

THE TRAVAILS OF RURAL SURGERY IN NIGERIA

AND

THE TRIUMPH OF PRAGMATISM

by

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**3rd Surgery Guest Lecture,
Department of Surgery
Obafemi Awolowo College of Health Sciences
and
Olabisi Onabanjo University Teaching Hospital
Sagamu, Ogun State, Nigeria**

13th December 2005.

WELCOME ADDRESS

PROTOCOLS

The topic of today's lecture 'The travails of rural surgery in Nigeria and the triumph of pragmatism' is very apt for the current state of health care delivery in our nation. The truth is that the majority of our people live in rural areas where they have very limited or sometimes no access at all to health care particularly surgical care. Very few qualified surgeons will readily accept to work in the rural areas for obvious reasons: lack of basic infrastructure, equipment and social amenities.

Our guest lecturer for today took up this challenge of rural surgical practice over two decades ago and has indeed triumphed gloriously to the extent that his practice, Awojobi Clinic Eruwa, in Oyo State, is a recognized centre for the training of undergraduate students of University of Ibadan and resident doctors in surgery, obstetrics and gynecology and family medicine from the University College Hospital, UCH, Ibadan and Obafemi Awolowo University Teaching Hospitals, Ile-Ife. He has performed over 5000 herniorrhaphies and over a thousand lumpectomies and so on and so forth.

Dr Awojobi has cut a niche for himself in the field of rural surgery and without fear of contradiction; he is very well suited to do justice to the topic of today. We look forward to a very exciting and informative lecture. We hope at the end of the lecture, our medical students and residents will be spurred to take on the challenges of rural surgical practice in Nigeria. We also hope the lecture will influence the attitude of the authorities to health care delivery especially in the rural areas.

You are most welcome to this occasion.

Thank you very much.

Dr E A Oyewole

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INTRODUCTION

My teacher, the Deputy Vice-Chancellor, Olabisi Onabanjo University, Ago-Iwoye and chairman of this guest lecture, Professor O K Alausa; the Provost, Obafemi Awolowo College of Health Sciences, Prof A B Ejiwunmi; the Chief Medical Director, Olabisi Onabanjo University Teaching Hospital, Sagamu, Dr F A Oluwole; my teachers here present, Dr A A Musa, the Head of Surgery, my senior colleagues, distinguished guests, ladies and gentlemen. It gives me great pleasure to be here today being lucky this second time to share my experiences in this state. The obvious question will be: 'When was the first time you were unlucky?', the answer to which I will provide very shortly.

I want to express my deep gratitude to the Head and the entire academic staff of the Department of Surgery for the invitation and honour to be the third guest speaker at this series of Departmental Lectures. It gives me greater joy that I am coming in the footsteps of my teacher, Prof S A Adebajo who delivered the first lecture on 1st February 2005 and Prof O M Oluwatosin, my Head of Department at Ibadan, who was here on 5th May 2005. I am an Associate Lecturer in the department.

I bring you good tidings on behalf of the Eleruwa of Eruwa and the rural and peaceful folks of Ibarapa district of Oyo State.

In true Yoruba culture, when an artiste takes to the stage he pays homage to Olodumare, the creator and to his senior and junior colleagues in his field of accomplishment. As surgery is both a science and an art, I hereby pay homage to Olodumare and the torchbearers of rural surgery in Nigeria: Emeritus Professor T O Ogunlesi, Papa (Dr) S A Ogunlusi and Professor E O Olurin who in their days as medical officers in far flung district/general hospitals of the old Western Region must have saved several lives with the use of the surgical knife.

I pay tribute to Mr V O Fatunla, FRCS of the Baptist Medical Centre, Saki, assisted for several years by my senior colleague in this department, Mr A O Tade, FRCS, my colleague, Prof Ewan Alufohai in Edo State, Dr S Gyoh in Benue State, the late Dr C A Pearson, who handed the surgical baton to me in Ibarapa in 1983, my junior colleagues, Dr R O Tijani and Dr M H

Adabanija who are assisting me in Ibarapa and to many other colleagues I do not know. *Mo juba omode, mojuba agbalagba.*

The travails of rural surgery in Nigeria can be found in 1. the training of the rural surgeon, 2. the appointment of the surgeon, 3. the administrative milieu in which he has to work in the public service, 4. the problems of infrastructure in the hospital, 5. the peculiar clinical dilemmas he is confronting twenty four hours of the day 6. the financial resources to provide health care and 7. the social life in the rural setting.

However, in these travails reside the inherent pragmatic solutions as the adage '*necessity is the mother of invention*' comes into play all the way. The Yoruba will put it like this: '*kokoro to nje efo, inu efo lo wa*' and '*Adani loro agbara lofi nko ni.*' Apologies to our senior citizens.

1. THE TRAVAILS OF TRAINING THE RURAL SURGEON.

In the seventies, when I started training at the Ibadan Medical School, my tutors, while teaching every clinical subject from diagnosis to treatment always said: 'In answering clinical questions, you must imagine you are in a rural area like Igboora or Eruwa, where most of the patients live. You then build it up to the teaching hospital level.' At that time, it made some sense in most clinical disciplines except surgery, as there was no example to go by in Ibarapa district where we spent 10 weeks of rural posting.

Although I set out to train as a general surgeon, I started training at the University College Hospital, UCH, Ibadan with a five-month rotation in the cardiothoracic surgical unit, CTSU. Those were memorable days culminating in open-heart surgery, which was fast becoming a commonplace routine then.¹ In this unit I was taught the art and science of documentation, which is the heart and soul of research.

