

**OPEN HEART SURGERY IN NIGERIA
FROM BEGINNING TO DATE BY ISAAC ADETAYO GRILLO**

Comments by

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PREPARATION IS VERY IMPORTANT

This cardiothoracic surgical vignette from Professor Adetayo Grillo will be of immense interest to readers of your journal. I thank the Professor for telling us his story from an original and personal perspective. I hope other pioneers with similar experience will contribute their stories to your journal for our benefit.

I remember that the Cardiothoracic Unit of the UCH Ibadan ably led by Professor Grillo in his heyday presented their experience with open heart surgery at the Surgical Grand Round of our department in Paul Hendrickse Lecture Theatre in December 1978. Their story, quite rightly, was enthusiastically hailed as a truly momentous surgical milestone and the result of years of concentrated hard work and intense preparation by all those mentioned by Professor Grillo.

Before he joined in Ibadan, Dr. Adebajo on a visit to Nigeria from the United States had told the Nigerian of the feasibility of performing open heart surgery in Nigeria by Nigerian surgeons. After he took up his post in Ibadan, Adebajo and Dr. Ayodele Falase of Department of Medicine carried out the first successful implantation of a permanent transvenous cardiac pacemaker in 1976 at UCH Ibadan. That procedure is now routinely performed at UCH Ibadan. Later that year, Grillo obtained the Fulbright Hayes Scholarship which enabled him to study cardiovascular diseases in the United States. He went to the Institute of Medical Sciences in San Francisco, California to work from June to September 1977, on the growing frontiers of open heart surgery.

The Department of Surgery had facilitated the efforts of the cardiothoracic unit by helping to appoint two more lecturer-consultants to that unit and by providing the facilities Grillo described during my headship and afterwards.

At the time of their remarkable surgical feat, the cardiothoracic unit, like our then Orthopaedics and Trauma Unit each had 4 academics-cum-consultant staff and were on the brink of evolving into sub-departments preparatory to becoming full departments. Then, the

virus of the economic doom and gloom described in Grillo's story struck Nigeria, leading to the dispersal of UI/UCH doctors including myself to various putative greener pastures.

It is worthy of note that all those listed by Professor Grillo (surgeons, physicians, anaesthetists, laboratory technologists and nursing staff) escaped to the Gulf for their economic survival. The only exception was Wole Adebo who instead disappeared from UCH Ibadan to the unknown and from the ken of his colleagues as if he never existed.

Another interesting feature of Grillo's story is that the surgeons Adebo and Brimmo, the cardiologist, Falase and the anaesthetist Famewo were all classmates in Ibadan Medical School where they graduated with the MB BS in 1968.

Finally, I join Professor Grillo in wishing Professor Victor Adegboye, the current Head of Surgery and his team success in their on-going bid to sustain Open Heart Surgery in UCH, Ibadan.

Now they know where and how it all started and when the effort once wobbled.

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OPEN HEART SURGERY IN NIGERIA: FROM BEGINNING TO DATE

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Nigeria is a very, very young nation as nationhood goes, but people living in today's geographical Nigeria come from people of different ancient origins. Unfortunately, present day Nigerians are oblivious mostly of their history. How many of the Nigerian readers of this article know who Herbert Macaulay was and his relationship to Samuel Ajayi Crowther? The same goes for the history of open-heart surgery in Nigeria, a history of less than forty years. The purpose of this communication is to apprise present day Nigerian healthcare givers from professors in the schools of medicine, dentistry, pharmacy, nursing and midwifery, medical laboratory sciences, physiotherapy, occupational therapy, etc. to students in these disciplines of the very short history of open-heart surgery in Nigeria.

History is "his story" or "her story" but history is preferred to her story. History can be told or written by participants or both observers (witnesses) or hearers of the events. When participants of the events narrate the events, you better believe them or open them widely to public ridicule for falsifying events. The present author stands corrected or ridiculed if there is any falsification in the narration of these events.

