ZIMBABWE

a medical elective report

Freida e Angullia

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There is a pause. An expectation.

They play a refrain on handmade guitars; lovers with tender shoulders and strong fists and cold embraces. Birds coo from slanting asbestos roofs. Butterflies break from disused Raleigh bicycle bells. In the air is the sound of a sickle cutting grass along the road where black men bend their backs in the sun and hum a tune, and fume, and lullaby.

They cut and level the grass till the sun is a crusty and golden distance away and throws cool rays over their worn arms, and the sky dims, and everything is quiet except the spray of light breaking and darting between the grass tossing back and forth above their foreheads and above their eyes now filled with fatigue.

The grass is swishing hopelessly below the shoulder, under the armpit, grazing the elbow, and its sound folds into a faint melody which dims with the slow dying of the sun, and each handful of grass becomes a violent silhouette: a stubborn shadow grasped.

Excerpts from ***Butterfly Burning***
By ***Yvonne Vera***
Acclaimed author, born and brought up in Bulawayo, Zimbabwe

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Introduction

My medical elective in Bulawayo, Zimbabwe did not go exactly as planned but returned a wealth of insight I would otherwise not have gleaned about the healthcare challenges in sub-tropical Africa. Famed for its low-rise buildings, wide rambling avenues and big skies, Zimbabwe's second largest city is aptly nicknamed by the locals, "Bulawayo Blue Skies".

My original plan was to concentrate on the surgical aspects of healthcare in one of the 2 large district general hospitals in Bulawayo. However, I ended up doing 2 weeks of General Medicine and 6 weeks of General Surgery in both and also in a third, smaller private hospital, all of which serve most of southern and western Zimbabwe. I found that familiarity with the medical problems of the region provided an excellent base on which to better appreciate surgical disease affecting similar patient groups, altogether making the experience I gained more varied and valuable.

The aim of this report is to share my elective experience in dealing with some of the many healthcare difficulties faced by Zimbabwe.

Health and Healthcare in Zimbabwe

The combined challenges of severe financial constraints and the growing AIDS epidemic characterise the current healthcare challenges in Zimbabwe. Huge curtailments in healthcare expenditure are closely related to the country's economic situation; hence, the ensuing difficulties are best understood in that context.

In the decade following independence in 1980, Zimbabwe experienced some of the most rapid improvements in healthcare in all of Sub-Saharan Africa. Infant mortality declined by 41% from 1980 to 1988 with only a modest increase in household incomes. This suggests that the governments' strong emphasis on basic health and family planning services, health education and community outreach, bolstered by a strong focus on prevention, were responsible for the improvements observed.

The 1990s saw health and health service indicators declining under the combined burdens of AIDS, economic crisis and drought, resulting in increasing infant and adult mortality figures, and the incidence of opportunistic infections such as tuberculosis (TB).

The worsening economic crisis persisted into the next millennium, accompanied by riots and strikes. In the past, Zimbabwe had been a major tobacco producer and potential bread basket for surrounding countries. However, the forced seizure of the majority of white-owned farms from 2000-2002, with the stated aim of benefiting landless black Zimbabweans, led to sharp falls in production and precipitated the collapse of the agriculture-based economy. This controversial land reform program, characterized by chaos and violence, has badly damaged the commercial farming sector, the traditional source of exports and foreign exchange and the provider of 400,000 jobs, resulting in an 80% unemployment rate in parts of the country. Since then, Zimbabwe has endured rampant inflation and critical food and fuel shortages as well.

Right: A combination of drought and land reform has dropped agricultural production throughout Zimbabwe (photo by BBC).

Furthermore, badly needed support from the International Monetary Fund (IMF) has been suspended because of the country's failure to meet budgetary goals. The resulting inflation rose by 214.7% from 1998 to 2005, while the exchange rate fell from 24 Zimbabwean dollars (ZWD) per US dollar (USD) to 15,200 in the same time period. The mounting debt threatens Zimbabwe into deeper economic crisis and will further undermine the health sector without a concerted effort at deficit reduction.

Despite efforts to protect spending for health and education, large budget deficits leading to inflation and growing interest payments resulted in a corresponding decline in real health spending and wages for health workers. Erosion of real wages in the public sector and increasing workloads have contributed to turnover and low morale, as has rapid growth of private healthcare primarily serving urban populations in the 1990s. The current staff shortages were created by recent political decisions, such as abolishing training for state-certified nurses and firing striking health workers, and the absence of effective manpower planning. This has resulted in a general decline in medical personnel competency and the exodus of professionals like doctors, nurses and teachers to more developed countries where employment is more lucrative.

For a period of over 15 years, the World Bank has provided policy advice and project support to health, nutrition and population programmes in Zimbabwe. Its initial effort in the health sector involved several loans to reinforce improvement in the quality and availability of health service in 24 target districts. This included the expansion of infrastructure, in-service training for nurses, and acquisition of drugs to treat sexually transmitted infections (STIs), as well as supplementing medical

supplies and laboratory equipment. Although proven valuable to the Zimbabwe health sector in the past, the World Bank's impact on health system performance and health outcomes has been undermined by economic stagnation and a devastating AIDS epidemic.

Zimbabwe is faced with the world's most severe AIDS epidemic. According to current UNAIDS data, about 25 percent of the adult population in Zimbabwe is infected with the human immunodeficiency virus (HIV) that causes AIDS, and the percentage may still be increasing.

The implications of HIV/AIDS for the nation's health system, economy and society are staggering. A quarter of the working population is infected with HIV, gravely affecting the productive sectors and reducing the gross national product (GDP) by 10 percent over 15 years. Loss of breadwinners has severely affected individual families who have then been forced to depend on other relatives for living expenses. Diminishing resources for healthcare cannot meet the steep increase in the demand for care brought by the HIV/AIDS epidemic. On average, an HIV/AIDS inpatient stay costs twice as much as a non-infected inpatient, due to higher direct costs of management and longer length of hospital stays.

Although HIV/AIDS is best addressed through prevention and behavior change, declining per capita health spending and growing demands for curative care have abated the preventative focus that characterized successful programmes of the 1980s. Treating STIs, which when present considerably increases the likelihood of contracting HIV, is resource-intensive, and unless united with a rigorous campaign to change sexual practices, is unlikely to have a significant impact on AIDS. Moreover, the expense of antiretroviral drugs (ARVs) to arrest the progression of AIDS development in HIV infected individuals is an unrealistic financial burden to a struggling economy.

The World Bank has co-sponsored innovative community AIDS prevention initiatives in the past but the government's response has not been commensurate with the scale of the HIV/AIDS epidemic, which may claim 1 million lives in this decade. Experience elsewhere in Africa has shown that strong leadership and political commitment can terminate the growth of the epidemic and save thousands of lives.

Recently, pilot experiments done in Zimbabwe show that HIV transmission rates amongst high-risk groups can be reduced by over 30% in just a few years. It seems that the government has developed a multisectorial strategic plan to combat HIV/AIDS; the challenge now is to implement it.

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Impact on the Local Community

The inflation rate is now about 600% and some economists predict the rise to 1,000% within two months, placing Zimbabwe in the grip of hyperinflation. The recent introduction of a so-called "bearer cheque" worth ZWD 50,000 – more than twice the value of the previous highest bank note is actually worth around USD 0.5 and only enough to buy a loaf of bread. Many have taken to carrying money in plastic carrier bags, a common sight on the streets of Bulawayo.

Right: a girl on a well-known street in Bulawayo town centre clutching a translucent bag full of money. Others carry suitcases and big duffel bags on similar streets, easy targets for snatch-thieves (photo by BBC).

Zimbabweans across all social strata are suffering the effects of rampant inflation. Many have difficulty meeting basic living costs and others survive on grain handouts. Queues can be seen in most cities, waiting for such food rations or at cash machines, waiting to withdraw cash, of which the supply frequently cannot meet the demand.

Left: a long queue at the cash machine on a busy high street in Harare, the capital city. Such was a common sighting in Bulawayo as well as some of the smaller towns around the country. One could be waiting up to an hour for cash withdrawal services.

In May 2005, tens of thousands of shanty dwellings and illegal street stalls were destroyed as part of Project Murambatsvina, a governmental effort to boost law and order and development. About 700,000 people were made homeless or jobless according to UN estimates. The aftereffects are still visible as piles of roadside rubble extending into the gardens and backyards of houses in certain districts around Bulawayo.

Right: the grey stretch of rubble on the left side of the street, a common sighting in various districts of Bulawayo.

Such social circumstances have an enormous impact on health, with poverty and malnutrition on the rise – a further hindrance to the HIV/AIDS battle ongoing in Zimbabwe.

General Medicine in Mpilo Central Hospital, Bulawayo

The practice of medicine in Zimbabwe is much less specialised than in the more developed countries. Bulawayo and the surrounding regions are served by two large government-run district general hospitals, one of which is Mpilo Central Hospital where I undertook 2 weeks of General Medicine. It is a tertiary referral centre offering most major specialties and houses the region's only paediatric unit, located in a separate, newly-refurbished block, and well-equipped with a paediatric intensive care unit (PICU). The other departments are all under one roof, with the exception of the TB unit, a small isolated building across the main car park.

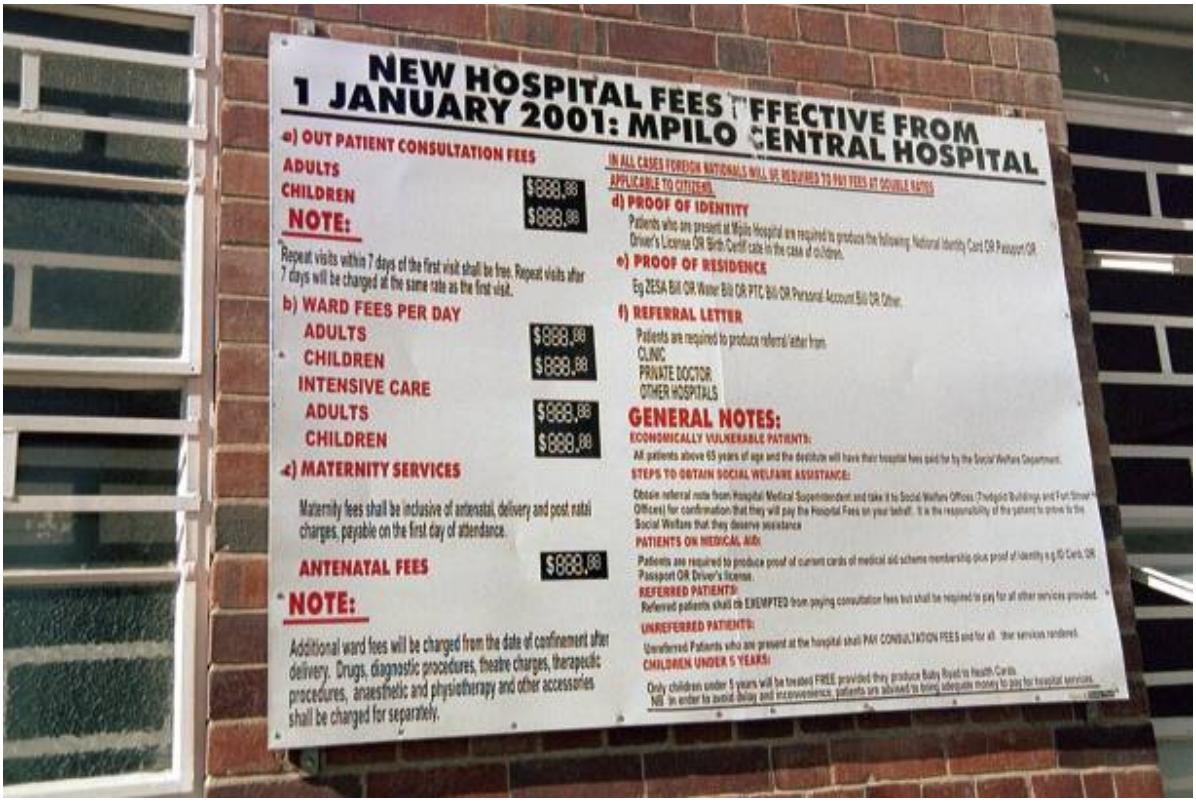
The three-storey red-brick building stands amongst modestly landscaped gardens – a cheerful working environment on a sunny day with clear blue skies! The entrance to casualty is on the other side of the block jutting out on the right, with the outpatient's department (OPD) directly opposite.

Patients are required to pay for the medical services they use, including any drugs prescribed or investigations performed. Under-resourced state hospitals such as Mpilo charge around ZW $20,000 (US 8 cents) per consultation, but the cost at better-equipped private hospitals such as the Mater Dei hospital is around ZW $500,000 (US $20) and patients can quite easily run up a bill of ZW $15 million (US $615) in a week. It is no surprise that only patients with health insurance such as Medical Aid can afford private health services and that many resort to traditional healers, or better known as *N'angas* (pronounced Nyang-ga) in Shona, the language of Mashonaland spanning the northern parts of Zimbabwe for cheaper alternative treatments.

According to the Zimbabwe National Traditional Healers' Association (ZINATHA), prohibitive medical costs had made it difficult for the poor to access healthcare especially when most government and private hospitals demanded cash upfront. Ironically, the difficulties facing Zimbabwe's healthcare sector have brought a business boom to many traditional healers.

There is concern that many traditional medicines are not properly administered or scientifically proven, despite the passing of the Traditional Medical Practitioners Act 25 years ago to regulate the work of the N'angas. Zimbabwe has been slow in incorporating the traditional healers into mainstream healthcare

delivery, probably due to the lack of a proper council representing the N'angas and their operations. ZINATHA has an established team of health inspectors who carry out nationwide checks on registered traditional healers to ensure that they conform to the organisation's regulations. However, much myth and superstition clouds traditional practice and so it tends to hinder healing rather than help at the best of times.



A familiar sight at all hospital entrances in Bulawayo. Note that the prices stated are out of date. Current rates are much higher due to the soaring inflation within a short span of time.

The general medical workload in Mpilo hospital is shared between 4 consultant physicians and their respective teams comprising mainly of a group of three to four JRMOs (PRHO equivalents), and one or two HMOs (SHO equivalents). There was a serious lack of registrar-level physicians across all four teams; the responsibility of on-calls and the training of junior staff thereby lay solely on the consultants.

Mpilo hospital contains gender-specific general medical wards, partitioned by curtains (pink for girls and blue for boys!) and short walls into bays. Those nearer the ward entrance – the acute admissions area – were directly opposite the nurses' station, where one would hope to find the sickest patients under close monitoring by the nursing staff. Visiting hours were strictly restricted to mealtimes and many patients depended on their relatives for regular meals, with only a simple breakfast of a slice of bread, some plain porridge and tea provided each day. It was not uncommon for swarms of family and relatives invading the wards each day, laden with containers and bags of food. Most would have been seated outside on grass patches around the carpark and by the roadside waiting patiently for visiting hours to begin.

A typical layout of the medical wards in Mpilo hospital. This was before the curtains were changed (I promise you they were bright pink!). The wards are generally well lit and naturally ventilated but mosquitoes can be a problem in the rainy season – huge numbers of mosquitoes settle in the folded curtains which swarm in great clouds when disturbed – patients are often found in the morning covered in so many bites easily mistaken for a strange rash. The lack of folders and adequate stationery for compiling patient notes and observation sheets frequently results in lost bits and pieces – a medical disaster waiting to happen. Head rests were mobile metal frames (far right on the bed), which usually ended up unused on the floor, even with stroke patients who had to be nursed at 30^{o} to prevent aspiration due to swallowing impairment, much to the infuriation of the consultants.

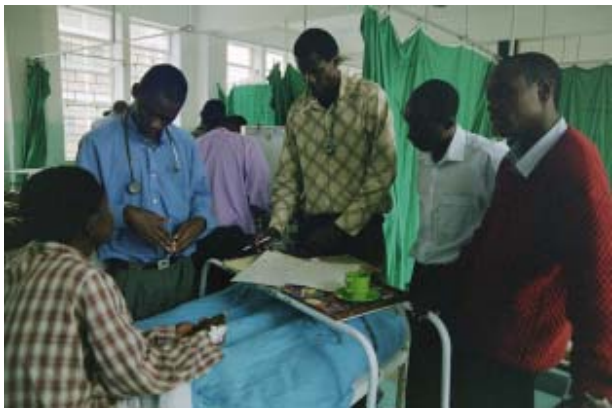
The female General Medical ward during lunchtime. Many well-dressed folk bring home-cooked meals for their sick family members. Some patients are more comfortable lying on mattresses on the floor, as some are used to in their own homes. This makes nursing sick patients difficult but is less dangerous for those very agitated with AIDS dementia, who are often found confused, crawling around on the ward floor naked, making strange noises, as they do in end-stage HIV encephalopathy. The acute bay is on the left in the foreground and the nurses station on the right, opposite.