During surgical residency at the UCH, the resident was posted to the District Hospital, Eruwa for one month to provide surgical service to the best of his ability. I was there in April 1980. Although it was unsupervised, there was discipline in the medical field in Nigeria of those days and the surgical registrar knew his limitations and would not engage in private practice. The system was working fairly well and the experience was worth it. It was to

be the second time the would-be rural surgeon would live and learn in Eruwa.

In preparing fully for a rural practice, I ensured I rotated through all the surgical units, plus three months of pathology (the first resident to do so) and my terminal leave in anesthesia without pay.

Another travail during residency was the dissertation required for the final examinations of the fellowship of the National Postgraduate Medical College of Nigeria. It was and still is the Achilles heel of many residents at the final stage. The late Professor Emeritus T F Solanke had advised me, within one week of starting the residency in 1977, to start preparing the dissertation required five years later. A year thereafter, Professor O O Ajayi was very instrumental in getting a viable project started and successfully completed twelve months ahead of schedule. The research findings were accepted for publication in the prestigious American journal, *Diseases of Colon and Rectum*, five months before my first attempt at the final examinations.²

Although, the residency training should normally last five years, I spent six years because I did not avail myself of the **optional** opportunity of travelling abroad for one year and for this I was failed twice in 1982 in the final examinations to become a rural surgeon.

The mental agony associated with such experience was one of the hidden travails of rural surgery in Nigeria. I had realized that one year abroad at that stage could be disorientating and counter-productive to solving the medical problems in Nigeria. We should remember that open-heart surgery was a common operation at Ibadan and Enugu during that period and there was no need to travel abroad for training in most of the surgical disciplines.

The total effect was that I went back to UCH after National Youth Service to learn to climb a hill (that is general surgery) but ended up trained to conquer the mountain (that is cardiothoracic surgery).

In all, the decision to have my undergraduate and postgraduate training completely in Nigeria was deliberate. It was based on the implicit confidence that all my teachers at Ibadan were world-renowned and could train their kind solely in Nigeria.

Another source of inspiration was the 'Red Devil', the battle tank of the Biafrans that was deployed in battle from Aba, where it was made, until it got stuck at Ore during the civil war, 1967 - 1970. I had inspected the disabled Land Rover-turned-battle tank at Ore and concluded that Nigerians could solve all their problems with little or no external help.

The third inspiration was that I have always looked forward to a day like this when everything I am to talk about is homegrown in Ibadan and Ibarapa district with no foreign influence whatsoever.

Although I had several opportunities to travel abroad for undergraduate and postgraduate training, I journeyed out of Nigeria for the first time in 1995. That was 20 years after becoming a medical officer and 12 years of being a rural surgeon.

2. THE TRAVAILS OF APPOINTING THE RURAL SURGEON.

My travails in 1983 were not over yet. I wanted to work in this state because of its geographical size and being sandwiched between the two tertiary centres in Lagos and Ibadan. I made nine trips to Abeokuta in search of a job as a Consultant Surgeon to no avail and for no obvious reasons as there were only three surgeons in the state at that time. I even travelled on Sundays to see the late Ogboye of Egbaland, Chief M O Kuti, who was the Chairman, Ogun State Health Management Board.

However, when my time was running out in UCH, I literally 'ran' back to Oyo State Health Management Board wanting to be posted to the General Hospital, Iwo that I had surveyed cursorily. I remember telling Dr M A Aboderin, the late Director of Medical Services in Oyo State in 1983, that going to Eruwa was like going back home when he suggested my posting to the newly completed Comprehensive Hospital, Ejigbo or the District Hospital Eruwa. He had told me a young surgeon, just graduating from the UK, had been posted to Iwo. This is why I feel I am second time lucky in Ogun State on this auspicious occasion. Once again, I thank you very much for this opportunity.

The last words from Dr Aboderin to me before I set off to Eruwa were: *'we will make your stay in Eruwa comfortable'*. But, in the three years I worked at the District Hospital, Eruwa all the government did was to pay my salary and allowance. I did not

receive any material whatsoever after the stock I met was exhausted.

This initial experience in the public service was serious enough to deter the would-be rural surgeon. I could have returned to the UCH where my teachers would gladly have accepted me. But, the driving force was the will to serve the rural populace and give back to them what I had received while being trained from 1970 to 1983.

3. THE ADMINISTRATIVE TRAVAILS OF THE RURAL URGEON IN THE PUBLIC SERVICE.

Effective medical care cannot be delivered in the milieu of the general orders that operate in the public service. When I arrived Eruwa in August 1983 it was at the tail end of the free health service of the outgoing civilian administration. Some surgical materials and drugs were available but were soon exhausted by the time the military staged a coup in December.

In April 1984, the military introduced fees into the health sector without providing the drugs and other consumables. The hospital had not only become *'mere consulting clinic'* but the health providers were to become supervisors of sufferings and deaths if they operated by the general orders.

The pragmatic solution was to initiate revolving funds for drugs, surgical materials and x-ray films from monies contributed by members of the community in Eruwa and the prescribed fees collected from the patients but managed by us. Scrupulous accountability was our armour against government sanction such that my reply to a query from the administrators in Ibadan elicited no reaction for two and a half years.

In the meantime, comprehensive surgical service was brought to the doorsteps of Ibarapa populace. It culminated in the building of a twelve-bed ward within six months, November 1985 to May 1986, from funds realized from our endeavours and donations in cash and kind from the community. A building that would have cost N150 000.00 was constructed by direct labour with N15 000.00.

