typhoid enteritis is still much with us (Ikeme et al, 1966; Archampong 1969; Olurin and Ajayi 1972; Badejo and Arigbabu 1983; Ajao et al, 1983). With availability of more potent antibiotics, improved anaesthetic and surgical skills coupled with high technology facilities, mortality rate in this condition was noted to have dropped in our hospital from 15-20% to 3-13%. Since the source of infection is faeco-oral route, we therefore advise on improved personal hygienic practices e.g. washing of hands after toilet especially before shaking people and also early report to hospital. (Agbakwuru, Adesunkanmi et al, 2002). In addition the government should improve water supply, drainage and waste disposal systems.

Typhoid infection can also cause intestinal obstruction by initially paralyzing the gut and inhibiting abhorral propagation of its content. It can later be due to mechanical fusion of the gut by fibrous bands.

Sometimes typhoid perforation and Ascaris intestinal perforation could co-exist as demonstrated in one of our patients, a 9-year old boy in whom we found a live round worm swimming beside the typhoid perforation (Okeniyi et al, 2007)

vi. Splenic injuries:

Our research revealed that spleen (awon, inyinya) an organ in the abdomen which is very important in the fight against bacterial infection is commonly injured in blunt or penetrating abdominal trauma. Previously, most splenic injuries in Nigeria ended up with total splenectomy (removal of entire spleen), thus “dismissing the commander in charge of the immune system of the body. However, with the encouragement from such teachers as Arigbabu and Adeyemo, we started repairing

amenable injured spleens as practised in developed countries (Agbakwuru et al, 2003).

Currently, our team now routinely practises non-operative conservative management of splenic injuries in appropriate patients (Akinkuolie et al, 2010)

Splenic rupture is commonly associated with bleeding inside the abdominal cavity and if this is much and not evacuated early, may lead to peritonitis which could paralyse gut movement and thereby causing blockage of the alimentary canal.

2.3.8 DIAGNOSTIC UPPER GASTROINTESTINAL ENDOSCOPY (UGIE) (Figures 14 & 15)

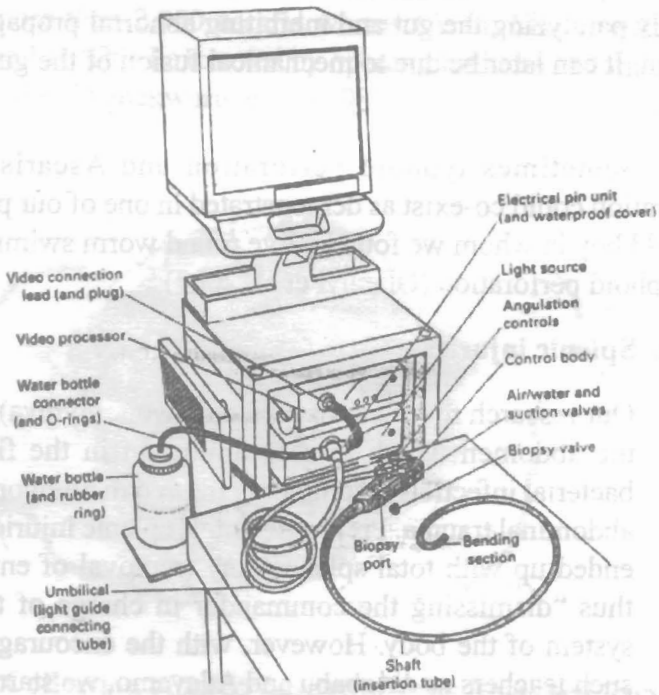


Figure 14: A Gastrointestinal Endoscopy Machine



Figure 15: An Upper GI Endoscopy in Session in OAUTHC

This procedure allows the operator to visualize the internal linings of the walls of the upper GIT, looking for causes of dysphagia, (difficulty in swallowing) odynophagia, (painful swallowing), haematemesis (vomiting of blood), persistent vomiting, dyspepsia, bloating, persistent epigastric pain/discomfort, melaena stool (altered blood mixed with faeces), unexplained anaemia or weight loss e t c. One can take pictures and obtain specimens (biopsy) for further investigations.

The esophageal symptoms, the gastric and duodenal symptoms are pointers to diseases of these areas and if left untreated or unattended to usually leads to the blockage of the esophagus, the gastric outlets with malnutrition, disorganization of the homeostasis of the patient or even his/her premature demise. With the use of upper GI endoscopy, these conditions can be diagnosed early when they are still curable or palliated appropriately when they are advanced.