I was mentored by Dr Mark Dixon, one of the consultant general physicians working in Mpilo Hospital. His workload is split between Mpilo, Mater Dei hospitals, the Opportunistic Infections (OI) clinic (HIV work), and the Medical Centre in town, where he runs a private outpatients' clinic. Consultant-led ward rounds were held twice weekly and spanned whole mornings, during which he would teach nurses and junior doctors alike alongside seeing the patients. All medical staff were fluent in English; most patients understood enough to respond to simple commands and answer questions but more detailed history-taking required some spoken Sindebele, the local dialect with clicks, similar to Zulu in South Africa.

Dr Dixon (far right) making an important point about securing i.v. cannulas on a ward round. Masking tape is the mainstay of strapping cannulas in place after insertion and so they regularly fall out, not doing patients very much good. Few nurses are able to resite them and the lack of internal communication (no bleeps!) makes those who can unreachable at times. Hence it is common for patients without i.v. access to miss drug doses and fluids for hours to days.

A typical pensive bedside scene on Dr Dixon's ward round. Five JRMOs taking turns doing jobs; it was common practice to do bedside procedures during the round (bottom left).

The JRMOs at work on the ward round. The mobile light box in the middle (background), essential for close examination of radiographs, which were available most of the time at Mpilo hospital.



My weekly schedule on Dr Dixon's firm was as follows:

DAY	**AM**	PM
Mon	Ward round (WR), Mpilo Central Hospital	Private OPD, Medical Centre/ ward work
Tues	HIV work, OI Clinic	Private OPD, Medical Centre/ ward work
*Wed**	OPD, Mpilo Central Hospital	HIV work, OI Clinic/ A&E medical admissions
Thu	WR, Mpilo Central Hospital	Private OPD, Medical Centre/ ward work
Fri	HIV work, OI Clinic	OI Clinic meetings/ CME** seminars
Sat	Private OPD, Medical Centre/ post-take WR*	Free/ ward work*
Sun	Free/ post-take WR*	Free/ ward work*

***** Wednesdays were our allocated admissions day so the JRMOs on the firm were based in the A&E department in shifts; Friday to Sunday on-calls were shared amongst the four medical teams, each taking one of the 3 weekend days each week.

****** Continuing Medical Education (CME) seminars included grand rounds and discussion of professional development and other administrative issues.

There was a daily ward round in the Mater Dei Hospital before each day's schedule began and the on-call rota there was one in three days.

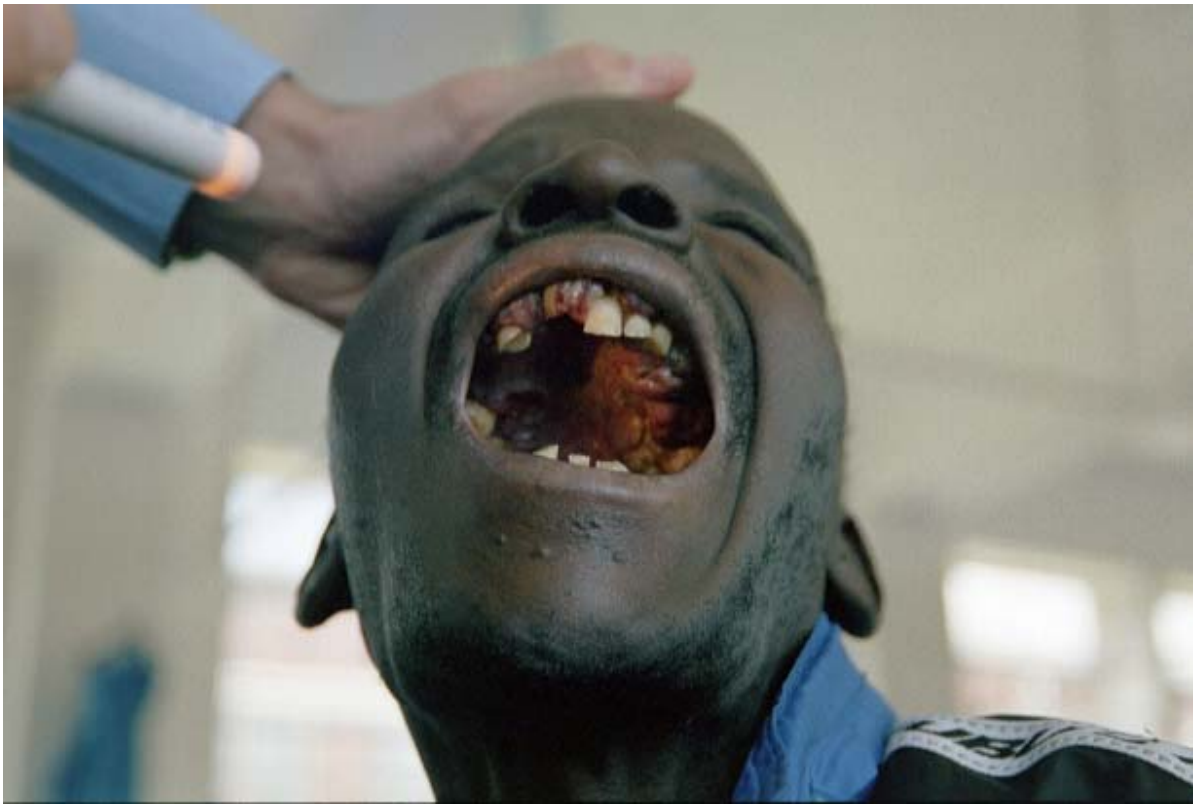
I cannot begin to describe the breadth of medical cases seen in the short fortnight on Dr Dixon's firm. Patients tended to present relatively late in Zimbabwe for many reasons. Distance from home to hospital is a major factor, as with the patient's financial state. Hence, almost all patients admitted were acutely unwell and many had advance pathology upon presentation, a wealth of clinical signs to be had.

Basic investigations such as blood tests, X-radiographs (X-rays) and ultrasound scans were usually available although there seemed to be a frequent shortage of bedside investigation equipment like BM sticks and urine dipsticks. Urgent inpatient ultrasound scanning was incredibly hard to organise due to staff shortages, often resulting in very sick patients deteriorating on the ward without active treatment due to a delay in diagnosis. CT and MR imaging were only available privately to those who could afford it. These constraints forced management decisions to be made purely on clinical grounds, which certainly sharpened one's clinical skills.

There was not a lot of choice where drug therapy was concerned in Mpilo hospital. Chloramphenicol, Benzylpenicillin, Flucloxacillin and Erythromycin were the mainstay of antimicrobial therapy and there was a good supply of anti-TB medicines. But the lack of antibiotic variety made treating resistant infections very difficult, and unless the patients' relatives could purchase the drugs privately or from South Africa, patients had to make do with what was available in hospital at that time. Occasionally, pharmaceutical companies might donate medical supplies and drugs to the hospital – there was always an abundance of Co-trimoxazole (good prophylactic drug for HIV positive patients with CD4 < 200) – and intermittently one would get hold of some good adhesive tape to secure i.v. cannulas, a rare treat for the JRMOs!

About 80% of our inpatients were HIV positive and suffered from varying degrees of AIDS and its complications. Cryptococcal meningitis was rife, as was atypical pneumonias and other AIDS-defining illnesses. TB was often encountered and I became familiar with the many faces of extrapulmonary TB, its presentation and complications. HIV wasting syndromes and chronic malnutrition were commonplace, which was a challenge to manage without total parenteral nutrition (TPN) and high-energy supplements. Nasogastric (NG) feeding was available and it was not uncommon to see nurses pouring sugared tea down the NG tubes of patients unable to ingest solids.

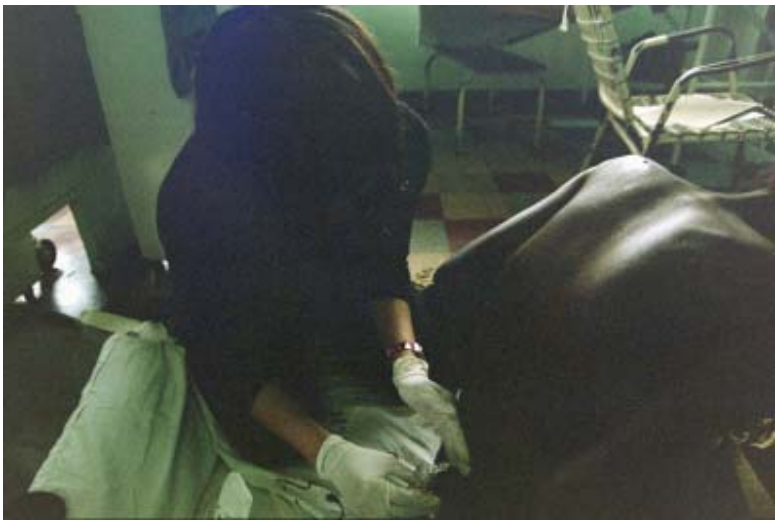
A middle-aged HIV-positive gentleman with disseminated Kaposi's sarcoma (KS). This oral lesion had engulfed his hard and soft palate and was beginning to encroach on his pharynx, threatening airway compromise. He also had bilateral conjunctival lesions. Disseminated KS was a common condition associated with HIV that presented in a variety of ways depending on the site most affected. Unfortunately, chemo and radiotherapy was not available in Bulawayo (one had to travel to the capital in the north, Harare) and so treatment was mainly palliative, as with most other inoperable cancers.



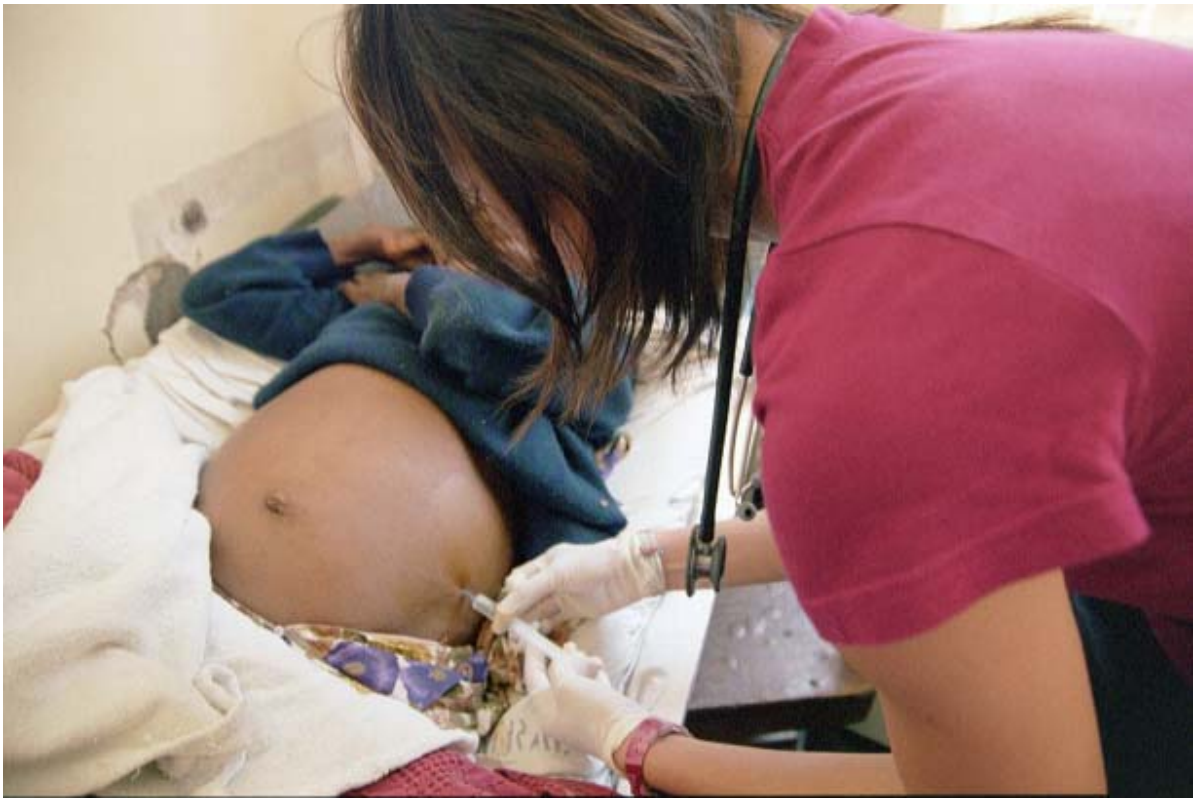
This was also commonly found on the wards – she suffered from the 3 Ds that characterize Pellagra, Vit B3 (Niacin) deficiency. Diarrhoea, dementia and dermatitis – Castle's necklace and hyperpigmentation of the hands (sun-exposed areas), classic Pellagra features.

The sheer numbers of patients we had at any one time provided an abundance of ward jobs to share between us and I spent some time shadowing the JRMOs who taught me several practical procedures in return. From lumbar punctures (LPs) to pleural taps, chest drains to femoral lines, I have lost count… I was forced to learn quickly and in turn was very quickly left on my own to practice what I had just learnt on real, live, sick patients. Local anaesthesia (LA) was non-existent on the ward, which made certain procedures extremely difficult. They were nevertheless still carried out, without the LA, to my utter horror. I eventually succumbed, realising that the patients generally had an extremely high threshold for pain and physical suffering, and also, more often than not, they were too drowsy or confused to put up any resistance!

Femoral vein sampling became a regular ward job as the JRMOs became lazy to take peripheral samples. They blamed it on the lack of tourniquets. The patients did not seem to complain very much. This patient was becoming increasingly confused with deep jaundice, a tender RUQ and enlarged liver. She had to wait a week for an urgent ultrasound scan because the ultrasonographer was doing extra private work. A similar patient with deep jaundice developed Kussmaul breathing and deteriorated rapidly over 3 days under our care waiting for an urgent abdominal ultrasound. Arterial blood gas sampling, as with other investigations, is not readily available which is can be a real disadvantage in the acute setting.



It was quite a challenge doing an LP on the floor. There was an influx of suspected meningitis one take and the following morning I was asked to do 4 LPs, one after the other. Not much of an aseptic technique and using a spinal needle instead of a thick i.v. cannula, which is the next best alternative when the ward runs out of spinal needles.



Ascitic tap on the medical ward in Mpilo Central Hospital. This patient was also another abdominal ultrasound candidate who was made to wait ages for it to be done. Such presentations usually heralded TB peritonitis in her case or in others with deep jaundice, hepatocellular carcinoma. Alcoholic liver disease is uncommon amongst the locals; alcohol being too expensive for most to afford (similarly with cigarettes and smoking).

We would usually begin with a daily ward round at the smaller, private Mater Dei Hospital in the first instance, before embarking on the rest of the jobs. This is where the private patients of certain consultants, Dr Dixon being one of three physicians working there, would be admitted for treatment. Mater Dei is a relatively well-equipped, well-organised hospital with medical, surgical, O&G and paediatric wards, a renal unit with three haemodialysis machines, and an intensive care unit (ICU) with 6 beds. There was more nursing support at Mater Dei as well as access to physiotherapists, giving healthcare a more multidisciplinary edge. Hospital fees were much higher than that in the government hospitals with a flat deposit of ZW $37 million required upon admission for patients without medical insurance.

The inpatients were a mixture of elective and emergency admissions, as were the assortment of disease seen, with a higher proportion of chronic disease encountered than in Mpilo hospital. Complications of diabetes mellitus (insulin infusions and sliding scales were more readily available at Mater Dei than at Mpilo), hypertension, various cardiac arrythmias, chronic obstructive airways disease (COAD) and chronic renal failure were some of the medical conditions presenting to Mater Dei hospital during my time there. Dr Dixon was also involved in managing patients in ICU and the renal unit, which was of great benefit to my learning. Still, TPN and some less commonly used antimicrobial therapy were not available in the hospital, which also suffered from financial difficulties, and had to be obtained by patients' relatives from South Africa. There were also many opportunities to observe echocardiography and ultrasound guided cardiac procedures such as pericardial centesis under the tutorship of Dr Dixon, especially with the wealth of patients presenting with pericardial effusions secondary to TB and post-rheumatic fever valve lesions causing varying degrees of heart failure.

The several afternoons spent in Dr Dixon's private OPD were amongst the most invaluable learning opportunities. I was allowed to examine every patient and then present my findings after and was subsequently taught from there. Here, there were a number of patients with coronary artery disease (CAD), Type 2 diabetes mellitus and cardiac pacemakers who were monitored in his clinic, mainly Caucasians and individuals of south Asian origin, compared to the OPD at Mpilo where the majority of patients were black Africans, many of whom had essential hypertension. CAD was relatively uncommon amongst the black African community in Bulawayo, perhaps attributed to lifestyle and dietary factors – the chronic food shortages in Zimbabwe certainly curtailed the progression of such chronic disease.