Government officials did not like this independence of action. So, a letter asking me to stop and confirm in writing that I had stopped triggered my resignation in September 1986 like an

artiste that I am, bowing out when the ovation was loudest. Actually, the title of my resignation letter was ‘... *when the ovation is loudest.*’ At the end of my tenure of service, the government auditor came to verify the accounts of the hospital. This exercise eventually led to the State Merit Award for rural medical practice in 1988.

Eruwa community rose in unison and came to my support, not in confronting the ruling elite, but in providing accommodation for our private practice, Awojobi Clinic Eruwa, with the mission statement: ‘*a private hospital in the public service*’. Our landlords, Chief M O Oladele, Prince A Adelokun, Mr J O Oladele and Papa J O Obisesan, did not charge any rent for the first three months and thereafter accepted from us the rent paid by the former tenants. Papa Obisesan loaned me N5 000.00 without interest or collateral to set up the practice.

Our permanent site, which was built between April 1988 and August 1990, occupies 10 hectares of land, which has been given to us **absolutely** free of charge. In fact, we do not sell land in Eruwa. By this action, the people of Eruwa had provided a pragmatic solution to one of the travails of rural surgery in Nigeria. Our people say: ‘*ti ona kan koba ti, ona kan kiisi*’, ‘*when a door closes another one opens*’. Apologies to my elders, again. In further appreciation of what they own, I was offered the chieftaincy title of Baasegun of Eruwa in 2000. The *iwuye* ceremony is still in gestation!!

4. THE TRAVAILS OF INFRASTRUCTURE IN THE HOSPITAL

Water Supply

The first problem I faced on arrival in Eruwa was the gross inadequacy of water supply-the indispensable infrastructure in any hospital worth that name. At that time, it was the system of bowls and buckets for most part of the day. This was surely unacceptable in the delivery room and the theatre.

Water supply from the works was intermittent and with the 90,000 litre overhead reservoir it was not possible to provide water round the clock without running the risk of having no water in reserve when there was failure at the works. This situation was

recurrent with shortage of chemicals and erratic power supply being frequent occurrences.

Over the three-year period, we built a series of secondary reservoirs with a total capacity of 30,000 litres. Thus, all the wards, theatre, kitchen and laboratory had their own reservoirs providing water from the taps all the time. The main reservoir could serve us for about three weeks without water works pumping.

In January 1985, we constructed a deep well to provide another source of portable water. To facilitate water distribution we purchased a hand pump and a gasoline pump, which lifted water into the various reservoirs. All constructions had been through direct labour using hospital personnel and artisans in the neighborhood.³

At our permanent site, throughout the rainy season that spans April to October, all the rainwater falling on all roofs is collected in concrete reservoirs from cement gutters at roof level. A 30 000 litre reservoir will satisfy our requirement till January after which we resort to pumping of water from six deep wells sunk in the valley using a portable pump. Thus we do not rely on the municipal water supply.

Recently, we have constructed an earthen dam across the stream that runs through the clinic, all in an effort to make us sufficient in water supply. We will populate the dam with fish to control mosquito breeding and provide protein for the patients and staff!!

Energy Supply and Lighting

Other initial problem at the District Hospital was electricity supply. Two high-powered generators were installed at the inception of the hospital. One broke down in 1978 and its parts cannibalized to maintain the second, the functioning of which was unreliable and expensive. In the light of this, we launched an appeal fund for a new generator in March 1984. By November 1984, we had bought a 5KVA diesel generator at =N=6,000.00 mainly from operation fees and the appeal fund. This generator was capable of providing the essential electrical needs of the hospital except x-ray service.

At Awojobi Clinic Eruwa, the buildings are constructed with large windows so that natural lighting is adequate to perform

surgery in the daytime. Ventilation is good and obviates the need for fans and air conditioners. We have fabricated a coal furnace that is more efficient than the diesel or gas burner to operate the autoclave and the distiller.

Recently, the inverter came into use. This is a device that converts the direct voltage of the car battery to the alternating voltage of the national grid or the electricity generator. We bought an imported brand for N75 000.00 two years ago. However, I am happy to inform you that a young Nigerian engineer, Mr Bola Adeniyi, who works in Ikenne, 15km from here, has produced a reliable version that costs a third of the imported brand. So, when we operate at night there is no longer the danger of Power Holding Company of Nigeria holding us to ransom during surgery!!

For six continuous years, we did not have electricity in Eruwa and Ibarapa until four years ago. I have challenged Engineer Adeniyi to produce the solar panel, which is the final solution to the problem. I am sure he will do it.

Sewage disposal

Human waste disposal at the government hospital had been hazardous until June 1984, when, with the aid of Ibadan medical students on posting to the hospital, we completed the construction of a three-compartment ventilation-improved pit (VIP) latrine for the use of our patients and members of staff. The water closet system installed when the hospital was built was inappropriate culturally and unworkable in the face of inadequate water supply.

Equipment

- The **operating table** was built in 1986. It is sturdy, has the basic tilts required by the surgeon namely: elevation and depression using the hydraulic jerk of the motorcar, Tredenlenburg tilts, neck flexion and extension and the lithotomy break. It can be fixed with our adaptation of the Mayo trolley which we call Olumide's table – after the medical officer, my student, who suggested it. It is made of 90% wood and 10% metal, covered with formica to improve its aesthesis and allow washing down. It costs less than 10% of the imported brand made of cast

iron.⁴ This table was a prize – winning project at the “Innovation of the Year” competition organised by Ikeja Jaycees.

- The **autoclave** and the **water distiller** are made from domestic cooking gas cylinders and are powered by the coal furnace we fabricated. It takes 20 minutes to autoclave materials. Thus, we could be performing surgery nonstop if gowns and other linen are available. Water is distilled at the rate of 10 litres an hour.⁵ The water distiller was also a prize-winning project by the National Agency for Science and Engineering Infrastructure

- The **pedal suction pump** is fabricated from plumbing pipe, a piece of leather and a reversed bicycle valve.