This procedure was used by my colleagues and I for finding and removing blockage in the upper part of the alimentary canal for more than 20 years of my research work.

Under the tutelage of Prof. A.O. Arigbabu, an Endoscopic giant in Africa, I learnt the use of this instrument and the procedure and later became a member of the Association of World Gastroenterology Organization (WGO) and African Middle East Gastroenterology Association (AMAGE).

2.3.9. *Helicobacter pylori* (*H. pylori*)

Helicobacter pylori (Figure 16) is a gram-negative, flagellated, motile, and curved spiral bacterium commonly found on the gastric mucosa and often between epithelial cells (Balser, 1996). This micro-organism produces various enzymes, peptides and toxins most of which are for its survival in the hostile acid-pepsin environment. Unfortunately these survival products have made *Helicobacter pylori* to be associated with gastroduodenitis, peptic ulcer diseases as well as gastric cancers. (Wadstromo, Hirmon, 1996; NIH consensus, 1994).

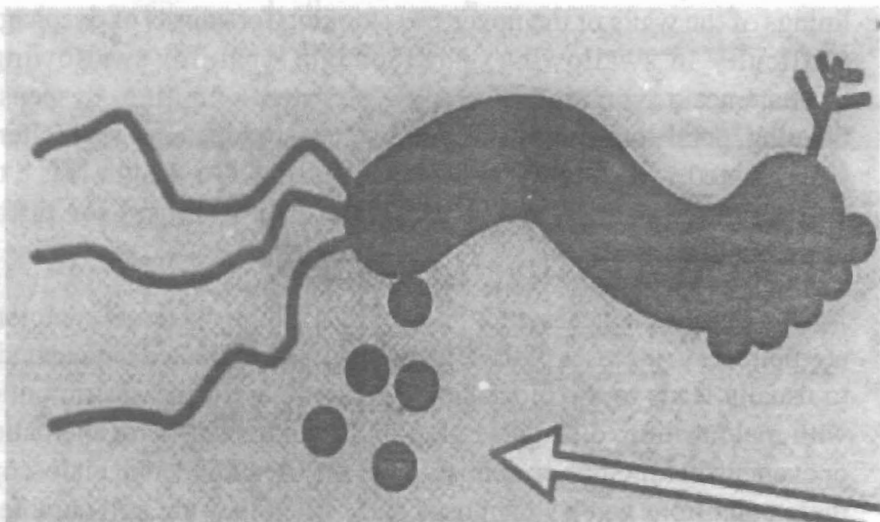


Figure 16: Schematic Diagram of *Helicobacter pylori*

The mode of transmission is oro-oral and faeco-oral, hence the risk factors include among others overcrowded living condition, bed sharing and low socio-economic class.

i. In our study of 92 Nigerian patients, we noticed a high association between gastrointestinal helicobacter pylori infection and peptic ulcer diseases (Smith et al, 2001);

ii. In another study involving endoscopic assessment of 203 patients, using actual test of H-pylori by use of a reagent that can detect increased enzyme secretion by the organism, we noted a high correlation between the visual endoscopic assessment and actual urease-enzyme test for the organism. This proved very useful when access to the test kit became economically difficult. An empirical treatment could therefore be instituted and patients' sufferings minimized. (Agbakwuru et al, 2001)

iii. We also found that the use of gram staining of 435 stomach biopsy specimens was the best suited rapid method for detection of the H.pylori so that appropriate drugs could be started early (Oyedeki et al, 2002)

iv. In our study of another set of 92 patients with peptic ulcer disease in Western Nigeria we documented 85% sero-prevalence of H.pylori in their blood samples (Smith et al, 2001).

v. In another study using 41 clinical isolates from 38 patients, we were able to find the molecular type of Nigerian Helicobacter pylori isolate by PCR restriction fragment length polymorphism (Smith et al 2003).

vi. We also found a very high correlation between the urease enzyme test for H. pylori and gastric mucosal histology among 95 patients with duodenal ulcer, gastritis and gastroduodenitis (Arigbabu, et al, 2004).

vii. In a study of antimicrobial susceptibility of *H.pylori* using 32 isolates from different patients, we were able to demonstrate multiple acquired antibiotic resistance among the commonly used antibiotics. Hence frequent and regular re-evaluation of eradication regimen was advised (Aboderin et al, 2007).