HIV/AIDS at the OI Clinic

As aforementioned, the AIDS epidemic is the most serious problem facing health and the healthcare system at present in Zimbabwe. ARV therapy, well established for its benefits in slowing the progression of AIDS and reducing transmission of the virus, was not available in government hospitals prior to 2004, resulting in climbing morbidity and mortality rates amongst individuals with HIV/AIDS.

A sophisticated antiretroviral (ARV) programme was set up by the Spanish non-governmental organisation (NGO) Medicins Sans Frontieres (MSF), or Medicine without Borders, in 2004, in conjunction with the government of Zimbabwe. The aims of the ARV programme were not just to provide ARVs at an affordable price to patients but also to educate the community and demolish the misconceptions and stigma associated with HIV/AIDS.

As Dr Dixon was committed to the ARV programme and is a key figure in its management, I had the chance to spend about one and a half days a week at the OI Clinic, set up in the old TB hospital located opposite Mpilo Central Hospital, reviewing patients on the ARV programme with the doctors and nurses from MSF. The clinic comprised of a testing centre, pharmacy, counselling and review rooms, as well as a small inpatient ward. Long queues of patients waiting to be seen or counselled, or for their ARVs to be dispensed was commonplace; young mothers with babies bundled to their backs, grandmothers with toddlers and school-aged children, men and their wives, sisters and brothers – an array of HIV infected individuals lining up for life-saving therapy, one could hardly walk down the corridors without bumping into people – there were so many of them!

The MSF team involved in running the OI Clinic (below) taking a breather on the second floor balcony, catching up after a weekly meeting where difficult cases and management issues were discussed. The views of the Bulawayo blue skies from there are breathtaking (left).

ARV treatment is given according to the WHO staging for HIV treatment (see section 1 below). The programme has a well-structured protocol of patient follow-up and is summarised below:

1. Registration
    - Clerking including full drug history
    - Blood tests for CD4 count, results 2 days later
        - CD4 < 350 = ARVs
        - CD4 > 350 = 3-weekly monitoring
        - CD4 < 200 = Co-trimoxazole prophylaxis against pneumonias (esp PCP), diarrhoea and toxoplasmosis

2. Group counselling (10-15 people) by trained locals
    - To tackle therapy adherence issues and for peer/ family support
    - 2 sessions of basic counselling
        - Encourages positive living
        - Education on HIV transmission and infection with emphasis on prevention
    - 2 sessions ARV counselling
        - Importance of adherence to therapy
        - Education on ARV side effects

3. Individual counselling
    - Assess understanding and readiness to comply to treatment regime

4. Commence ARVs
    - Only if no concomitant infection (if TB, treat before commencing ARVs)
    - Liver function tests (LFTs) for baseline first
    - Patients divided into cohorts of ARV-naïve and experienced individuals
    - Drug regimes (for ARV-naïve patients)
        - Coviro = Stavudine & Lamivudine (d4T+3TC) **OR**
        - Trioune (1st choice) = Stavudine, Lamivudine & Nevirapine (d4T+3TC+nvp)
    - Drug regimes (for ARV-experienced patients)
        - Coviro + Efavirenz (efv)
    - See 2 weeks later to increase Nevirapine dose
    - Given one month's supply

5. Review therapy
    - Four weeks later – check LFTs
    - Side effects of ARVs
    - Recheck CD4 count to assess response, do viral loads if falling CD4 counts (high viral load indicates treatment failure)
    - Assess compliance to therapy

There were many opportunities for me to see newly-registered patients in the OI clinic (both adults and children) and review those who have had a course of therapy with the MSF staff. I became familiar with the protocols of treatment and follow-up and the recognition of side effects and other complications of ARV therapy, and also learned to make decisions about titrating drug doses or changing whole treatment regimes based on the patients' response to therapy.

The cost of treatment is ZW $50,000 (US $0.50) per month's supply of ARVs for patients under the programme. Healthcare personnel such as counsellors and social welfare staff are exempt from paying, and also have the benefit of fast-track through the long waiting lists for joining the programme. The earliest registration for new patients was April 2006 but immediate family of individuals already in the programme had fast-track privileges as well. This system aimed to support HIV infected families and emphasize the family unit as vital in battling HIV/AIDS. About 3,000 patients were on the

programme during my elective, which leaves approximately 17,000 in Bulawayo left without ARV treatment. The MSF target was 20,000 infected individuals by mid-2006, which might just be possible with the OI Clinic at Mpilo Central hospital being the best-stocked for ARVs in Zimbabwe.

Apart from the long waiting lists, another major problem faced was with some ARV-experienced patients who previously obtained their treatment privately, but lacked the financial resources to continue therapy with the worsening economic situation in Zimbabwe. These individuals would typically have had a short course of ARVs as a private patient before then registering themselves at the OI Clinic after a period of time without ARV therapy. The most common reason given would be the long waiting lists at the OI Clinic, however, the lack of proper counselling and forethought results in these individuals put at an increased risk of developing drug resistance to first line ARV therapy. Whether or not to allow these individuals onto the programme with the same benefits as others is an ongoing ethical dilemma.

World AIDS Day 2005

Sat 3 Dec

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It was a festive day that commencing with parades in the morning through the streets of Bulawayo. Campaign banners flying, people donned in campaign T-shirts chanting and marching, despite threatening rain clouds gathering in the sky. The day's activities were organized by the MSF, some of whom were marching with the locals on the streets which were closed to traffic.

KEEP THE PROMISE was the campaign slogan for the year, encouraging the community to keep their promises of fidelity to their spouses, supporting their family members with HIV/AIDS, being open about their HIV status and adherence to ARV therapy. In return, the government and NGOs would keep their promises of providing affordable ARVs, education and support for HIV infected individuals. There was a strong drive to change the ***PERCEPTION*** of the community of HIV/AIDS, with the hope of breaking down social ***STIGMA***; emphasizing the value of the ***FAMILY UNIT*** in combating HIV/AIDS and encouraging positive, ***HEALTHY*** living with the aid of ARVs, enabling infected individuals to return to work. In short, HIV/AIDS was nothing to be ashamed about, it is <u>not</u> a death sentence anymore if one knows his HIV status sooner rather than later – making the MSF ARV programme known and understood (right, a page taken from *Brighter Side of Life, Positive Stories from Zimbabwe,* an MSF publication for the event).

The parades consisting of school marching bands, dancers and HIV/AIDS activists converged at Lobengula Street – a largely "black" part of town where the main campaign events would take place. Huge crowds of local people gathered to view the performances…..

It was a vibrant display of colour and sound, with big uniformed brass bands and others wearing white campaign T-shirts – their melodies and the chanting of many voices filled the overcast atmosphere.

I was completely mesmerized by the trumpeters at the parade! There is a great deal of musical and theatrical talent in Zimbabwe and to get a taster as such was a great pleasure for me. It was thrilling to see so many different groups within the society united to campaign for HIV/AIDS on that day.

The brass band took their seats directly in front of the stage. Joined by many locals who kept streaming in throughout the day, soon closing the gap between the stage and the audience!

My little friends, Jimmy & Nqobi Dixon, also HIV/AIDS activists for the day, at the World AIDS Day celebrations at Lobengula Street where a large tent, rows of plastic chairs, a stage and PA system were set up for the campaign address, speeches, dances, testimonies and theatricals of the day.

The MSF provided free T-shirts and hats as well as a beautiful book of testimonies from HIV/AIDS patients who are now on ARV treatment. The podium on stage could just be seen (top left). It was a crowd of mixed ages, most of the children preferring to be outdoors where the bands were playing.

After the traditional Zimbabwean dances and theatricals performed by various groups, the local people spontaneously took to the stage in flamboyant song and dance – African-style – with incredible rhythm and harmony, attracting more and more on stage to join in the dancing campaign!

Dr Dixon, giving the campaign address in front of the veiled statue erected at Lobengula Street. Well-known to many HIV/AIDS sufferers and their families present at the gathering, his speech reiterated the goals of the ARV programme and was captivating and inspiring to all. Media coverage was crucial in conveying the message across the nation, keeping all parties involved accountable for their promises made to the community.

The unveiled masterpiece – the hope for an HIV-free future lies in the hands of the children who are supported by adult hands – everyone has a role to play in contributing to hope of an HIV/AIDS-free future for Zimbabwe. The day's celebrations culminated in the unveiling of this newly-erected statue and a spate of testimonies given by HIV/AIDS individuals on the ARV programme.

NGOs such as the MSF are central to launching initiatives that have a dual emphasis on treatment and prevention, which can change the landscape of HIV/AIDS in less developed countries like Zimbabwe. Their contributions of a structured programme, affordable ARV treatment, and trained personnel to implement schemes alongside the local medical staff are invaluable contributions to the community at large. An ethos of transparency and accountability in partnership with the government is vital for the success of such programmes across Zimbabwe.

General Surgery at United Bulawayo Hospital, Bulawayo

The bulk of my elective was spent at the United Bulawayo Hospital (UBH) under the supervision of Professor Michael Cotton, one of the two consultant general surgeons practising there. UBH is a large, government-run tertiary referral centre with a huge catchment area, much like Mpilo Central hospital. It offers most major specialties apart from paediatrics; the unit was recently moved to Mpilo hospital. The ICU is small, with a three to four bed capacity but well managed by the anaesthetists.

Divided into numerous blocks sprawled across a green field with dirt roads criss-crossing, looming tropical palm trees at the entrance to casualty and gorgeous quaint cars in the carpark (below), it was a refreshing place to work at. The main building above contains the A&E department, operating theatres directly above, general medical and surgical wards, and the paediatric ward on the top floor. The OPD and long-stay wards are located in the outlying buildings, a short walk from the main hospital block above. Bottom right: white coats can be useful in stormy weather! Myself, walking from the outlying OPD back to the main hospital building after a morning clinic, tiptoeing through flooded dirt roads.

Below: a beautiful marble green Ford Anglia that was frequently parked in the main carpark – Bulawayo roads crawled with these antique cars which were usually very well-kept and a real feast for old car lovers like myself!

The general surgical work in UBH is varied, comprising of all aspects of surgery except orthopaedics, urology (although we did do some tendon reconstructions and open prostectomies) and the surgical specialties of Ophthalmology, ENT and O&G. My surgical experience extended to the Mater Dei hospital as well; Prof Cotton being one of two general surgeons working there. He had a full team with a surgical registrar, a Congolese surgical trainee registrar, a UK-based surgical SHO and 2 JRMOs, who were all keen to teach students like myself.

My weekly schedule on Prof Cotton's firm was as follows:

DAY	**AM**	PM
Mon	WR + OPD, UBH	Minor surgical jobs in A&E, UBH Private OPD, Lancet House (Prof Cotton)
Tues	Operating list, UBH	Operating list, UBH
*Wed***	WR + A&E surgical admissions*	A&E surgical admissions
	Operating list, Mater Dei	Private OPD, Lancet House (Prof Cotton)
Thu	WR + OPD, UBH	Minor surgical jobs in A&E, UBH
	Lunchtime CME** seminars	Private OPD, Lancet House (Prof Cotton)
Fri	Operating list, UBH	Operating list, UBH
Sat	WR ± operating list*	Free/ operating list*
Sun	Free/ WR ± operating list*	Free/ operating list*

* Wednesday is the team's admissions day every other week so the JRMOs on the firm are based in the A&E department; we were on-call one in two weekends.
** Continuing Medical Education (CME) seminars were mainly grand round-style and happened every other week
There was a daily ward round in the Mater Dei Hospital before each day's schedule began and the on-call rota there was one in two days.

The general surgical wards in UBH were similar to those in Mpilo, gender-specific and generally under-resourced. There was an intermittent shortage of i.v. fluids which made rehydrating patients post-operatively very difficult. Wound dressings were generally in stock apart from good quality surgical tape, resorting to masking tape to hold dressings and i.v. cannulas in place, which they rarely did with disastrous results. Nutrition was a major problem in patients with post-operative complications such as enterocutaneous fistulae and septic wounds; TPN was not available and high-energy supplements usually had to be purchased by relatives.

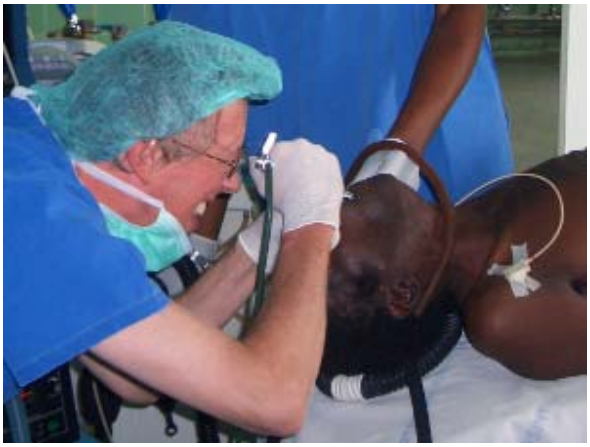
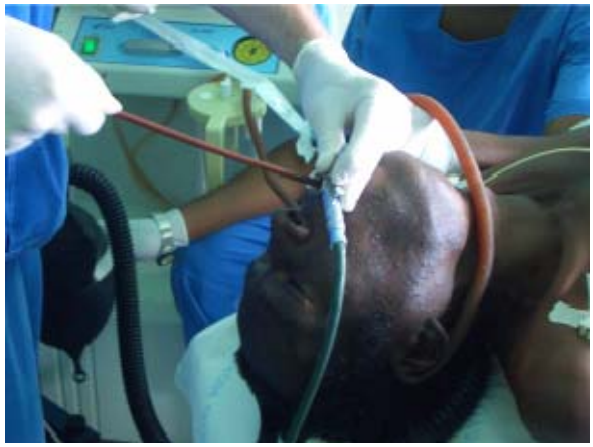
The female surgical ward in UBH. The male wards are similar and it was not unusual to have every bed filled with acute surgical patients; the more stable, chronic ones would then be transferred to an outlying surgical ward.

The mainstay of securing surgical wound dressings – rows and rows of regular masking tape stuck together to make a Mepore dressing equivalent! Widely used, but not very functional.

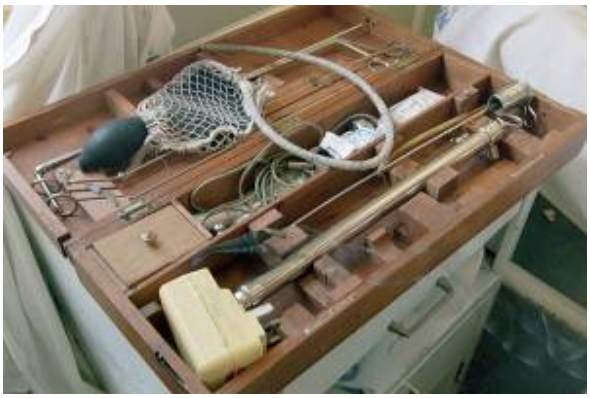
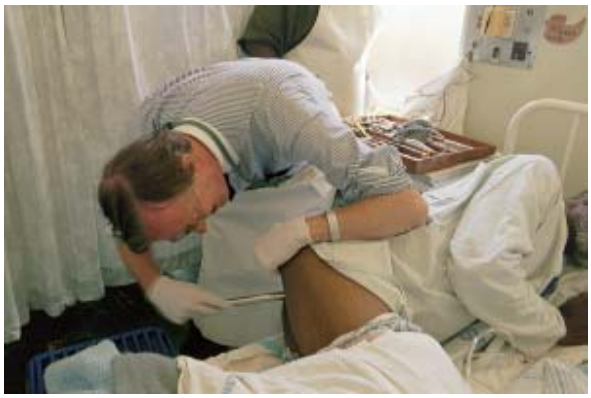
The paediatric surgical ward in UBH (left and below), complete with burns unit (2 side rooms). Meals were communal and the children were always delighted to pose for their picture to be taken, especially if one showed it to them on the digital screen afterward!

Left: I escaped to snap this shot in the middle of our ward round which clashed with the children's breakfast time. From left standing in the background: Dr Bishay (UK surgical trainee), Prof Cotton and Dr Lumbala (Congolese surgical trainee).

Basic investigations such as X-rays and ultrasound scanning were available most of the time but there seemed to be frequent shortages of films, which meant days without X-rays, a real hindrance to the diagnosis and management of patients, especially those with suspected GI perforations. More sophisticated investigations such as flexible sigmoidoscopy/ colonoscopy were not offered at UBH although Prof Cotton performed rigid sigmoidoscopies and OGDs on a regular basis.