- The **haematocrit centrifuge** has been fashioned from the rear wheel of the bicycle. The disc revolves at 5400 rpm (equivalent to a force of 3 360g) enough to pack the red cells in five minutes.⁶ When we ran out of plasticine for sealing the capillary tubes, the cheap and readily available candle wax has proved just as effective⁷ as for the embedding of tissue for histopathology.

A reviewer of the article on the device for the journal, TROPICAL DOCTOR wrote;

‘the author is to be congratulated for designing this piece of equipment’. He went on: *‘I admire the ingenuity’.*

- **Intravenous fluid** therapy is lifesaving in many clinical situations especially surgical. However, the fluid must be available when needed in adequate quantity to ensure successful treatment. Until recently much of the intravenous fluid in the country was imported and costly on the open market. This has resulted in its scarcity in the peripheral health units with attendant morbidity and mortality in patients requiring intravenous fluid therapy.

In 1984, two of my surgical patients (one elective and the other emergency) died from inadequate fluid therapy. So we launched into intravenous fluid production along the lines described by Maurice King in his very handy and practical book **“Medical Care in Developing Countries”**.^{8,9}

We should remember that the UCH, Ibadan used to produce all the intravenous infusions it needed when we were medical students in the 70's.

To date we have produced 54 430 litres of normal saline, 3 550 units of acid citrate dextrose solution for blood transfusion and 1 900 litres of 25% dextrose all at 10% of the cost on the open market.

- **Histopathology service**

Another problem associated with the decline in the teaching hospitals was the gross delay in obtaining histopathology reports on operative specimens. By August 2003, we had 49 outstanding reports at the University Colleg Hospital, UCH, Ibadan Pathology Department dating back to 2001. We had paid one thousand five hundred naira (N1 500.00) for each specimen.

Again, we have overcome that bottleneck by procuring the microtome and other accessories to produce the slides. Technicians who are holders of National Diploma in Science Laboratory Technology of the Polytechnics have processed 626 specimens to date, most of which originated from our patients and a pathologist in UCH reads the slides for us. Results are available within 10 days of obtaining the specimen by the routine we have established.

We have adapted the ordinary candle wax to replace the standard paraffin wax for making blocks of the tissue, the surgical or razor blade has replaced the imported microtome blade and a small kerosene stove has taken the place of the electric hot plate for fixing the slices to the glass slides. The candle wax and surgical/razor blade are much cheaper but just as effective as the imported substitutes.

Transportation.

Another major problem in health care delivery in rural areas is transportation. Poor and expensive transportation system deters the patients from seeking medical help in time.

We have contrived a tricycle from the conventional motorcycle and adapted it for a village ambulance. We call it KEKE ERUWA or AUTONOV – 3. Autonovs 1 and 2 were the inventions of my elder brother, Professor Ayodele Awojobi, a

mathematician, a mechanical engineer and a social activist of the University of Lagos in the seventies and early eighties.

5. THE CLINICAL TRAVAILS OF RURAL SURGICAL PRACTICE.

The first thing I learnt on getting to Eruwa was that I was going to manage both the patient and his relations. This is a critical component of rural surgical practice; reminiscent of the famous Aro Village of the renowned psychiatrist, Professor Adeoye Lambo.¹⁰

Relations stay with patients 24 hours of the day. They offer useful nursing care and act as continuous monitors of the patient's well being. Some could be mischievous - administering native drugs to the patient or taking other tablets brought from home. This practice is fortunately infrequent, as I engage in health education most of the time. Maximum cooperation is readily assured if steps in the management are explained to them, especially in surgical cases. During surgery, the relations are encouraged to come into the operating room and watch the operation. Those who cannot stand the sight of blood are excused.

In presenting some of the peculiar clinical problems faced by the rural surgeon, let me quickly report on the surgical practices of the traditional healers.

The first healer I met in 1983, who claimed he could cure keloids, ended up infecting the keloids with one patient developing tetanus. Later, the healer developed diabetes mellitus complicated by gangrene of the foot. When advised to have below-knee amputation he prevaricated until he needed above-knee amputation to stay alive.

The automobile panel-beater-turned bonesetter is the latest arrival on the scene. Several young men with malunion of lower limb fractures and waddle gait from unreduced dislocations of the hip are testimonies to his skill. There are the occasional urethral fistula and clitoral cyst complicating circumcision in male infants and genital mutilation in female children respectively.

Anesthesia

The rural surgeon does not have the luxury of a trained anesthetist or a nurse anesthetist, so he combines both functions using auxiliary nurses to assist in monitoring the patient.

The methods of anaesthesia available are local infiltration, spinal anaesthesia and ketamine anaesthesia¹¹⁻¹⁵.

Ketamine anaesthesia was just being introduced into clinical practice in the early eighties and it has made paediatric surgery possible in the rural area even on outpatient basis. It is useful and safe in emergency surgery like Caesarean section and laparotomy for peritoneal sepsis, ruptured ectopic pregnancy and intestinal obstruction. Recovery hallucination is minimized when premedication consists of diazepam and chlorpromazine.

Spinal anaesthesia using 5% plain xylocaine after lumbar puncture with 23G needle has been used successfully in the outpatient management of external abdominal hernias. It facilitates the teaching of junior medical officers in the performance of groin herniorrhaphy.