Two Nigerian cardiothoracic surgeons (the first and second ever trained Nigerians in Cardiothoracic Surgery) who trained almost simultaneously in the same country (United States of America), first in General Surgery (only two hundred and fifty miles apart - Chicago, Illinois and St. Louis, Missouri), followed by training in Cardiothoracic Surgery (almost two thousand miles apart - Illinois and California) must have independently had the same vision or ambition to see open-heart surgery initiated in Nigeria in their lifetime, and they did. Fabian Udekwu (of blessed memory) and Isaac Grillo, author of this article, are these two Nigerians. Both, history will ever show, pioneered open-heart surgery in Nigeria. Professor Udekwu and his team with the aid of members of the International College of Surgeons claimed the credit of the first group of surgeons to put a Nigerian patient on the cardiopulmonary by-pass pump in Nigeria¹. Isaac Grillo and his group of solely Nigerian cardiothoracic

surgeons, anesthesiologists, pump technician and theatre (operating room) nurses. (Table 1) were the first solely indigenous Nigerian group team members to perform open-heart surgery in Nigeria (Ibadan) without the assistance or presence of a non-Nigerian doctor or nurse or pump technician.

When the Enugu group of Professor Fabian Udekwu with the assistance of Professor Yakoub (Egyptian-British citizen) put the first Nigerian patient on the cardiopulmonary by-pass pump in 1972, the Enugu group thought that the patient had aortico-pulmonary window, a pathology that rightly deserved open-heart surgery technique, but later found out (after the patient was on the pump) that the patient had only patent ductus arteriosus (PDA). Isaac Grillo was urged by the group of Nigerian surgeons in Ibadan at that time (Ibadan had no non-Nigerian surgical staff at the time) to perform all by himself open-heart surgery in Ibadan!! He was alone, the only cardiothoracic surgeon in Ibadan (and in Nigeria) during and shortly after the Nigeria war of Unity (otherwise known as the Nigeria civil war or the war of Ojukwu). He, Isaac Grillo, worked alone for good seven years before he was joined by Samuel Adetola Adebajo, now retired Professor of Surgery living in the United States of America. He (Isaac Grillo) even led a group of other University College Hospital surgeons to the war front as Field LIEUTENANT COLONEL!

The Yorubas in Western Nigeria (the region in which Ibadan is located) have a proverb that goes thus: *'Eniyan kan ki i wipe 'awa de'* which means "One man does not say that we have arrived". Ibadan surgeons refused the plea of Isaac Grillo to invite his mentors in the United States of America to help him perform open heart surgery.

Here comes in the story of the "PATRON" of OPEN HEART SURGERY in Ibadan - IVAN MAY. Dr. Ivan A. May trained Isaac Grillo and together both of them and two others published the first ever successful case of double aortobronchopulmonary fistula in the same patient (the first of only three such surviving patients

in the world up to 2003)^{2,3}. Ivan May planned in 1973 to bring a team consisting of a pump technician, an operating room (theatre) scrub nurse, with a cardiopulmonary by-pass pump and all its accessories, including oxygenators and all necessary cardiothoracic surgical instruments all totaling more than twenty-five thousand dollars of those days (about ninety million naira of today) to Ibadan, Nigeria and donate all the equipment to the University of Ibadan and University College Hospital, Ibadan, after helping Isaac Grillo perform at least six open-heart procedures.

Dr. Ivan May and his team were barred from bringing the equipment unless he declared them as educational material. To boot, the academic powers in the University of Ibadan, Faculty of Medicine at that time barred Isaac Grillo from bringing the team from the United States to Ibadan, insisting that Isaac Grillo should perform the open-heart surgical procedures alone without the assistance or presence of any foreign help! Enugu was more forward looking than Ibadan; hence Enugu claimed the start of open-heart surgery in Nigeria.

Isaac Grillo persisted. He convinced Ivan May to help train a Nigerian theatre (operating room) nurse and a Nigerian cardiopulmonary by-pass pump technician for him. Ivan May agreed. Ivan May sought a complete total scholarship for the Nigerian nurse and the Nigerian pump technician; a scholarship to include cost of training for three months, board and room for three months and air fare ticket from Ibadan, Nigeria, to Oakland, California, USA. The Hospital Administrator, in Oakland, California (Merritt Hospital, the same hospital in which Isaac Grillo was trained) agreed to all the terms of the scholarship but the air fare tickets. Mr. S. Osanyintuyi, the chief laboratory technologist in the Department of Surgery of the University of Ibadan and University College Hospital, Ibadan at that time and Mrs. Omotosho, one of the two best scrub nurses at the University College Hospital, Ibadan, at that time were chosen to go to the United States of America for the training. Both left Ibadan for the United States, flying out of Lagos on the very day in 1974 that Isaac Grillo lost his beloved sister, a Registered Nurse Tutor, Miss Priscilla Adetoun Yeside Grillo, to massive pulmonary embolism following a right cerebrovascular haemorrhage; the emboli having originated from blood clots in the left popliteal artery of the left paralyzed lower limb. She died in U.C.H. This sister could have been helped if there were team members to do open heart surgery in Ibadan. Isaac Grillo immediately wrote Samuel Adebajo to hurry home from the United States to join him so that other patients could be helped!!