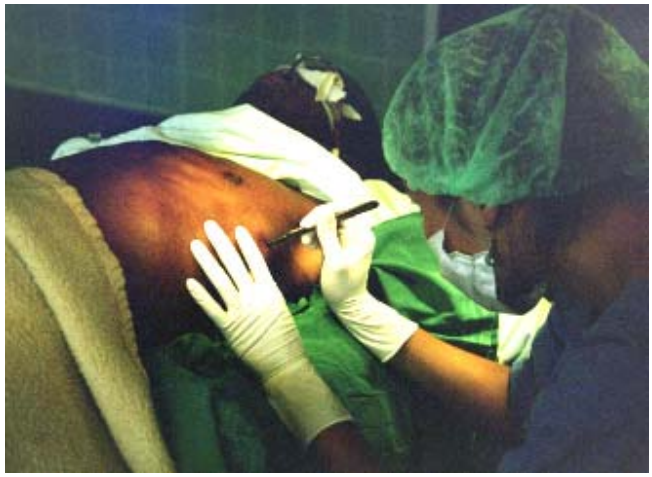



Prof Cotton performing a rigid OGD under general anaesthesia (GA) in the main operating theatre in UBH. Dysphagia was a commonly encountered, usually due to chronic oesophageal candadiasis from HIV infection, but also from tumours or strictures from ingesting caustic substances (parasuicide).

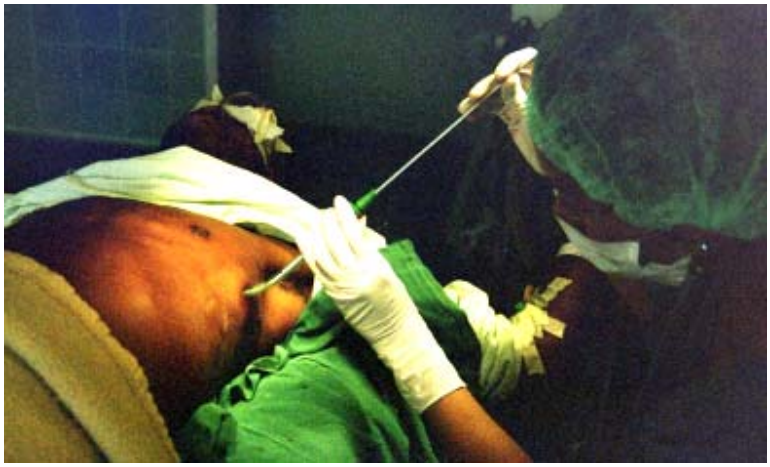



A rigid sigmoidoscopy performed on the ward (top and bottom right). The kit (above) comprises of a rigid hollow metal tube (foremost object), a light source (long thin metal object further on) and an insufflator with a connecting rubber tube (bottom right picture) and various other metallic implements to carry out certain procedures whilst visualizing the sigmoid colon. This elderly gentleman had a recurrence of sigmoid volvulus and went on to have a flatus tube inserted.

The experience I gained on Prof Cotton's firm was extensive and varied. I was first taught, then allowed to do minor operations on my own in casualty or in theatre, occasionally supervised by a junior member of his team. Often I was the first assistant during the more major operations, where Prof Cotton would teach whilst operating. The lack of minimally-invasive surgical equipment and expertise meant that there were more open surgical procedures carried out and more operations that could be done in a given list – the scope of surgery extended from neurosurgery to plastics reconstructive; gastrointestinal to vascular surgery on adults, children and neonates. There was also an abundance of practical procedures to do on the wards, particularly insertion of chest drains (below, in theatre).

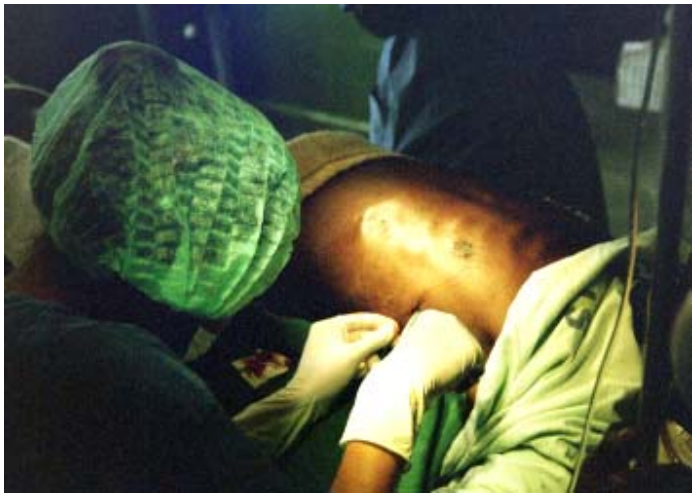


1) Incision

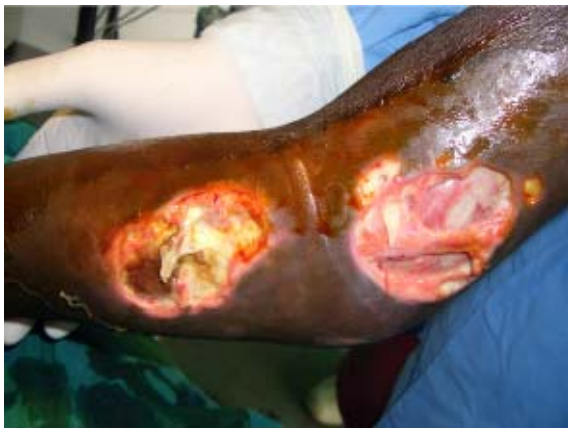


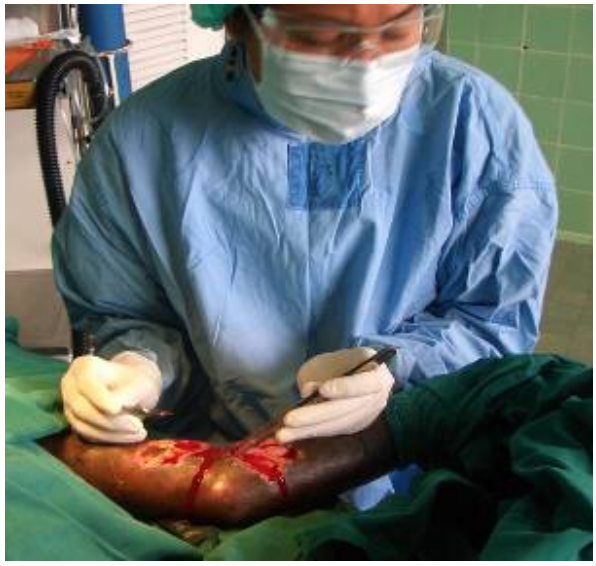
This young chap fell onto his plough and subsequently developed worsening abdominal pain and distension, fever & rigors and dyspnoea. He was found to have bilateral pleural effusions which required drainage before the anaesthetist would give a GA.

2) Trocar and tube insertion

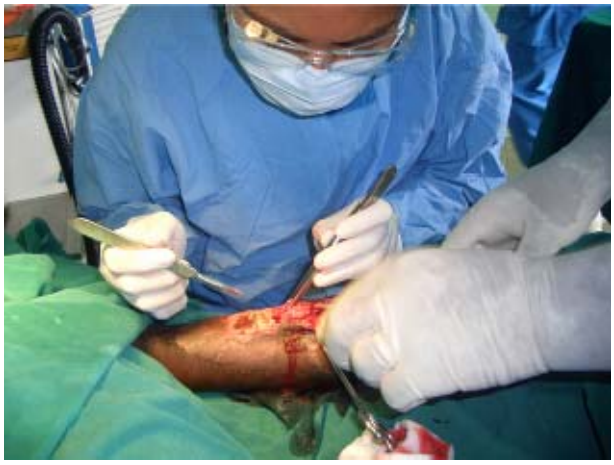


3) Suture tube in place



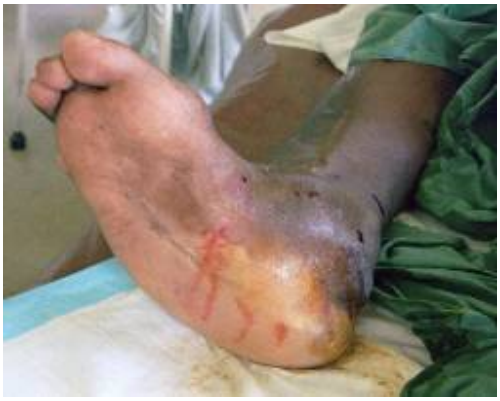


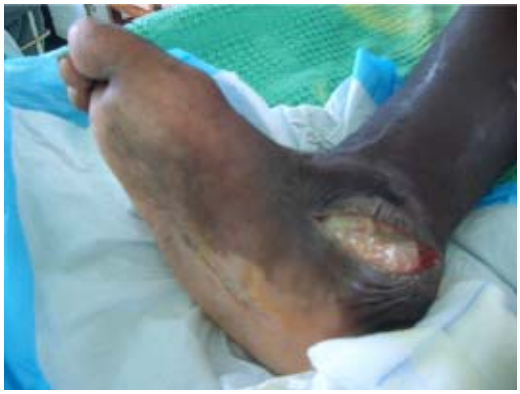
Above: Left elbow septic burns of a 15 y/o boy. The entire elbow joint was infected and discharging pus requiring an incision & drainage (I&D) and debridement of the wound under GA (right). Congolese surgical trainee, Dr Lumbala, kindly assisting whilst supervising my work (directly below).



Several artery clips came in handy as I delved deeper into the elbow joint, soon to reach bone and tendon. The entire joint was filled with pus and the bleeding became extensive as more dead tissue was excised (right).

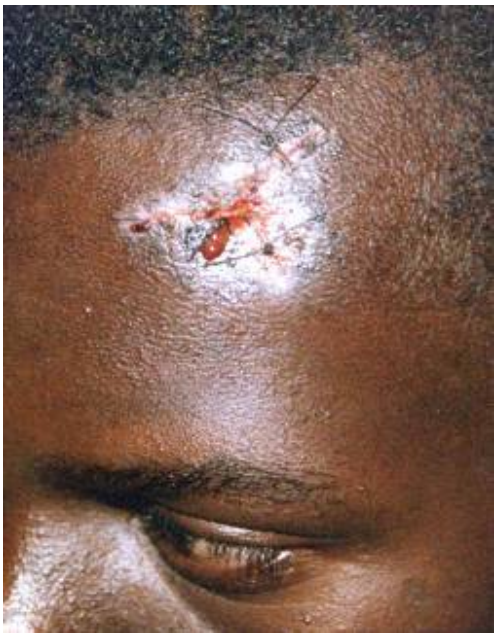
Left: Betadine-soaked swabs were packed into the wound and removed soaked with pus. The process had to be repeated a few times to drain all the pus within the joint. The bleeding vessels were then cauterized and the wound packed with more Betadine–soaked dressing and left to heal by secondary intention. The patient was in severe pain post-operatively – i.m. Pethidine was the analgesia available on the ward, and so I signed the drug chart for him to receive it!



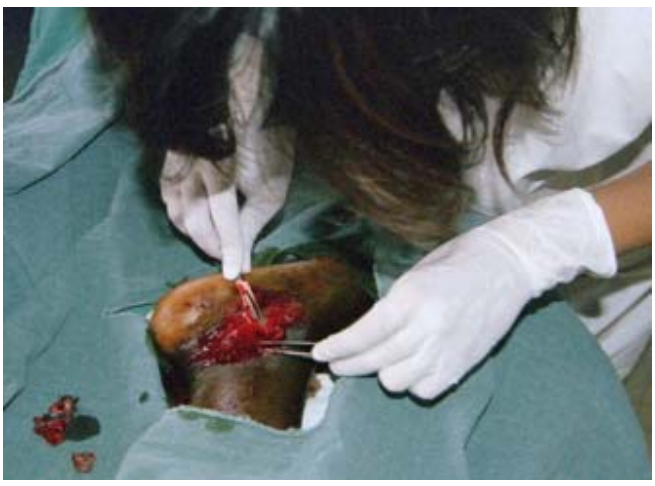


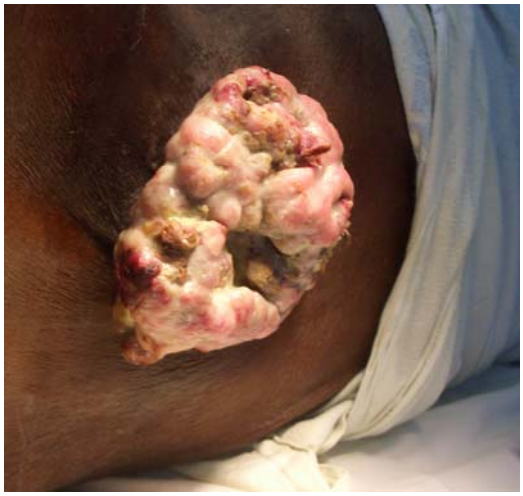
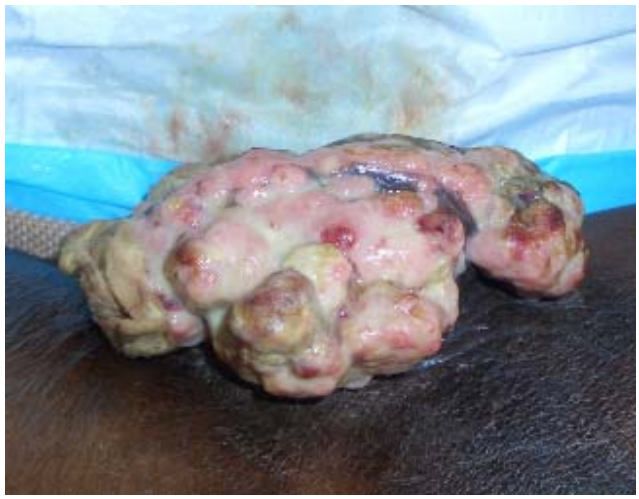
Above left: Left ankle joint abscess in a middle-aged diabetic woman who has had a previous amputation of the fourth toe on the same foot. I&D performed in casualty under sedation with Ketamine & Diazepam revealed a multi-loculated abscess surrounding the medial malleolus (directly above).

Left: my handiwork! This gentleman had a compound fracture of the skull as a result of being hit with a brick by a friend. The corner of the brick made contact with his forehead, creating an inverted pyramid-shaped hole in his skull. After replacing the shards of bone as best as I could, I sutured the wound in four stitches (in casualty) – the result – a neat Mercedes-Benz sign scar! The patient seemed satisfied with the outcome, as I was as well.

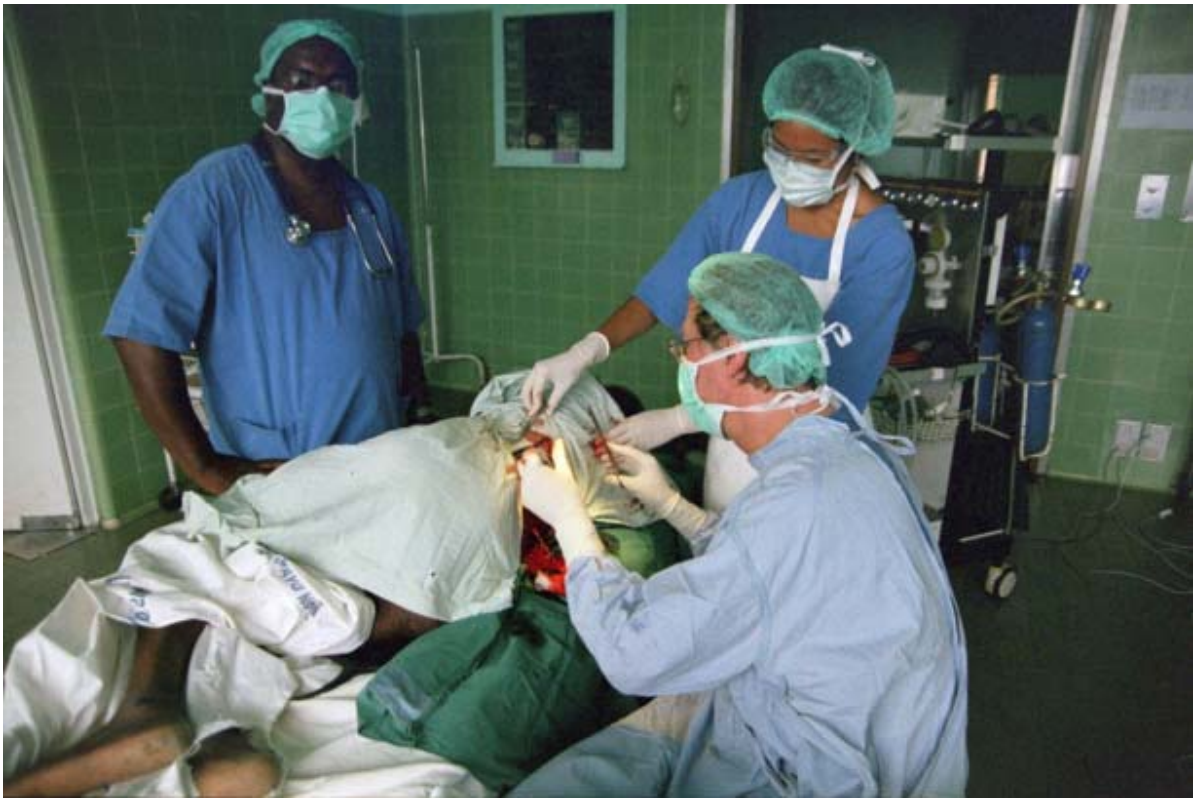


Right: Another medial malleolus wound belonging to a diabetic man that refused to heal and needed debriding – one of the more straightforward jobs done in casualty. Suture packs ran low frequently and I overcame the general inertia of the casualty nurses by lugging 7 suture packs over from the outlying autoclave unit – wrapped in drapes, piled high in my arms – I was a right sight walking across the fields back to casualty!