The low incidence of spinal headache (1.1% of spinals administered) was due to the use of a fine gauge (23G) needle for lumbar puncture and the rarity of acute urinary retention especially in the elderly was due to early ambulation and the use of short-acting anesthetic agent (5% plain xylocaine).

Table 1 shows the operations performed in the 22-year period August 1983 to August 2005. It reflects closely the pattern of surgical diseases seen excluding minor trauma, snakebite and minor surgical problems like superficial abscesses and lacerations. Until recently, trauma has not constituted a major clinical problem. However, with the advent of democracy and the concomitant increase in purchasing power of the people, coupled with the establishment of a satellite campus of the Ibadan Polytechnic in Eruwa and a College of Education in neighbouring town, Lanlate, there has been an upsurge in trauma cases of varying severity.

Although poisonous snakebite is quite common, its complications – the most common being hemorrhage - are not of surgical importance.

The referral rate of patients – mostly to the University College Hospital, UCH, Ibadan and other specialists in Ibadan was 1 in 1500 patients overall and 1 in 1000 (0.1%) surgical patients.

Recent reviews of rural surgical practices that have been in existence for over twenty years in Nigeria have shown that close to ninety per cent of surgical patients could be taken care of by a general surgeon working in a secondary level institution, using appropriate and scientifically sound technology and assisted by few nurses, several auxiliary nurses and paramedical professionals.¹⁶⁻²⁰

The referred cases included patients with cataracts and pterygia, a patient with complete heart block who had a permanent pace maker successfully inserted in UCH in 1984 but died in Eruwa at the District Hospital of severe enteritis some months later. I removed the pacemaker postmortem and returned it to my teacher, Prof. S A Adebajo, the cardiac surgeon, a few patients with subdural hematoma for burr hole evacuation; in the early years, patients with giant goitres that might need endotracheal intubation and patients with carcinoma of the uterine cervix or post-mastectomy for cancer needing radiotherapy.

As the number of patients with eye problems requiring the ophthalmologist's attention increased, my chief, Dr B G K Ajayi started a rural outreach of his practice based in our clinic in October 2001. He comes monthly (usually the last Thursday) without fail and the demand is on the increase. To date, he has seen a total of 564 patients. He has operated four times in our Clinic.

One of the dramatic cases referred was that of a young lady involved in a road traffic accident on the night of Friday, 24th January 2002. She had a plank of wood transfixed into her chest. We stabilized her overnight but due to the menace of the armed robbers we delayed her transfer to Ibadan till Saturday morning. But, UCH was on strike. Eventually, Prof O A Adebo, the cardiothoracic surgeon, and I started the operation on her at a private hospital in Ibadan at 2 00pm. This was 18hours after injury.

Unfortunately, the patient died 12hours after surgery due to severe stress and delay in intervening. Were the mobile telephony available at that time and the night marauders were not a factor, she might have survived.

Gastrointestinal surgery.

Groin hernias

External abdominal hernias constitute the most common surgical problem in rural Ibarapa district. Repair of inguinal hernia forms 47% of all operations performed.¹²⁻¹⁵ In a recent review of our large series, we found that:

- Outpatient repair of both unilateral and bilateral hernia is safe even in a rural population where transportation is expensive and unreliable.
- Spinal and ketamine anesthesia on outpatient basis is safe.
- Early inguinal herniorrhaphy is an effective preventive measure against obstruction and strangulation as only 4.5% of patients presented with obstruction or strangulation.

Gastrojejunostomy

Chronic duodenal ulcer is common in Western Nigeria and gastric outlet obstruction is its most frequent complication²⁶. Many patients with this complication present late with fluid and electrolyte imbalance and features of malnutrition. The correction of these deficiencies before and after operation presents a challenge to the surgeon working in a rural institution owing to non-availability of appropriate intravenous fluids. This problem was tackled in the following manner.

During the performance of gastrojejunostomy (retrocolic, isoperistaltic, posterior) two 18Fr nasogastric tubes were inserted through a gastrostomy: one across the anastomosis and 30cm down the efferent jejunum, the other to drain the stomach.

In the postoperative period, all gastric drainage was fed into the jejunum whenever 500ml fluid had drained from the stomach. Some 10 – 15 litres could be so cycled in five days. By the sixth day after operation the gastrojejunostomy had opened up and the patient could tolerate oral fluids.

This method has completely conserved all the secretions that would otherwise be lost by the conventional management of these patients²⁷.

Urological surgery

Suprapubic Cystostomy

While performing a suprapubic punch cystostomy with a two-way Foley catheter and utilizing the method I had described in 1983 while I was a resident in Urology unit²³, I could not withdraw the cannula over the stumps of the ligated and excised valve and irrigation flanges. I waited for two weeks to recover the cannula when changing the catheter.

To resolve the problem, I sawed off a 0.5cm wide strip from the whole length of the cannula thereby forming an incomplete sheath for the trocar. In this way the cannula was retrieved by sliding the stem of the catheter through the slit. This method is suitable for most of the catheters (Malecot, Depezzler) used for suprapubic punch cystostomy. It is akin to the Cystofix* kit where the non-reusable cannula is bivalved to remove it²⁴

Prostatectomy

Urinary bladder outlet obstruction due to benign and malignant prostatic enlargement is common in rural Nigeria.

The major complication and the cause of mortality in prostatectomy is hemorrhage. At the twilight of my training in UCH, I had picked up the use of Malament stitch (a removable purse-string suture at the bladder neck) in the 'Latunde Odeku Medical Library and employed it once in an emergency prostatectomy for hematuria. In a preliminary report on the first eighteen prostatectomies, the use of Malament stitch produced good results^{25,26}. No patient required blood transfusion and there was no mortality.