This started the beginning of training of members of a team of cardiothoracic surgeons, nurses, technicians, etc. in Ibadan. Mr. Osanyintuyi and Mrs. Omotosho returned to Nigeria late in 1974. Dr. Samuel Adebajo joined Isaac Grillo in 1975, seven years after Isaac Grillo had single-handedly run the Cardiothoracic Surgical Unit (CTSU) of the Department of Surgery in Ibadan. Both were later joined by both Doctors Olu Oshinowo and Wole Adebajo. The team work was shifted to the Department of Veterinary Medicine and Surgery on the University of Ibadan campus, thanks to the equipment (cardiopulmonary by-pass pump, oxygenators, and surgical instruments) procured through the efforts of the then Head of Department, Professor Adelola Adedoye. Biode Chemical donated substantial amount of money for the purchase of some of the equipment. Dr. Layo Idowu, Veterinary Surgeon in the Faculty of Veterinary Medicine and Surgery of the University of Ibadan worked with the four consultants of the CTSU of the Department of Surgery in the operations of six dogs⁴ before the scene was shifted to the operating room (theatre) of the University College Hospital (UCH), Ibadan.

Dr. Isaac Grillo led the team to perform the operation on the first patient. Five more patients were operated upon (5). At the end of the sixth case, the surgeons began to experience battle fatigue and the supporting academic and hospital staff became weary of the high cost of every operation and post-operative care of the patients in terms of money and personnel and time spent on every patient at a time that all costs to the patients were borne by the University College

Table 1: List of team members who performed the first series of open-heart surgical procedures in Ibadan in 1978

Surgeons

1. Isaac Adetayo Grillo, MD, FACS
2. Samuel Adetola Adebajo, MD, FACS
3. Olu. Osinowo, MD, FRCS
4. Wole Adebajo, MB, BS, FACS

Anaesthesiologists

5. Dr. O. Akinyemi
6. Dr. C.E. Famewo (of blessed memory)

Cardiologist

7. Dr. O. Falase

Cardiopulmonary Pump Technician

8. Mr. S.O. Osanyintuyi

Operating Room (Theatre) Scrub Nurse

9. Mrs. Omotosho

Hospital (UCH), Ibadan. The programme died a natural death of malnutrition, non-support and fatigue. Table 2 lists the number and diagnoses of patients operated upon and their outcomes.

The country went into a depression after an oil boom that was mismanaged leading to an economic gloom. Bank interest rates on borrowed money for building of personal homes went from six to twenty-three percent (6% to 23% compound interest) at the Federal Mortgage Bank. This trend drove the surgeons as well as other doctors (and academicians) out of the country. Doctors Isaac Grillo and Samuel Adebajo left for Saudi Arabia, later to be joined in Saudi Arabia by Dr. Olu Osinowo. All three later became Professors of Surgery; Drs Grillo and Osinowo in Ibadan and Dr. Adebajo in Lagos.

Dr. Wole Adebo also became Professor and Chair of Surgery in Ibadan. Before he left for Saudi Arabia, Isaac Grillo as Professor and Chair of Department of Surgery in Ibadan had helped to get Dr. A.I. Brimmo, a Board Certified Surgeon trained in General Surgery in the same hospital as Dr. Isaac Grillo in the United States (Homer G. Phillips Hospital, in St. Louis, Missouri) and also Board Certified in Thoracic

Surgery to join the Department of Surgery in Ibadan. Dr. Bitto and Dr. Adegboye had also been trained in Cardiothoracic Surgery in Ibadan. Dr. Bitto left for Zaria and Dr. Adegboye remained in Ibadan to work hard enough as to become the present Professor of Cardiothoracic Surgery in Ibadan and Chair of the Department of Surgery.

“Tell the truth with love”⁶. This was Paul’s exhortation to the Church in Ephesus in present day Turkey. In these days of global terrorism one needs to arm oneself as depicted in Figure 2 not only for the skirmishes that we can see, but for the spiritual warfare that has wrecked and is wrecking the world including our country of Nigeria. The truth should have been told with emphasis on the beginnings of open-heart surgery in Nigeria with emphasis on the early activities of the CTSU in Ibadan especially at the time that the team of international surgeons (including our own product in Ibadan, Dr. Lire Idowu) came to Ibadan in 2005 and also visited Lagos, Zaria and Enugu to perform open-heart surgical procedures. It is important to acknowledge the past in order to appreciate the present and trust the future into the hands of the Master of the Universe for greater success for the coming generation for the benefit of our patients.