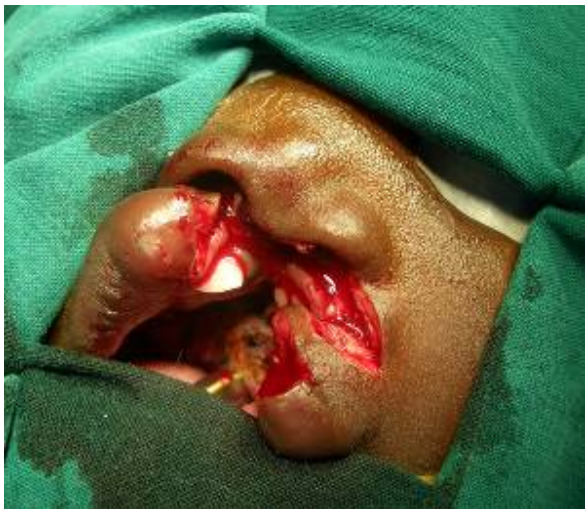


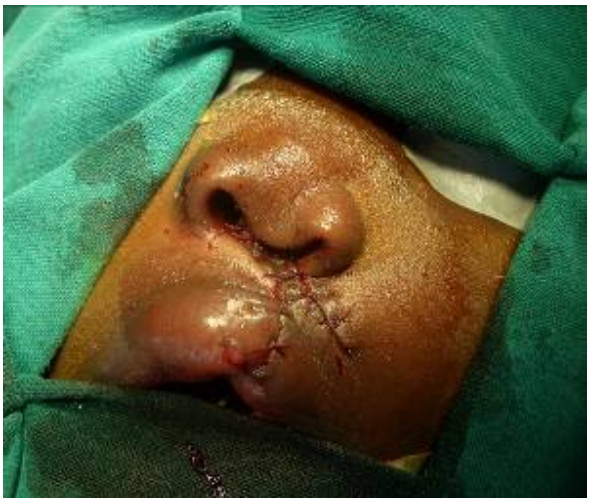
A fungating tumour arising from the thoracolumbar region of the spine in an elderly woman. She also had multiple skin nodules over the flanks – probably metastases from this primary tumour. I assisted Prof Cotton in this palliative excision in the main operating theatre. This was probably of soft tissue origin (no histology readily available); the patient did not have any neurological signs of note, particularly of the lower limbs.



Dr Lumbala on the left, Prof Cotton in the foreground (above). This is one of two operating rooms in UBH, both usually occupied simultaneously during a busy list. The anaesthetists use Manley ventilators during GA and the tanks containing various different anaesthetic gases can just be seen to the right of the picture. Bellows of "OXYGEN" down the theatre corridors can be heard frequently as the gas runs low in the midst of an ongoing operation. A theatre hand would then be seen rolling another canister over to replace the diminishing one.



Above left: An 18 month old girl with a cleft lip. An elective repair took place with Z-plasty (above right) performed by Prof Cotton, in which I had the privilege of assisting (left and below).

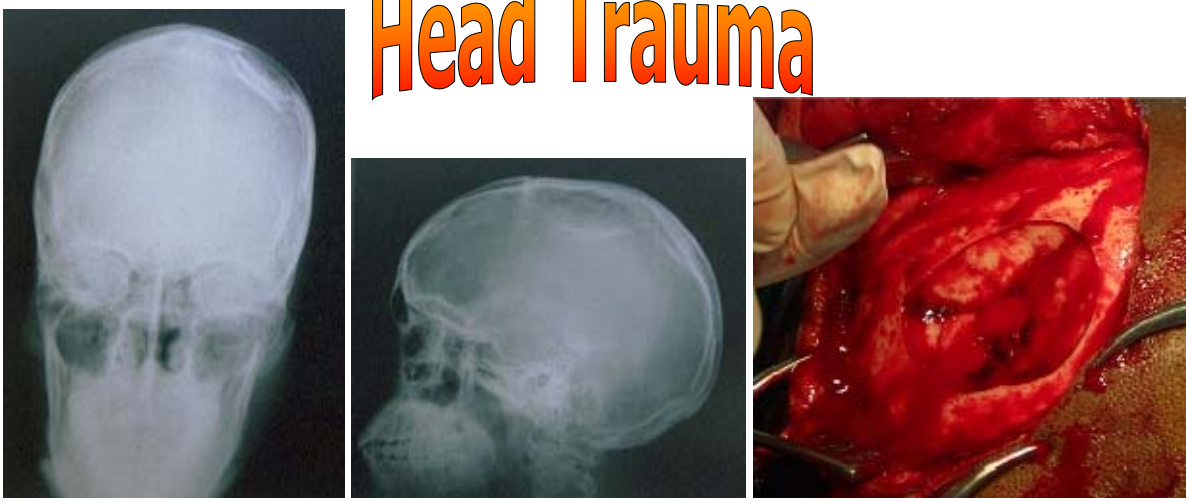


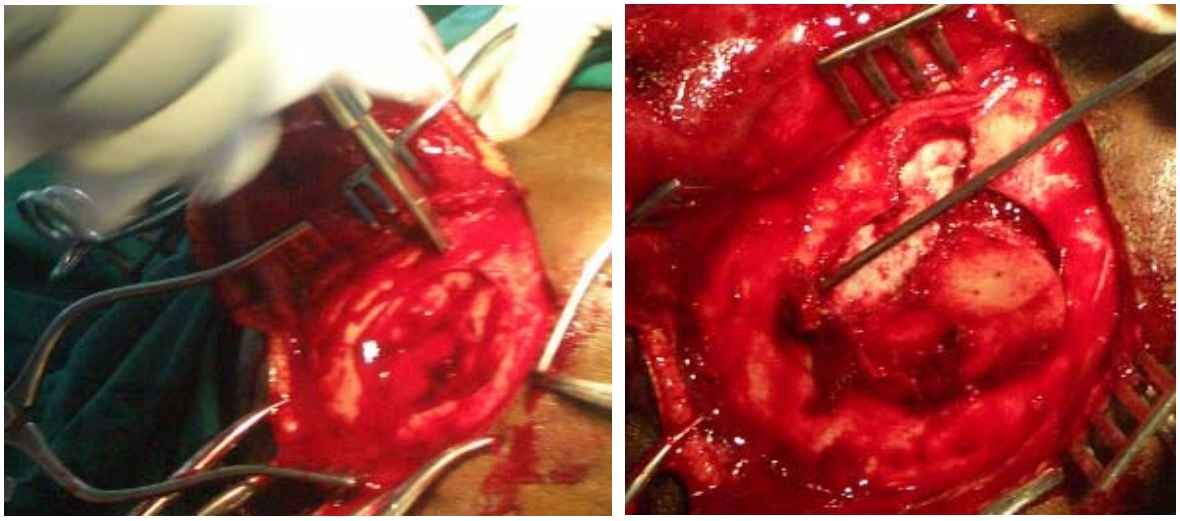
Left and right: The final outcome of the cleft lip repair. The wound was dressed with Vaseline and left uncovered. Feeding was not a problem after.

The variety of surgical disease seen on the wards was astounding. Up to 50 percent of our surgical inpatients could be trauma victims, whether sharp/blunt abdominal/chest trauma or road traffic accident (RTA) victims with extensive head injury and multiple fractures. Burns were very common, which typically required split skin grafting, some very extensive, often developing complications such as disabling joint contractures as a result of poor pre/post-operative care. Cases of acute abdomen requiring laparotomy occurred frequently – we were doing at least one every other day, on average. There were numerous cases of large, fungating, neglected bony and soft tissue tumours presenting to OPD, where we would have to assess their suitability for elective surgery. Gangrenous limbs were a common late presentation of severe burns, snake bites and poorly managed diabetes, and often had to be amputated.

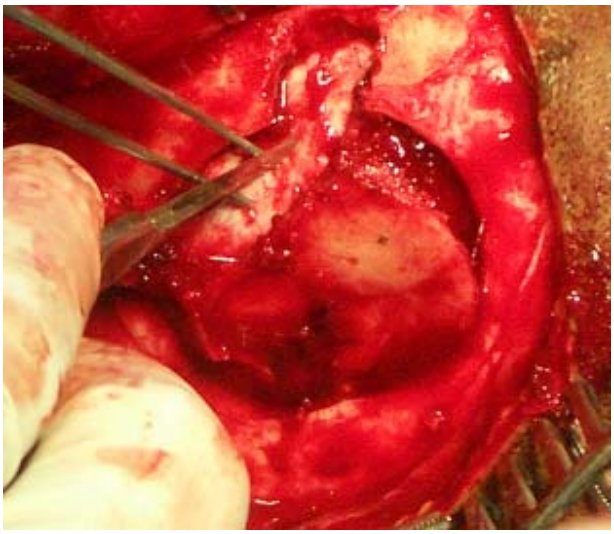
I soon learnt how to assess the acute surgical patient towards making critical decisions about whether or not an operation was needed (and how urgently), as well as managing the chronic post-operative problems on the ward which commonly occur in immunosuppressed or malnourished patients, like both high and low-output enterocutaneous fistulae following GI surgery or sepsis following infected split skin grafts (SSGs) for burns.

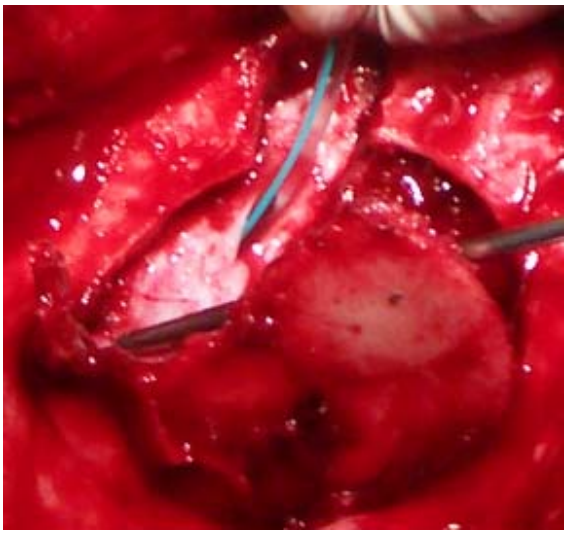
Head Trauma



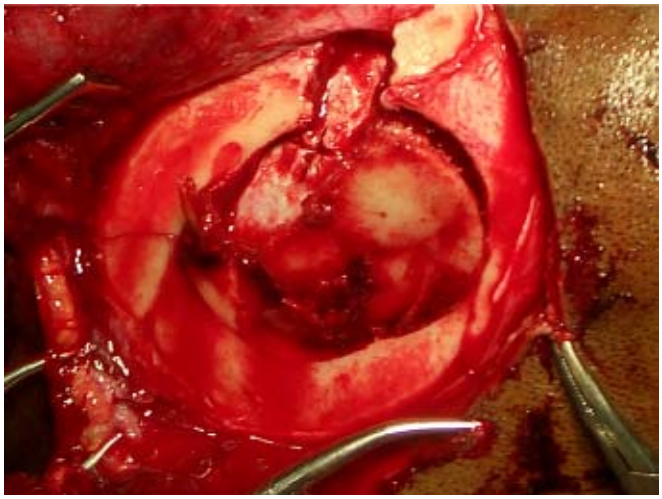


The above two skull X-rays clearly show a depressed skull fracture in the left parietal area. This was a gentleman in his early twenties who was assaulted on the head. He presented with headache, drowsiness, a right-sided hemiplegia and aphasia. Elevation of the skull fracture was performed under GA as shown above.

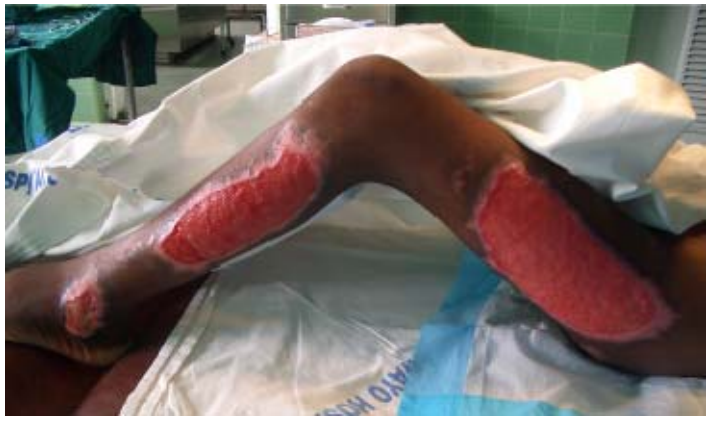


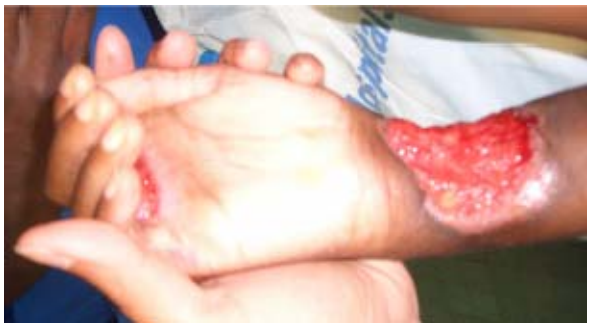


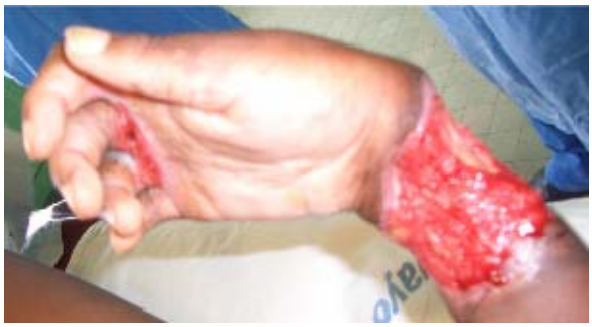
The elevation is complete and a hole is made in the skull for drainage of the subdural collection beneath. A cross-shaped hole is left for further relief of the pressure build-up beneath the elevated skull pieces due to further bleeding. A drain was then left in-situ until it ceased to drain > 50 ml fluid. The patient made a slow recovery – about 3 weeks post-surgery he started to regain his speech but still had significant right hemiplegia.



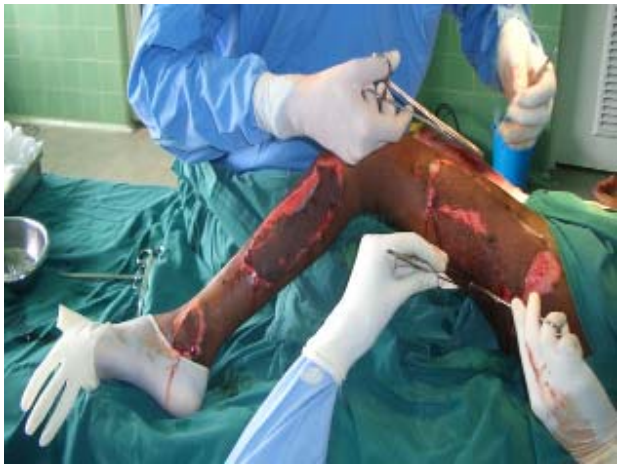
Burns

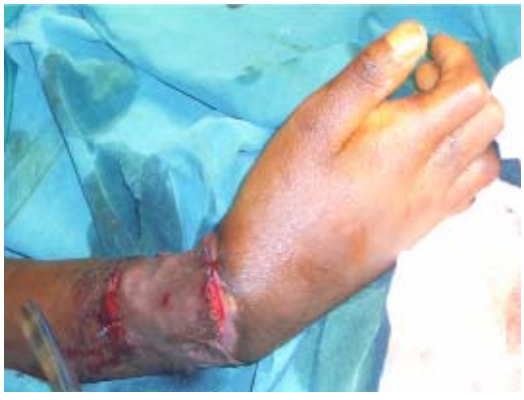






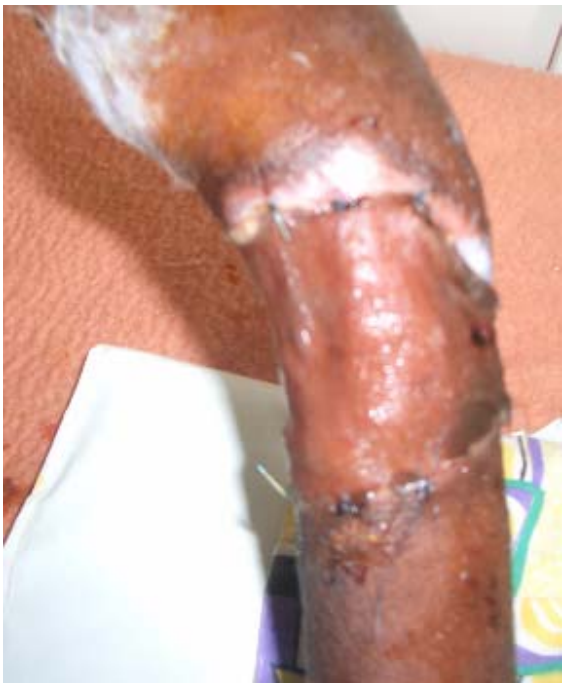
This is an electrical burn on the right wrist and lateral left leg of an 11 year old boy, who came into contact with a fallen live electrical cable. The wrist burn was almost circumferential and there was marked loss of both flexor and extensor tendons, resulting in great functional loss and fixed flexion deformities of the fingers. He had just been admitted into the paediatric ward when I started my elective and remained there for the rest of my time in UBH.