Circumcision

I was trained to perform circumcision in infants using the bone cutter and excising the prepuce flush with it. This method was often accompanied by hemorrhage from the dorsal vessels requiring ligatures when the cutter was removed and the skin retracted to expose the glans.

However, excision of the prepuce 0.5cm distal to the bone cutter prevents opening up of the vessels at the level of the constriction produced by the bone cutter²⁷

Malignant Diseases

Infective and other communicable diseases still constitute the major health problems of rural Nigerians. However, neoplastic diseases, both benign and malignant are not uncommon. The painless feature of the disease process coupled with low literacy rate and low level of health awareness make late presentation in hospital the rule.

We have been keeping an up-to-date cancer register since the inception of the Clinic in 1986. We are affiliated to the National Headquarters of Cancer Registries in Ibadan when it was chaired by the late Professor Emeritus T F Solanke.

To date we have registered 1 291 cases of which 775(60%) have histopathologic confirmation. In the same period 97 778 new patients have been seen in the clinic giving a hospital-based incidence of 13.2/1000 patients. The recently established histopathology service has increased the confirmation rate of malignant diseases seen in our practice.

Primary liver carcinoma and prostate cancer are the most common malignancies in the adult male while carcinoma of the breast and cervix are the most common in women.

Standard management of cancer patients in a rural practice is beset by the problems of poverty, late presentation, and the reluctance of the patients to accept ablative surgery. The best that is achievable is management that enhances the quality of life, for example, toilet mastectomy for fungating tumors and segmental colectomy for obstructing carcinoma.

However, it is important to stress that every effort should be made to confirm the diagnosis as a few cases have turned out to be of infective diseases like tuberculosis, amebiasis, schistosomiasis and histoplasmosis²⁸.

I wish to acknowledge the assistance of pharmacist Jare Atanda in Eruwa in making the necessary drugs available at affordable costs to the patients. Although he is a 'son of the soil' he has not checked out to the city in search of the Golden Fleece.

Gynecological surgery

Ectopic pregnancy and high twinning rate

In the medical world, Ibarapa district is well known for its primary health care system, which predated the Alma Ata Declaration of 1978 by 15 years, and for its high twinning rate of 45/1000 live births, 96.5% of the twins being of the dizygotic type²⁹.

It is expected that multiple ovulation will be a predisposing factor to the occurrence of ectopic pregnancy as there might be a delay in the transport of the second zygote through the Fallopian tube in cases where the two eggs are released from one ovary. But, in a study of our deliveries and cases of ruptured ectopic pregnancy from 1986 to 1999, we have shown that multiple ovulation is not a predisposing factor in the presence of a low incidence of pelvic inflammatory disease. Pelvic inflammatory disease is not a common feature of clinical practice in Ibarapa district.^{30,31}

Vesicovaginal fistula

The last time I was on a gynecological ward was as a House Officer in late 1975. However, in 1985 a senior colleague, an obstetrician and gynecologist, also an alumnus of Ibadan, and my cousin-in-law, the late Dr Soji Fayanjuola, joined me at the District Hospital.

During his one-year stay before he was transferred to Oyo, he put me through pelvic floor surgery. This has enabled me to repair 38 vesicovaginal fistulas and perform 44 vaginal hysterectomies. I have found that contrary to the standard teaching of repairing both the bladder and vagina, repair of the vaginal defect alone is sufficient to cure the fistula. We have rotated a local vaginal flap to deal with the wide defect and transplanted the ureter in a few more complicated cases.

Jaw tumours

In recent years, the decay in tertiary care in our country occasioned by the long military rule has caused some patients with giant jaw tumours to drift to us for help. We have performed three mandibulectomies and five maxillectomies for giant adamantinomas and fibrous dysplasia.

Performing a preliminary tracheostomy on day 1 under ketamine anaesthesia solved the problem of aspiration during surgery in these patients. On the following day, the mandibulectomy (or maxillectomy) was carried out with the oropharynx and hypopharynx packed with gauze roll while the patient was breathing through the tracheostomy. The patient was weaned off the tracheostomy 48 hours after surgery.

SURGICAL RESEARCH IN THE RURAL SETTING.

The Alma Ata report³² on primary health care emphasized research and evaluation by those providing the service, those using them and those responsible for managerial and technical control at various levels of the health system.

While the unavailability of modern technology has limited the scope of research, it is still possible to conduct appropriate, "low-tech," and relevant research that is subject to excellent study design, proper controls, and scientifically valid interpretations.³³ As a matter of fact, over the last 50 years many more major advances have been made in medicine by simple observation than by all the current molecular techniques put together.³⁴

It is easy for the rural surgeon to decay while offering routine service if he does not subject himself to regular auditing by way of publishing his experiences.

Regular reviews and auditing of the surgical problems encountered and the results of tested solutions have produced publications that document the incidence and pattern of diseases, the modifications in the management of patients occasioned by their poverty, ignorance, costly and inadequate transportation and the activities of the ubiquitous traditional healers.

Research has been carried out in an environment devoid of the "publish or perish" syndrome that prevails in the ivory towers.

THE RURAL SURGICAL TEAM.

'A tree can not make a forest' so the adage goes and so is the team that has been operating in Eruwa in the last twenty-two years.

I wish to appreciate all the nurses, laboratory technologists, ward orderlies and artisans with whom I worked at the District Hospital, Eruwa from 1983 to 1986. We showed it was possible to make the pyramidal health structure work in a rural setting in the public sector.

At Awojobi Clinic Eruwa, I have been working with four gentlemen for periods of 14 to 22 years.