viii. We also noted the usefulness of pulse-oximeter in the monitoring of patients for hypoxia (low oxygen tension) and cardiac reaction to the procedure of endoscopy in order to detect and treat promptly any unusual side effects (Faponle and Agbakwuru, 2001)

2.3.10 Gastro-Oesophageal Reflux Disease

In the year 2005, we reported a study of 225 volunteer subjects and patients with gastro-oesophageal reflux disease (when gastric content flowed back to the oesophagus) where we recorded a very high association between the reflux disease and dental erosion. (Oginni, Agbakwuru, Ndububa, 2005)

2.3.11 Clinical Versus Upper GI Endoscopy Diagnoses

In our study of pattern and validity of clinical diagnosis of upper gastrointestinal disease with endoscopy involving 882 patients, we showed that most of the former (clinical diagnoses) were at variance with the endoscopic findings. These had often resulted in either inappropriate or delayed treatment. We therefore re-emphasized that most of the clinical “off head” diagnosis made about oesophagus, stomach, and duodenal disorders were usually wrong or inconclusive without endoscopy. Hence we recommended that every tertiary institution in Nigeria should as a matter of necessity have GIT endoscopic facilities for proper management of such disease as peptic ulcer and upper gastrointestinal cancers (Agbakwuru et al, 2006).

In addition, we noted that surgically curable early gastric cancer could be picked up with the use of endoscopy in our center. In a retrospective study involving 230 gastric cancer patients, 145 (63%)

of who had upper gastro-intestinal endoscopy, we noted that most of the patients were seen at advanced stage with intra-peritoneal spread and thus poor outcome. We therefore suggested that a high index of suspicion by clinicians, health education for early presentation and availability of endoscopic facilities would help to facilitate early diagnosis and improve outcome (Alatise et al, 2007).

2.4. LOCAL LANDMARK IN SURGERY

Mr. Vice-Chancellor sir, in order to forestall disappointing recurrence after an apparent successful surgery bordering the alimentary canal e.g. Hernia repair, treatment of rectal prolapse or haemorrhoids, we usually exclude before operation “the big man” factor such as bladder outlet obstruction. This we do by using urodynamic investigations e.g. urinary flow rates. Previously, for urinary flow rate, we were using figures from America, Asia and Europe, but by the year 2004 my colleagues and I were able to use simple and inexpensive method to determine for the Nigerian adult males a reference value of 15.8ml/sec. for urinary flow rate (Agbakwuru, et al, 2004).

2.5. APPENDAGES OF THE GENERAL SURGEON’S EYES, HAND AND KNIFE:

The general surgeons of Nigeria, especially those of my era have to go frequently beyond the abdomen. My colleagues and I therefore studied and made useful contributions to the various diseases of the thyroid gland (figure 17) and breast (figure 18) (Adesunkanmi, Agbakwuru, Akinola, 2000 and 2001; Lawal, Agbakwuru, Olayinka, Adelusola 2001).



Figure 17: Patients Presenting with Multiple Nodular Thyroid Swellings (Goitre)



Figure 18: Patients Presenting with Breast (Right) Cancer and An Enlarged Left Breast Weighing 6kg

2.6 ANOTHER LOCAL LANDMARK

With feeling of actualization, I participated with the team of the first indigenous Nigerian surgeons to successfully perform kidney transplantation on Nigerian patients. The team's success drew much from the strong perseverance and doggedness of Prof. Wale Akinsola, (a renal physician) the meticulous surgical skill of Drs. Tajudeen

Badmus and Ayo Salako, the painstaking and efficient anaesthesia from Prof. Faponle and team plus various contributions from other members of the kidney family (2005; 2008). Our team has been able to successfully perform additional eight more kidney transplantations since then.

3.0. MEDICAL AND SURGICAL EDUCATION

From my understanding and application over the years, I have noticed that some of the good ways of transferring / impacting surgical-cum-medical knowledge and skills to medical students as well as postgraduate doctors are as follows:

- a. Teaching under a calm and friendly atmosphere
- b. Teaching under a free and open atmosphere
- c. Interactive technique of teaching by pre-formal didactic lectures,
 - followed by question-and-answer sessions involving
 - physical demonstration by students and teacher.
 - Use of models, mannequins, charts, diagrams, projections and pictures among others.
- d. Good master – Apprenticeship relationship
- e. Arigbabu's rule-of-thumb
 - Do one procedure with your Resident assisting you.
 - Assist your student to do the next similar procedure.
 - observe him teach another, with gradual imbibitions.
- f. I also popularized the SOAP system of reviewing ward patients in Wesley Guild Hospital, Ilesa, though this system was not originated by me.
 - S – Symptoms,
 - O – Objective physical examination findings,
 - A – Assessment of problems or diagnoses,
 - P – Plan of action (investigation, treatment, dietary advice e t c)

The SOAP system compels the Surgeon/Physician to thoroughly review his patient and be current with the problems and management of the patient.