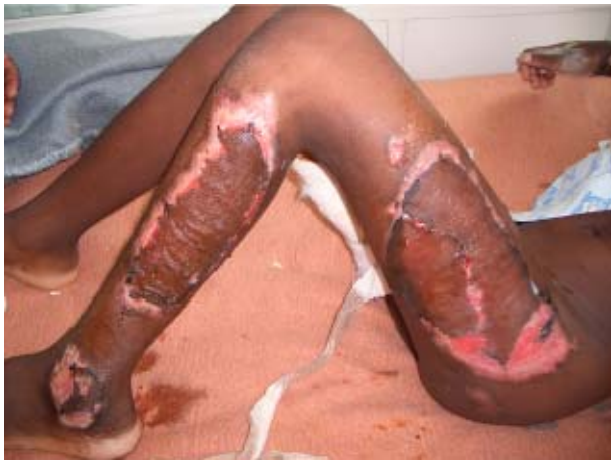




A split skin graft (SSG) was taken from the unaffected right thigh (above) and sutured onto the wounds on the left leg and right wrist (right). The donor and recipient sites were then dressed with Betadine-soaked burns dressings and bandaged, only to be exposed days later (5 days for recipient site, 10 for the donor site).

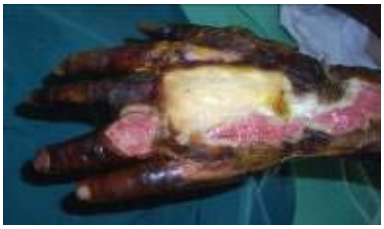
5 days post-operative exposure of SSG site. I had the pleasure of viewing the results the day before I was due to leave Bulawayo! The skin graft took very well and the patient, whom I became extremely fond of, made a good recovery. Plans for an elective tendon reconstruction were underway when I finished my time at UBH.





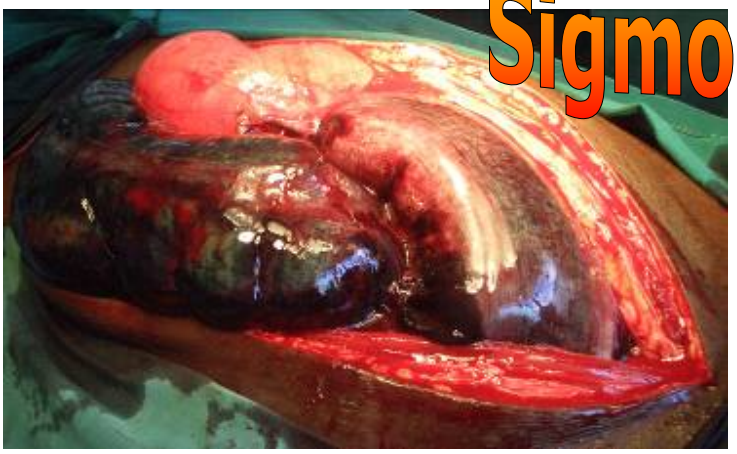
Above: I snapped this one with an outstretch arm and caught Admire winking cheekily! He was my favourite patient on the paediatric ward – always bright and with a big smile on his face. He seemed to cope with his disabling injuries very well.

Above: ADMIRE (I love these African names! There were others like Blessing, Beauty, Precious, Prudence, Ambition, Seawater, Pointment, Preciate, Brilliant…) post-surgery on the paediatric ward. When he saw me on the ward round, he promptly stuck the ECG tabs on his forehead and grinned big style!

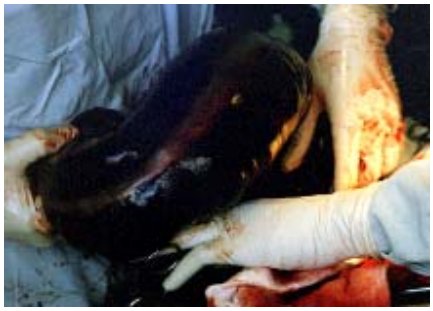


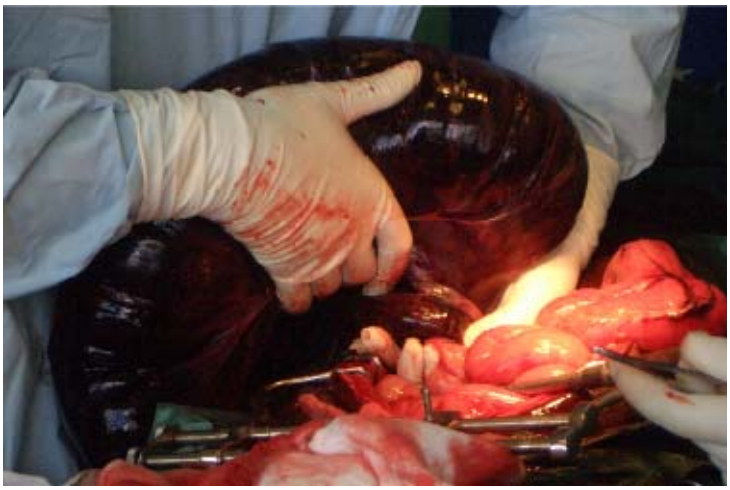
More gruesome burns. Above: Another late presentation of a circumferential burn in an epileptic patient. They typically have a fit around a flickering fire, get burnt and are left by their friends who are afraid of 'contracting' epilepsy.

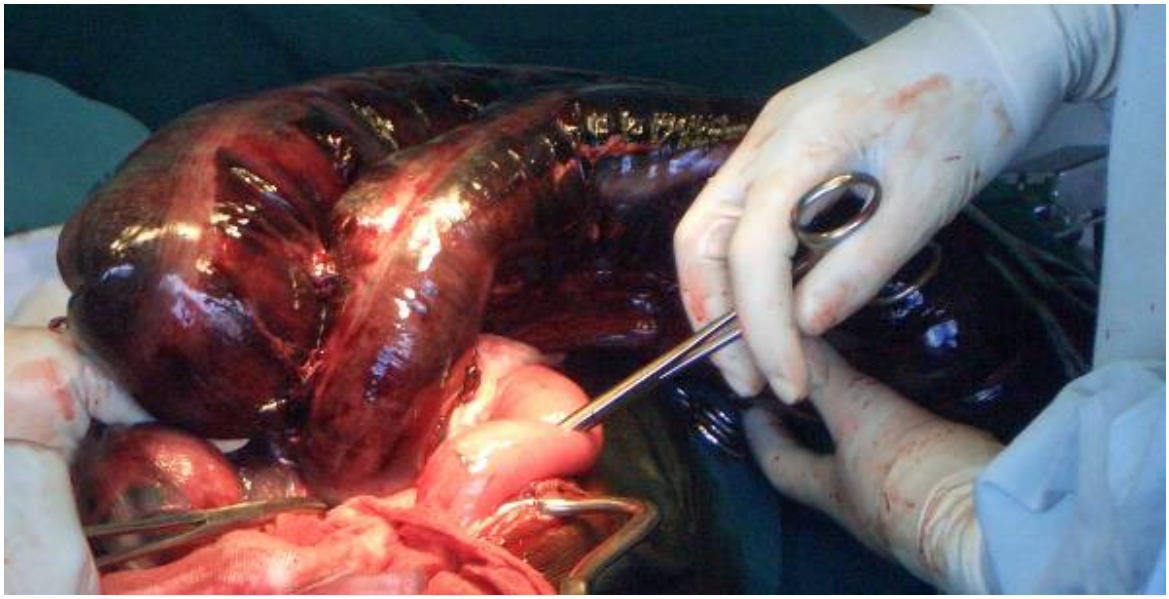
Sigmoid Volvulus



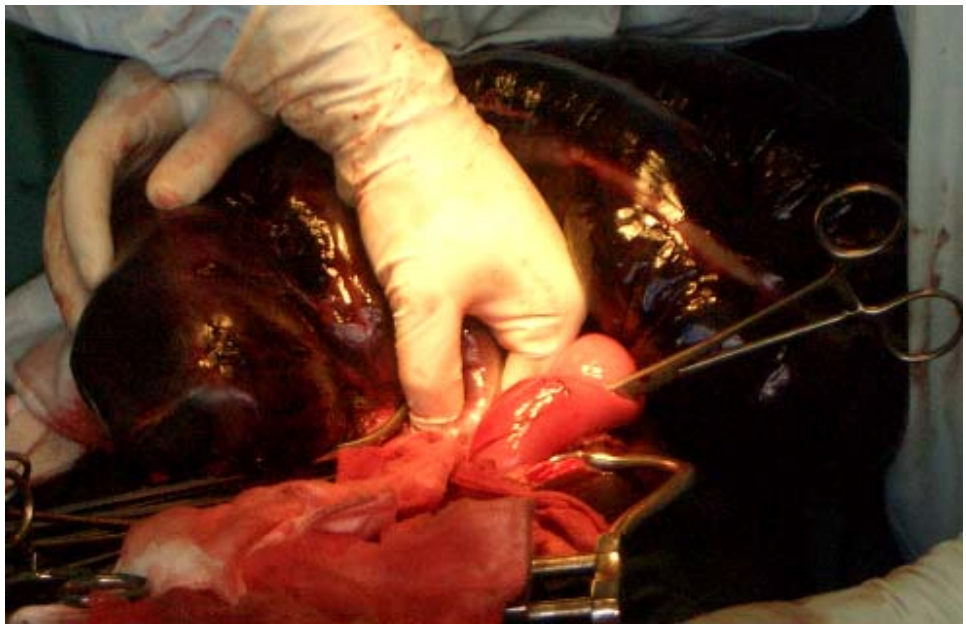
This middle-aged gentleman presented with features of acute GI obstruction and a huge, tight, tympanitic abdomen, with associated fever, rigors and dyspnoea. Once the abdomen was opened, the surgeons were presented with this (left).



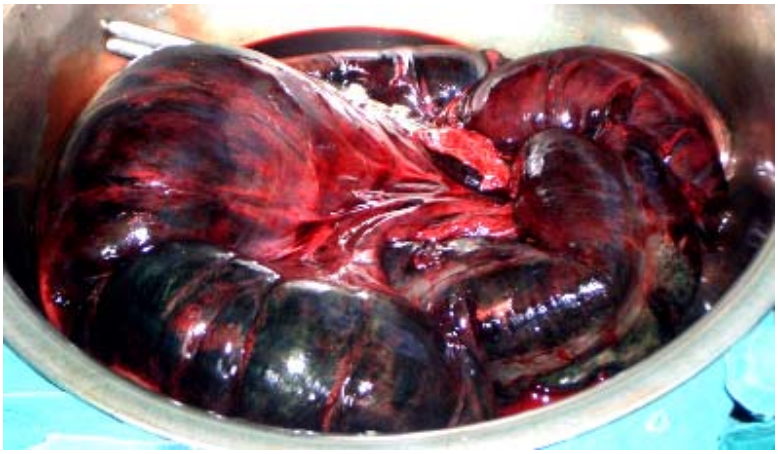




There was much wrestling with the python-like gangrenous sigmoid colon, which threatened to rupture whilst being handled. Ballooning out of the incision almost once it was made, it took several precarious manoeuvres before finally settling the diseased bowel into a position where bowel clamps could be applied appropriately.



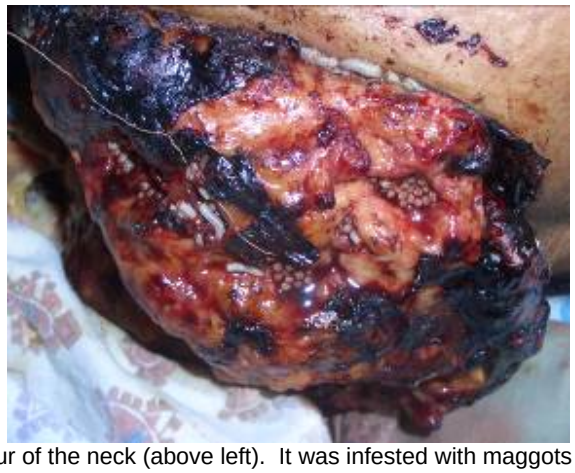
The root of the volvulus finally identified amongst the mass of writhing black colon. The clamps were then repositioned for resection of the diseased segment of bowel.



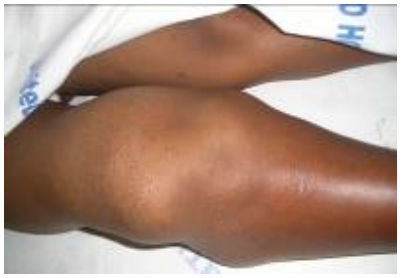
The resected culprit in a pool of dark blood still with clamps on – the smell was just incredible! The patient made a good recovery thereafter.

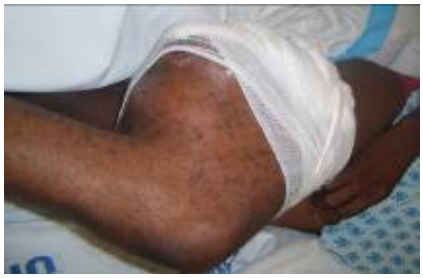
The acute surgical cases of the previous few pages are typical of the admissions through casualty in UBH. The spread of surgical disease presenting to the OPD are more chronic-type, slower-progressing pathology that would make up the bulk of our elective operating lists. I was allowed to examine patients in clinic and present my findings examination-style which was a great learning experience. The pictures below illustrate some of the surgical disease encountered in the UBH OPD.

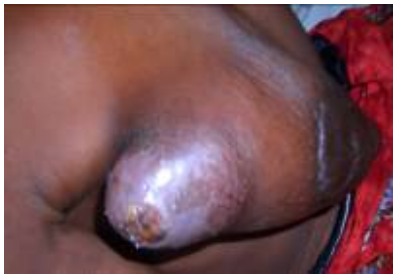
Tumours



This middle aged lady presented with a huge fungating tumour of the neck (above left). It was infested with maggots (worm-like white parasites – above right) and numerous clusters of white larvae.





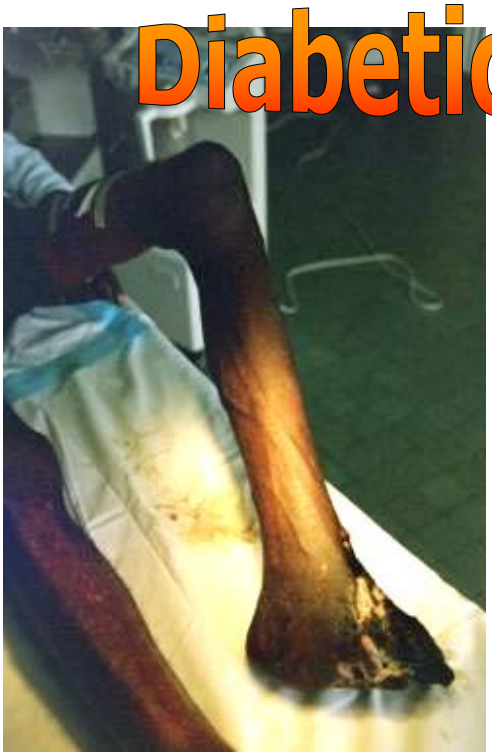


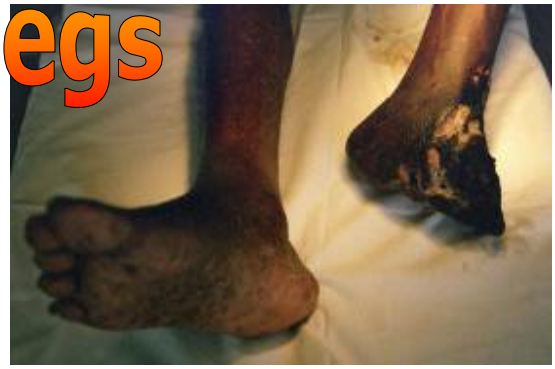
A large tumour infiltrating the right knee joint (above left), fungating tumours of the right breast and posterior right thigh (above middle and right). Histological diagnoses were extremely difficult to obtain due to lack of facilities at UBH, and CT/ MRI scanning was not available at UBH, thus limiting the staging and grading of such tumours. The breast lesion was clearly advanced stage malignancy; the patient had fixed, firm lymphadenopathy and bony metastases of the skull.