Mr Adeleye Ojo is a plumber, driver and purchasing officer. I met him at the District Hospital and he followed me into the private practice in 1987. He has become a brother to me.

Mr A Oyesomi is a nurse who joined us in 1988. Since 1998 when the last career medical officer left, he has been my able assistant in the care of the patients. He is at present holding fort in the clinic while this lecture goes on.

Mr M Adepoju, is the assistant to Mrs A Awojobi at the Xray Department and supervises the performance of the junior staff.

Mr A Olagbenro is our records officer, the electrician and the painter as he has very steady hands when painting the interface between two colours. He compiles our monthly statistics accurately and files the records correctly such that follow-up of patients is quite thorough.

Mr Gbenga Sekoni, aka IJEBU, is a mechanic, electrician, welder and plumber all rolled into one. He has his workshop in town and has been the technical hands in the fabrication of the bicycle centrifuge, KEKE ERUWA, all our generators and water pumps.

To these gentlemen and several others I wish to express my sincere gratitude for their support and spirit of teamwork.

A question that I am often asked is: 'Do you go on leave?' The answer is 'Yes'. When I do, Dr S Ogunsina, the last career medical officer who left in 1998 after a two-year stint, has come back on five occasions lasting two weeks to one month to provide primary care surgery. He had performed excellently well on each occasion. To him I am also grateful.

6. THE FINANCIAL TRAVAILS OF RURAL SURGERY

Finance has always been the bone of contention in any practice particularly medical practice in the rural area where the populace is relatively poor. For the practice to be successful, the services provided must not only be accessible and acceptable but also affordable. The adoption of appropriate low cost but effective technology had significantly reduced our capital investment.

In our Clinic, there is no employer or employee. We owe allegiance to our patients who receive the best we can offer and in return sustain us within their resources. Ours is a cooperative of professionals and non-professionals offering service in the health sector of the economy and in so doing earn our means of livelihood.

Everybody is placed on a salary agreed by all. Every month a meeting of all workers is convened during which all financial returns of the month are tendered and decisions taken on payment of salaries and what to do with profit or loss.

In this way, a sense of belonging is generated in all workers and there can be no labour unrest, as the financial standing of the practice is known to all. In a private institution it will form a solid foundation for continuity when the pioneers must eventually take their leave.³⁵

7. SOCIAL TRAVAILS OF THE RURAL SURGEON.

Residency training in the UCH of the 70's and 80's was a very serious business. Our teachers were often the first to be in the hospital at 7.00am and the last to leave at 7.00pm. Consultants like Prof E O Nkposong would buy moinmoin during clinic and operating sessions so that there was no disruption of activity. There was nothing like going to pick the children at school at 2.00pm. No excuses were allowed for not getting the results of investigations on time for the next ward round; definitely not in the cardiothoracic unit, where before and after inserting a chest tube, a chest radiograph was mandatory no matter the time of day. It was a hectic schedule in the Intensive Care Unit on Tuesdays when the cardiac surgeons operated on elective cases.

It was in the CTSU I started my residency in August 1977. While running to get chest x-rays done quickly, I met a beautiful young radiographer who very soon taught me how to

position and calibrate the mobile x-ray machine, expose the film and develop the film. Miss Atinuke Makanjuola naturally became my wife in 1978 and she has stood by me since then. In August 1980, she resigned her level 9 job at the UCH to stay at home and look after little Yombo and myself so I could face the training squarely. By today's standard, it is equivalent to leaving a N100 000,00 per month job.

On arrival in Eruwa in 1983, her colleagues persuaded her to take up the job again as the workload might not be heavy and our son could play around in the hospital.

Educating our boys (Ayodele was born in 1985) was going to be another travail in the rural setting.

We resolved to teach them at home until they were five years old to enter the public school.³⁶ It was a status symbol to send your child to the only private nursery/primary school in town but we were determined that our children would grow with those of the rural farmers. At the public secondary school in Eruwa, we got teachers in the science subjects to supplement our efforts. We created a science laboratory at home and used the clinic's laboratory where necessary.

Two decades after, Yombo fixes our x-ray and ultrasound machines as a budding electrical/electronics engineer and Ayodele assists in the operating room and produces the histopathology slides whenever he is on holiday from the medical school at Ile-Ife.

This has been our pragmatic solution to the social travail of rural surgery in Nigeria.

TO MY TEACHERS AND COLLEAGUES WITH GRATITUDE.

Many of my teachers and colleagues have continued to provide moral, financial, material and psychological support to us since 1983.

Professor E A Elebute, in the maiden Faculty of Surgery Lecture of the National Postgraduate Medical College of Nigeria in February 1988 wrote:

"We must work out through research, ways of assessing and thereby improving the quality of care that we give our patients. There are three approaches to the problem of quality of care. The most basic is paying attention to structural aspects such as financial resources, facilities (e.g. water and electricity), equipment

and staff. I think most of Awojobi's work in Eruwa is in this direction and he has been able to fashion equipment from locally available materials and device treatment manoeuvres suited to the structural background of his working environment."³⁷

The late Professor Emeritus T F Solanke visited us twice and on one occasion wrote in our visitors' book: *'This is the setting for teaching Primary Care Surgery in Nigeria.'*

In 1996, in far away Zimbabwe, at the inaugural meeting of the Pan African Association of Surgeons, his presidential address was based on our rural practice. This was later published in the *South African Journal of Surgery*.³⁸

The late Professor Olikoye Ransome-Kuti, former Federal Minister of Health, visited in August 2000 and after an extensive tour of the clinic remarked:

*'Highly privileged to visit this hospital, an example of commitment, concern for fellow beings, innovation and imagination. I like the way he admits relations to the theatre to watch operations on their sick relatives. I like the way he fabricates every thing and saves everything. I have visited an exemplary phenomenon and honoured to be here. Can this be replicated? It must take a particular kind of person!!'*³⁹

Emeritus Professor T O Ogunlesi, the first director of the Ibarapa Community Health Programme visited this July. He was quite happy that a product of the programme had settled in the district for 22 years to keep the spirit of the programme alive. He wished such a programme could be established in Ogun State.