PATHOLOGY	PROCEDURE	SURGEON	OUTCOME
Anomalous Venous Return that was mistaken for Atrial Septal Defect	Incomplete	I.A. Grillo	Death on the table due to Disseminated Intravascular Clotting (DIC)
Pulmonary Stenosis	Dilation of the Pulmonary Valve	S.A. Adebajo	Long Term Survival
Atrial Septal Defect	Closure of Atrial Septal Defect	O. Osinowo	Long Term Survival
Tetralogy of Fallot	Total Repair of Tetralogy of Fallot	O. Adebo	Death on the ward as patient was walking on the ward a month post op. Autopsy showed VSD Dacron Patch blow-out due to infection
Pulmonary Stenosis	Total excision of the pulmonary valve	I.A. Grillo	Long term survival
Left ventricular aneurysm	Excision of the left ventricular aneurysm and repair of the left ventricle	S.A. Adebajo	Death on the table due to insufficient left ventricular muscle wall remnant to support circulation. There was no intra-aortic balloon to use for temporary support of circulation.

Table 2: First six cases of open heart surgical procedures performed in UCH, Ibadan and their outcomes in 1978

“When the high heart we magnify
And the sure vision celebrate
And worship (or rather acknowledge)
Greatness passing by, ourselves are great.”⁽⁷⁾

We should worship God, not greatness. Well done, Departments of Surgery of the Lagos State University, University of Ibadan, University of Zaria and University of Nigeria and their respective Teaching Hospitals in which the most recent open-heart surgical procedures were performed jointly by local teams and visiting American surgeons in 2005. More grease to your elbow, Professor Victor A. Adegboye and your team in Ibadan as you plan to resuscitate the work begun by your mentors in the early seventies of the twentieth century. May God continue to bless Nigeria and honest Nigerians.

ACKNOWLEDGEMENT

I am grateful to all the team members mentioned in this article in the performance of the first series of open-heart surgery at the University College Hospital, Ibadan. Surgeons of U.C.H. Ibadan at that time should be hailed for cooperating with the surgeons of the Cardiothoracic Surgical Unit (CTSU) in suspending all dirty surgical cases during the days that the open-heart surgical procedures were performed because we had at the time only a post-operative room and no intensive care unit as UCH has now. The members of the Administration Department of the UCH then, from Mr. Cole down, should also be recognized for giving us the needed support. Dr. Layo Idowu, Veterinary Surgeon of the Department (now Faculty) of Veterinary Medicine at the time is also here recognized for supplying the six dogs that were used and sacrificed during the experiments on open-heart surgical procedures in dogs that preceded the operations on the patients listed in this article.

REFERENCES

1. **Anyanwu C.H.**, Ihenacho H.N.C., Okoroma .E.O., Nwafo D.C., Umeh B.U., Okechukwu C.C., Udekwu F.A. Initial experience with open-heart surgery in Nigeria *Cardiologie Tropicale, Tropical Cardiology* 1982; 8:123
2. **Grillo I.A.**, Kimball K.G., Hardy L.K., and May J.A.: Recurrent Aortopulmonary Fistula: Case Report. *The Annals of Thoracic Surgery* 1968; 5(5): 459-463
3. **Piciche M.**, De Paulis R., Fabbri A. and Chiariello L. Postoperative aortic fistulas into the airways: Etiology, pathogenesis, presentation, diagnosis, and management. *Annals of Thoracic Surgery* 2003;75(6): 1998-2006
4. **Adebonojo S.A.**, Grillo I.A. Osinowo O. *et al* Open pulmonary valvotomy Report of the first successful open-heart surgery at the University College Hospital, Ibadan, Nigeria. *Journal of the National Medical Association* 1980; 72(12): 1185-1188
5. **Adebonojo S.A.**, Grillo I. A., Osinowo O. *et al* Initial experience with open-heart surgery at the University College Hospital, Ibadan, Nigeria. *Tropical Cardiology*, 1981;7 (26):49-54
6. The Holy Bible. The Epistle of Paul to the Ephesians Chapter 4 Verse 15
7. **Drinkwater J.**: Abraham Lincoln, 1947 scene 3, the two chroniclers lines 9-12 School Edition with Notes by F.H.W. Spenlow. London: Sidgwick & Jackson Ltd.