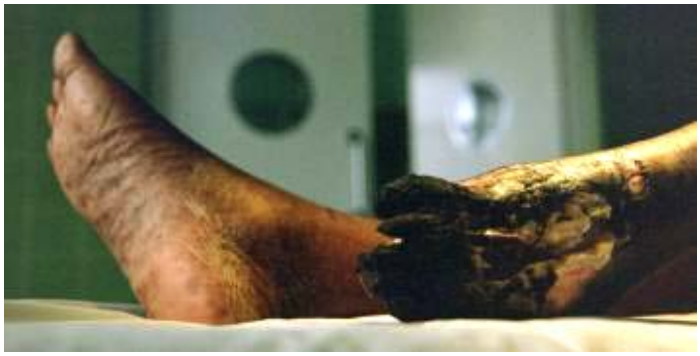
Snake bites

A 5 y/o boy who got bitten by a puff adder on the right hand characterized by marked oedema and tissue destruction – made worse by a venous tourniquet that was tied around his forearm shortly after. Tissue necrosis 2^{o} to compartment syndrome is a common complication of bites with a tourniquet applied. His right thumb and index finger might have still been viable.

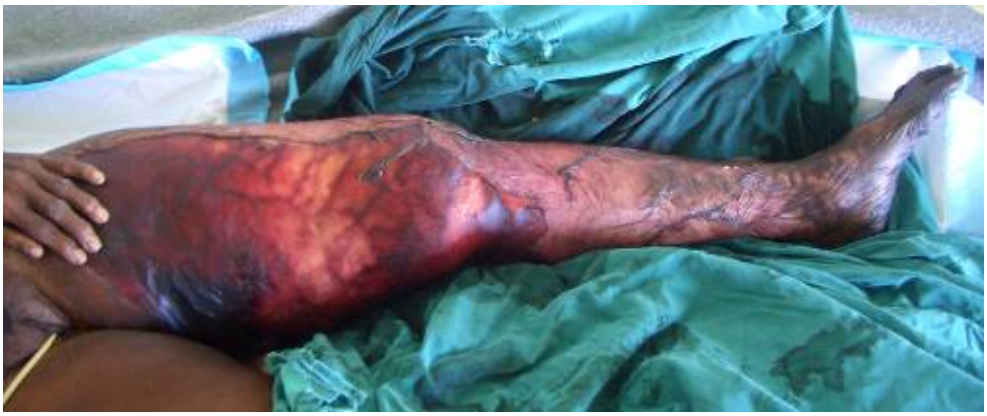
Diabetic legs





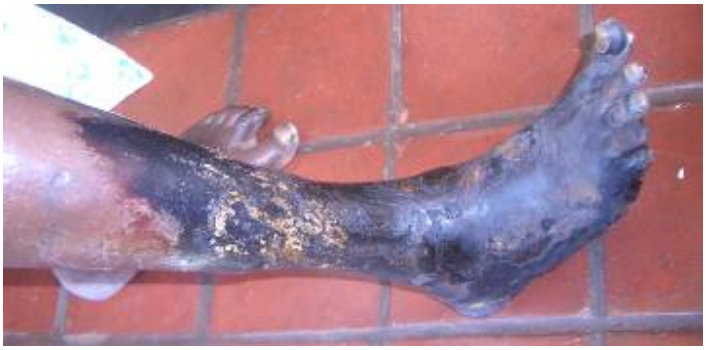


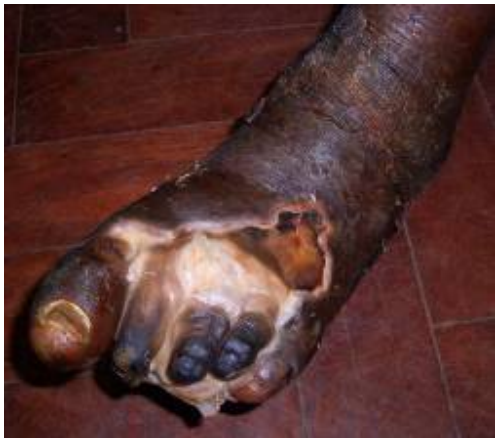
This elderly gentleman had a traumatic wound to his left foot which was neglected and became gangrenous. He had a successful below-knee amputation with a posterior flap. He was also a known diabetic.

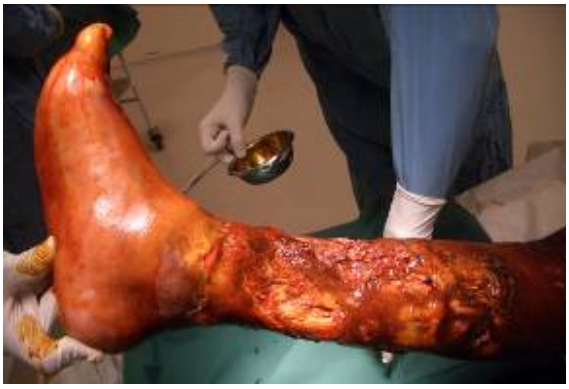


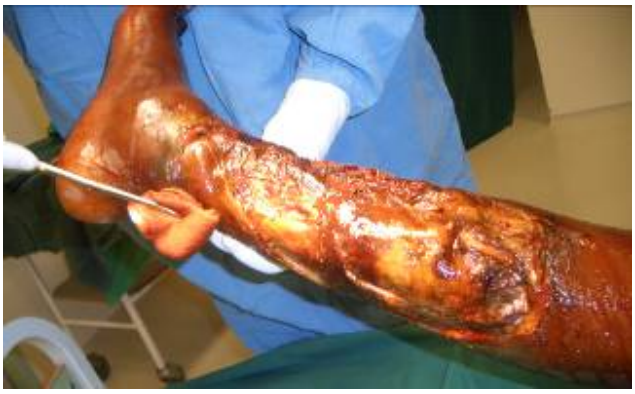
Left: This left gangrenous leg belonged to an 81 year old diabetic woman who unfortunately died the day after her admission. She was surprisingly well with it. Below: another diabetic foot, chronic ulceration turning gangrenous. The large toe might have still been viable.

Below: A small traumatic wound to middle aged diabetic woman's right leg resulted in the development of gangrene involving half the lower leg. She had to have a below-knee amputation.

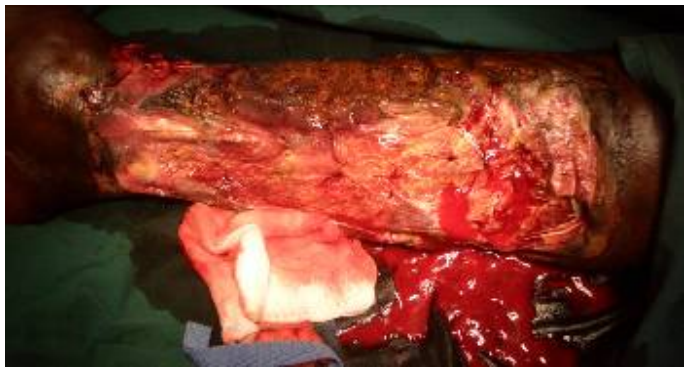








Above and right: an infected diabetic leg with traditional medicine rubbed into the wound. This middle aged patient presented with severe metabolic acidosis and absent foot pulses on the infected leg. An emergency debridement was performed (right).

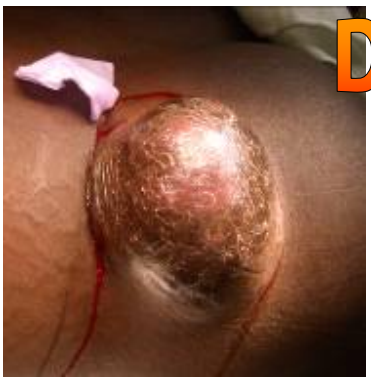


The unfortunate effects of 'mooti' (traditional medicine) application are very frequently encountered in surgery. This patient had poorly controlled diabetes complicated by an infected wound on right leg, which landed him on ITU with a severe metabolic acidosis. He had mooti rubbed into the wound and it had a black and tarry appearance. There was no sign of viable tissue down to the tibia on debridement, which was carried out under spinal anaesthesia. The patient declined a below-knee amputation and subsequently died the following day. There is usually little that can be done to save infected limbs which have been 'mootied' to such an extent, similarly with cases of 'mooti' ingestion presenting with intestinal obstruction. The difficulties traditional healers pose to healthcare can be formidable at times and a complex problem to solve as it is so engrained in local culture and health beliefs.

There is considerable need for a community-based primary healthcare programme where most of the population can access health facilities earlier on in their disease process. Many diabetic complications encountered in both the practice of medicine and surgery in Bulawayo could be screened for and prevented from further progression, as well as follow-up for malignant disease, thus improving the prognosis of the patient. Minor surgical cases could be managed from satellite clinics in the more rural areas will relieve the burden on overworked district hospitals, which could deliver higher quality healthcare to those with more serious conditions. Health education is also of great importance in improving the general healthcare of the population and must be an integral part of healthcare delivery in the community; the MSF ARV scheme being a successful model of community-based healthcare provision. A primary healthcare service as such would no doubt require funding and expertise, both of which appear to be deficient in Zimbabwe.

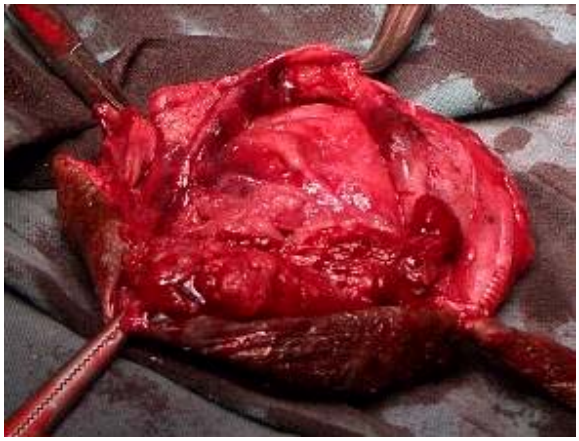
The Mater Dei hospital was on the whole better organized and equipped for surgery. Problems encountered at UBH such as a shortage of clean surgical gowns and instruments when the autoclave was not working, disrupted operating lists frequently, resulting in the postponement of several operations, some of which were quite urgent (like SSGs for burns), were non-existent in Mater Dei.

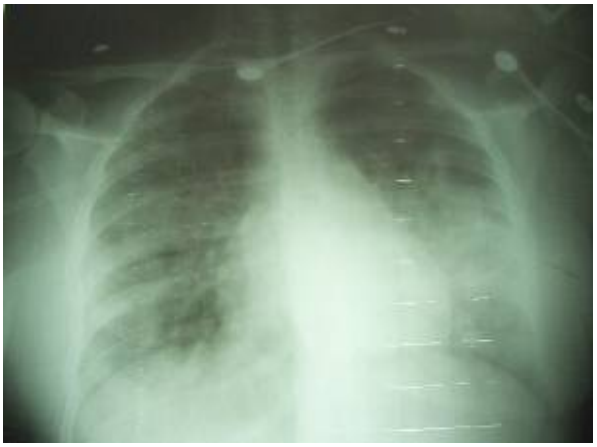
There were three operating suites there which were allocated 'clean' and 'dirty' depending on the type of surgery being performed. There was also the option of meals being provided at a small cost for the surgeons – a welcome treat when lists were long and time, short. The operating lists were mostly elective surgery but the spread of surgical cases were as varied and interesting as in UBH. Being on-call for Mater Dei every other day brought in its own share of emergency work, some of which had confounding post-operative complications.

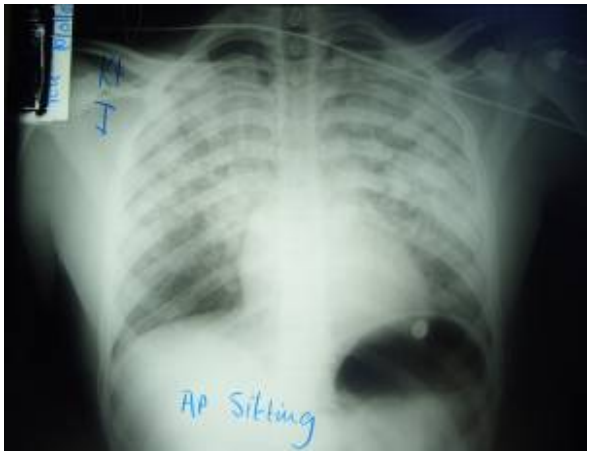


Diagnostic dilemmas

This young woman had a huge non-tender round lump (left) on her right posterior flank just above the buttocks. We were all trying to second guess what it actually was – probably of soft tissue origin. We found that it was full of blood (below, left) and had some sort of sac (below, right). The sac was excised and the wound sutured. Histology would have solved the mystery.







Above: these X-rays belong to two 16 year olds who had uncomplicated appendisectomies just a few days apart. Both developed respiratory distress post-operatively and had to be admitted into ICU. One was a heavy smoker (left) but not the other. Allergy to Propofol was suspected in the other (right).

Big Heads

A CASE ANALYSIS

There are several opportunities for medical and surgical research whilst undertaking an elective in Zimbabwe. My original project was in the field of surgery, measuring the compartment pressures in a snake-bitten limb on which a venous tourniquet had been applied – a fairly common surgical presentation – and subsequently using those values to predict the development of compartment syndrome in the limb which predisposes it to tissue necrosis necessitating an amputation. Unfortunately, the profound lack of patients meeting the criteria for such research during the time of my elective compelled a change of project focus. As a result, a case analysis of interesting and complex head pathology encountered in the United Bulawayo and Mater Dei hospitals is presented.

CASE 1

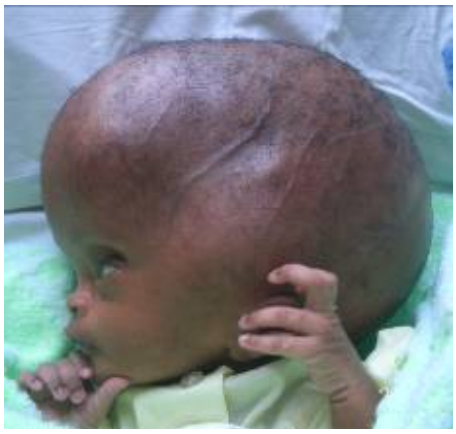
History:
Antenatally diagnosed congenital hydrocephalus due to stenosis of the aqueduct of Sylvius.
Referral to the surgical team at 2 weeks of age.

Clinical presentation:
Macrocephaly
Tense, bulging fontanelles
Sun-setting eyes
No other neurological abnormalities – feeding well

Surgical intervention:
Drainage & insertion of Vetriculoperitoneal (VP) shunt

Operative findings/ problems:
Cerebrospinal fluid (CSF) leakage ++
Difficulty with VP shunt insertion – brittle skull, sutures do not hold
Skull – bag of plates once drained (below).

Post-operative result:
VP shunt in situ (prominent subcutaneous tube on the left side of the head partially covered by dressing).



Post-operative complications:
Streptococcal meningitis treated successfully with Ceftriaxone.

Prognosis:
Good.

Comment: Stenosis of the aqueduct of Sylvius which drains CSF is the most common structural malformation causing congenital hydrocephalus, whether primary, or secondary to inflammation. About 63% possess normal psychological performance, correlating strongly with early shunt implantation. Most patients reviewed required at least one shunt revision (about 71%); no association was found between the shunt revision rate and psychological performance. [1]

CASE 2

History:
Morning headaches
Increasing clumsiness for a few months
Vomiting ++
Referred by Neurosurgeon in Harare for insertion of VP shunt.

Significant past medical history (PMHx):
Meningitis in Jan 2005 complicated by hydrocephalus.