Other distinguished visitors included Papa (Dr) S A Ogunlusi, Mr and Mrs S O Itayemi, FRCS, Prof S A Adebajo, Prof I A Grillo, Prof O A Adebo (in whose unit I started my residency training), Mr and Mrs O O Akute, FRCS, Prof and Mrs E O Nkposong, Prof and Dr (Mrs) J A Adeleye, Prof V A Nottidge, Prof M T Shokunbi, (former Deputy Provost and Provost respectively of the College of Medicine, Ibadan), Prof Mrs O A Soyannwo (former Dean, Ibadan Faculty of Clinical Sciences who initiated the posting of clinical students to our clinic), Prof Lucio Luzzatto, the foremost Italian hematologist and my teacher, Dr and Dr(Mrs) J K Ladipo (as Residents and Heads of Departments of Surgery and General Outpatient Department of UCH) and Prof A Ilesanmi (the current CMD of UCH, Ibadan).

From medical school days in 1970, my very good friends and classmates, Dr Tayo Apampa, Prof Basil Ogunsanwo, Dr Segun Olutola and Prof Gbemiro Sodeinde have stood by me and have always been sources of inspiration and support. To them I am grateful.

At the transition of modern day Oduduwa, the Right Honourable, Papa Obafemi Awolowo, SAN, GCFR, my teacher, the late Prof Emeritus T F Solanke wrote in the condolence register: *'Give unto Caesar that which is Caesar's when Caesar is alive'* and when the Yoruba feels good he sings; *'Talo sope ao ni baba, kai ani baba'* Surely I have a mentor and a role model. He is well known to all of us here but I need to say a few things about him.

He was a classmate of my eldest brother, Oluyinka, at the famous CMS Grammar School, Lagos in the fifties and they showed me the way like other four generations of the Awojobis to that good school. I went in after my brother, 'Busola, who is present here today.

He was my first clinical teacher on ward E1 of the UCH, Ibadan in 1972 and the foundation he laid earned me my only distinction at the undergraduate level in his subject, surgery.

Not finished with me yet, he was instrumental to the modified pile suture I devised to suit the outpatient and by extension the rural patient. I presented the results of the project before the 22nd annual conference of the West African College of Surgeons in Ibadan in 1982 again with him paving the way, as I was not a member of the College. He taught me to be pragmatic and relevant in my clinical practice.

Although, he could not persuade me to stay back in UCH from my rural crusade in 1983, he got me appointed as an Associate Lecturer in the Department of Surgery and initiated the rotation of UCH residents in Surgery and Family Medicine to Eruwa.

He has sponsored my attendance at several surgical conferences at home and abroad. I presented a paper on his behalf at a meeting of the Nigerian chapter of the International College of Surgeons in Enugu. We have become part of his family and he part of ours because I have lost count of the times he has visited us at Eruwa and his presence at many of our family

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SHORT CITATION

Our guest lecturer was born in the early fifties. He attended Methodist School Oshodi, Lagos for his primary school education. He went to the CMS Grammar School, Lagos for his secondary school education.

His professional training was at the University College Hospital, UCH, Ibadan where he graduated in 1975 with distinction in surgery. He was a university scholar after the first MB, BS university examinations. He also earned the prestigious Adeola Odutola prize for the best final year medical student.

After his one-year housemanship, which incidentally was at the UCH, Ibadan, he went for the National Youth Service one year, this time not in Ibadan, but in Benue State. But after this he gravitated back to UCH and commenced postgraduate training in surgery in 1977.

As a fellow of the National Postgraduate Medical College of Nigeria since 1983, he has practised what he knows best – surgery. He was a consultant surgeon at the District Hospital Eruwa for three years after which he set up his practice. I hope our guest lecturer would not mind if he tells us why he stopped being a consultant surgeon in the government service.

Since 1986 until now he has been working at Awojobi Clinic Eruwa. A September 2005 issue of the journal *Africa Health* described him as “the architect, builder, surgeon, doctor, maintenance man, proprietor, and Chief Dreamer of the Awojobi Clinic Eruwa in rural South West Nigeria.’

The guest lecturer of today has been honoured with

- the Oyo State Merit Award for rural medical practice,
- National Agency for Science and Engineering Infrastructure Prize for the fabrication of hospital still,
- College of Medicine, University of Ibadan, Award for contribution to sustenance of Ibarapa Community Health Project,
- Young Men Christian Association (YMCA) Nigeria Award for medical coverage during annual camping at Eruwa.
- Pan-African Liberation International Project special award as a Defender of the Less Privileged
- Elected Member of The New York Academy of Sciences
- British Council Travel Fellowship
- One of two Nigerians listed in the World Medical Association’s publication ‘*Caring Physicians of the World*’.
- HRH Eleruwa of Eruwa and the community offered him the chieftaincy title of *Baasegun of Eruwa* in 2000. We are waiting for the iwuye ceremony!!

He has attended many conferences at home and abroad during which he presented papers. Our guest lecturer has over 50 publications to his credit.

Distinguished ladies and gentlemen, please let us welcome our guest lecturer for today, Dr Oluyombo Adetilewa Awojobi.

- read by Dr L O A Thanni.