3.1. STUDENT EXAMINATION TECHNIQUE

- i. Graded forms of examinations for each level of students
- ii. Examining on a level playing field for all the students
- iii. Creating a conducive atmosphere for the examinees in order to find out exactly what the student knows or does not know.
- iv. Reducing subjectivity by a panel of examiners instead of single-man examiner in the clinical/oral examination /or use of objective structured clinical examination (OSCE)
- v. Structured System Multiple Choice Questions (MCQ) with graded penalties for different forms of MCQ e.g.
 - True or False (T/F)
 - Pairing of questions
 - One – in – 4 stem questions
 - Once in 5 stem questions
 - Multiple combinations

With descending levels of penalties in order to reduce guessing as this concerns the training of a person who is to care for a sick person.

- vi. Combination of short and long essays in order to test different levels as well as various aspects of understanding of the subject by the candidates
- vii. This teaching and medical knowledge evaluation were extended to both sister universities and postgraduate colleagues within the country and in the West African(W/A) sub-region such as the Royal Victoria Hospital in the Gambia (1994, 2007)

4.0. RECOMMENDATIONS

1. Early presentation of patients with surgical problems to the hospital in order to achieve cure when it is still possible

2. Improved public education to reduce fear of surgical treatments and encourage early presentation.
3. Use of LA whenever possible to reduce cost, allay fear of surgery and possibly reduce morbidities cum mortalities.
4. Every tertiary medical institution in Nigeria to have endoscopy facilities in order to improve diagnosis, treatment and outcome of gastrointestinal disorders. The Governments (Local, State and Federal) should improve drainage /disposal system and water supply, while individuals should adopt good and safe hygienic practices in order to reduce incidence of infection such as typhoid and Helicobacter pylori with their attendant consequences.
5. Surgeons should endeavour using improvised alternative methods of treatment in the absence of the ideal to reduce suffering of our people from ill health
6. Surgeons should adapt surgical techniques and facilities to our local needs
7. Lecturers should adopt teaching and examination methods that will produce the best doctors in our environment

5.0. CONCLUSION

Mr. Vice-Chancellor Sir, I am sincerely happy to be associated with this great University that has enabled me to actualize a substantial part of my life ambitions-: acquiring knowledge and skills that have enabled me to cure/palliate surgical conditions or diseases as well as carry out researches and impact knowledge on the younger generation. I am happy to be presenting this inaugural lecture in the presence of my guardians and mentors like Chief (rtd. major), JNM Agbakwuru, Livy M Agbakwuru, JJ Agbakwuru, Prof. Olu Arigbabu, Prof. Roger Makanjuola and Prof. Wole Odesanmi, Profs. Adejuyigbe and Soyinka among others.

My special thanks go to my lovely wife (Margret Ogechi), my children, granddaughter, my immediate junior brother Ezeji Christopher and all my other siblings who gave me all the comfort, love, support

and encouragement in doing my work. My thanks also go to my wife's family of Late Nze K.K. Ojukwu.

It is worthy of note that among the surgeons who passed through me as students/ residents are: Dr. Segun Alatise who now does both diagnostic and therapeutic endoscopy with relative ease, Dr. Adewale Adisa, a laparoscopic surgeon; two cardiothoracic surgeons, (Drs. Akinwumi Ogunrombi and Uvie Onakpoya); Neurosurgeons (Drs. Edward Komolafe and Augustine Adeolu) and Nigerian premier kidney transplants surgeons all of whom I contributed to their training.

Most importantly, my colleagues and I have happily and by God's grace, been able to remove blockage along the alimentary canals of many patients and thereby enabling them to live a more qualitative life and as long as they have been destined to.

Mr. Vice-chancellor, sir, ladies, and gentlemen. I sincerely and humbly thank you all for listening. God bless you all.

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