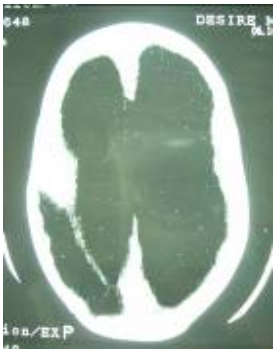
Clinical presentation:
Macrocephaly
Signs of cerebellar disease

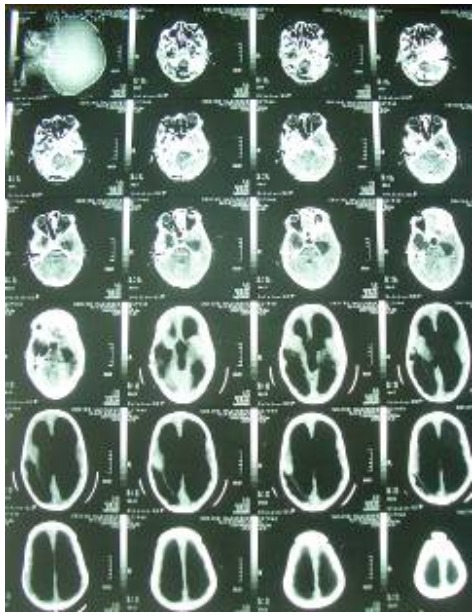
- Finger-nose ataxia + pass pointing
- Dysdiadochokinesis
- Heel-shin ataxia
- Ataxic gait
- Horizontal nystagmus

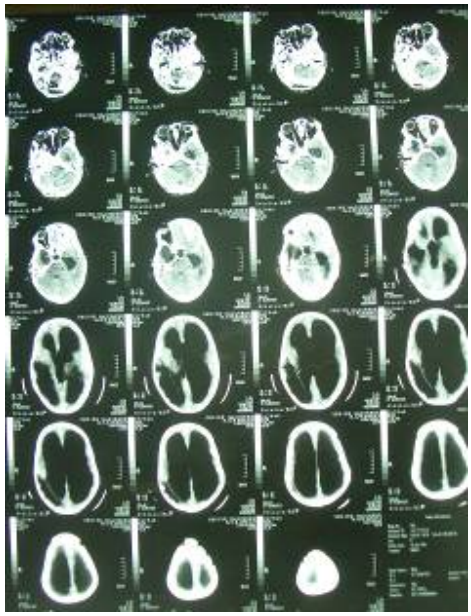
Weakness

Imaging:
Gross hydrocephalus on CT scan of head.

The pre-operative CT scan shows significant dilatation of the ventricles (black spaces) with cerebral atrophy.







Surgical intervention:
Insertion of VP shunt (without adjustable pressure valve).

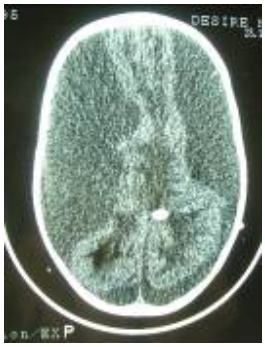
Post-operative result:
Some neurological recovery.

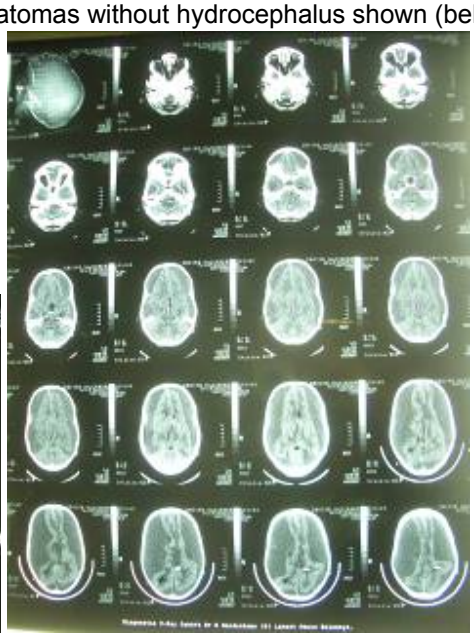
Post-operative complications:
Few weeks later – same symptoms develop.

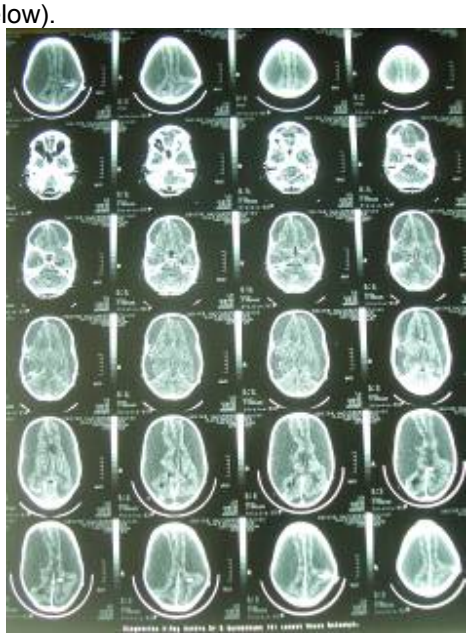
CASE 2 continued.

Imaging:
Repeat CT scan of head.
Bilateral subdural haematomas without hydrocephalus shown (below).

Areas of medium grey density surrounding the lighter grey represent extensive subdural collections of blood with compression of brain and ventricular system (right & below). VP shunt in situ (white speck inset below).







Surgical intervention:
Evacuation of subdural haematoma with bilateral drains in situ.

Post-operative result:
Initial improvement.

Post-operative complications:
Intermittently febrile 2 weeks later.
Cultured drain tips – *Staphylococcus Aureus.*
Subsequently develops severe frontal headaches, visual disturbance & diplopia, then total loss of vision.

Imaging:
Urgent CT scan of head showing a recurrence of subdural haematomas. No localized collections seen.

Prognosis:
Poor. The child returned home with NG feeding tube and a very depressed conscious level.

Comment: The importance of early diagnosis and management in post-meningitis hydrocephalus cannot be overemphasized here. The traumatic stretching of bridging veins between the cortical surfaces and the dural sinus, secondary to ventricular decompression via VP shunt, would be the cause of the extensive subdural bleeding, further exacerbated by the severe degree of hydrocephalus and relatively lesser volume of cortical brain. The recurrence of the subdural haemorrhage confirms the comparative lack of cortical matter to occupy decompressed intracranial space and highlights the difficulty in the management of this complication – the Harare neurosurgeon inserted bilateral subdural-peritoneal shunts but without improvement in neurological status.

The initial post-operative febrile event might have been indicative of an infected VP shunt or subdural haematoma, or the formation of an intracranial abscess; the latter, more in line with the development of headaches and visual loss. However, these diagnoses are excluded in light of an unchanged CT scan of the head. A valve shunt may have prevented sudden decompression of the hydrocephalus, and allowed gradual cerebral expansion without bleeding.

Infection is the most common acquired cause of hydrocephalus in children (about 36%). Approximately 30% required shunt revision (removal and replacement) due to infection in the same cohort of children. Post-infective hydrocephalus was also shown to be a major cause of delayed milestones, leading to mental impairment. [2]

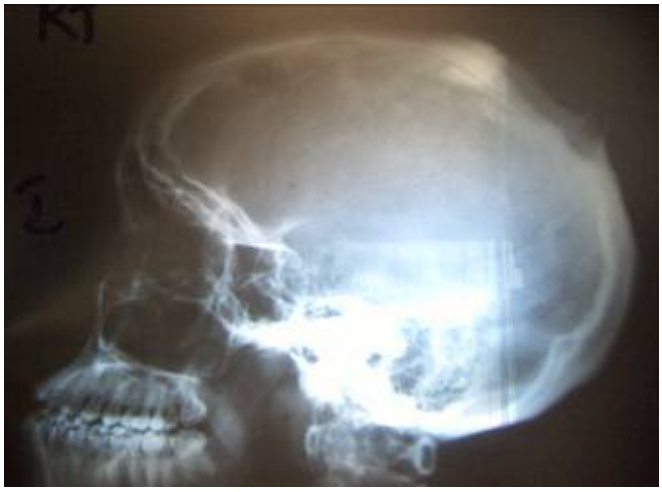
CASE 3

This patient was from the rural areas further out from Bulawayo.

Significant PMHx:
Local excision of left acral melanoma in 2004.
No follow-up.

Presentation:
Large occipital tumour about the size of an average-sized melon.
Throbbing headaches.
Wore head scarf to cover ~ 3 months.
Recurrence of melanoma – acral melanoma (left foot, below left).
6cm by 5cm with frog spawn appearance and was thickened, hard and indurated.
Firm, partially fixed inguinal lymphadenopathy on the left side.

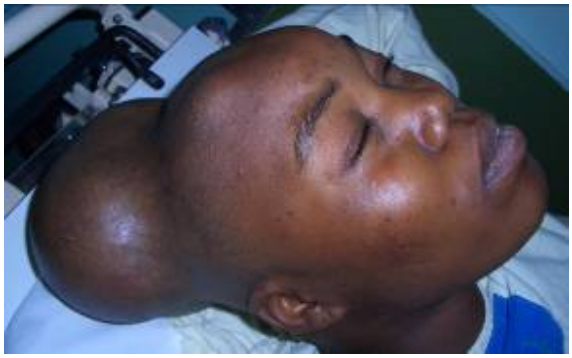
Imaging:
Lateral skull X-ray (below right) showed an area of bony erosion occiput with a sclerotic reaction anteriorly, consistent with metastatic bone disease.
CXR showed cannonball secondaries (not shown here).



Surgical interventions:
Left acral melanoma excision with split skin graft.
Block dissection of left inguinal lymph nodes.
2 weeks later, excision of head lump.

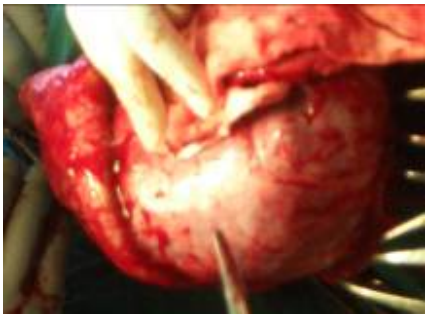
Rationale: improvement in ability to walk; excision of nodes to improve body habitus (and also ease in walking), excision of head lump as partially cosmetic, partially tumour bulk clearance!

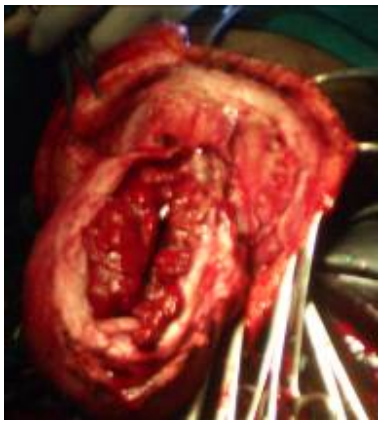
Operative findings/ problems:
Large haematoma occupying volume of head lump.
Erosion of the skull and meninges by metastatic tumour tissue.

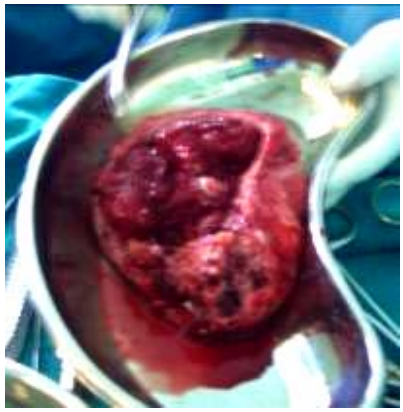


Above: discrete lump about 5 cm above the right eyebrow suggest another area of metastases.

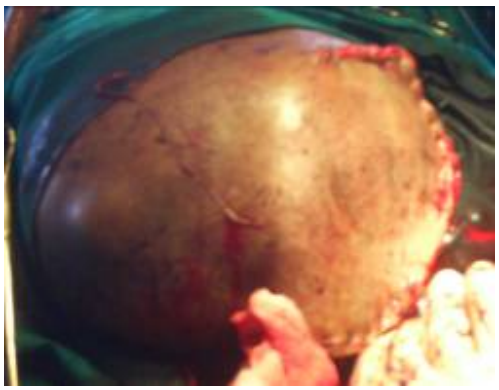
CASE 3 continued.

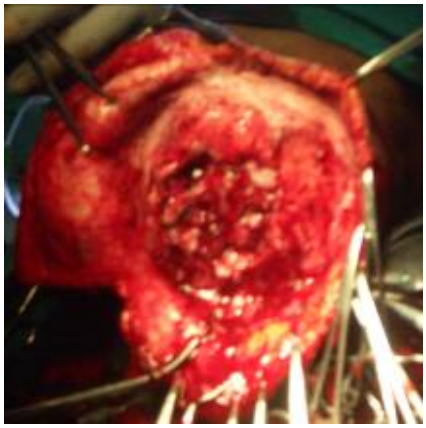






Clockwise from the top: peeling back the scalp to expose the discrete lump. Altered clotted blood occupied most of the internal volume of the lump. Excision of the lump reveals skull origins. Area of skull destruction shown (far right) by metastatic lesion. Scalp flap to close wound.





Post-operative result:
Good recovery.

Post-operative complications:
OPD review – pain in right hip + antalgic gait.

Imaging:
Pelvic X-ray shows bony metastases (not shown here).

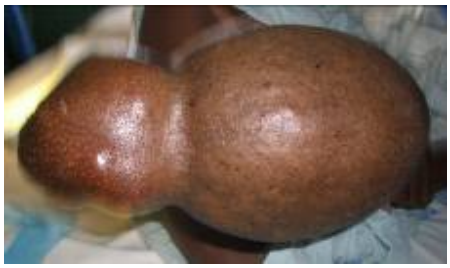
Prognosis:
Poor.

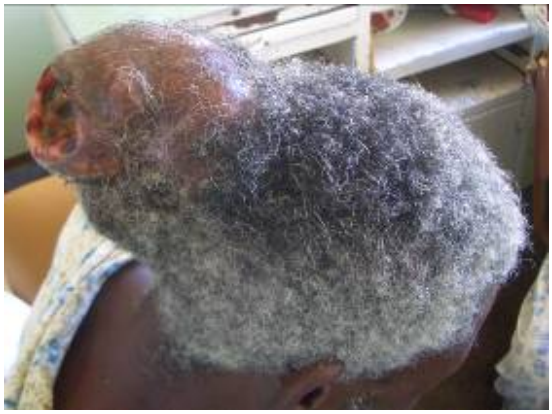
Comment: This patient was surprisingly well with such widespread metastatic disease. There were no complaints of weight loss, appetite loss, pain or malaise, as one would expect from advanced malignancy as such – a Stage 4 melanoma (clinically > 4mm in thickness, > 4 positive lymph nodes and distant spread, T4N3M1 according to the TMN staging). Malignant melanomas are not known to have a particular pattern of spread but metastases to brain and bone have been well described. The current figures indicate a 41% overall one-year survival; 9% at five years and a 6% survival chance at 10 years. [3]

Ideally, this condition requires a multidisciplinary approach to management, with involvement of radiologists, oncologists, specialist nurses and surgeons – an initiative not yet established in Zimbabwe. High-dose Interferon α-2a is the mainstay of treatment for advanced (stage 3/4) malignant melanoma, with a 33% reduction in the likelihood of relapse and a 28% reduction in the likelihood of death in randomized multi-centre studies compared to other adjuvant therapy at 2.1 years of follow-up. The significant distant disease-free survival showed by a previous similar study (at 12.6 years) suggests a curative effect. This treatment, however, was unavailable in Zimbabwe; the patient would have to buy it outside the country with foreign exchange at a great cost. [4]

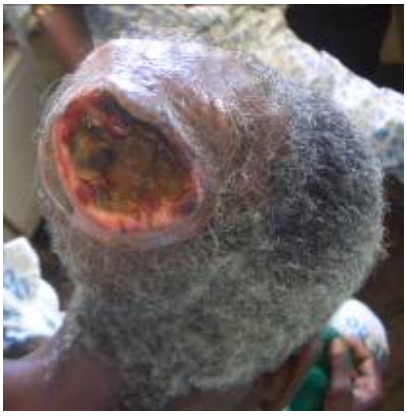
CASE 4

OPD admission.

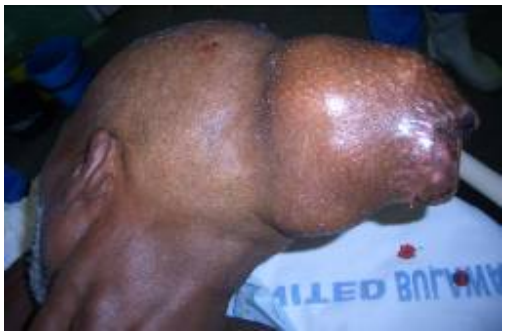




Presentation:
Occipital growth on head.
Firm, bumpy big lump. Exuding pus, fungating.
Almost pedunculated, not indentable or fluctuant.

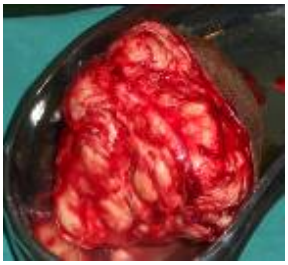


Differential diagnosis:
Pott's puffy tumour (PPT) – skull osteomyelitis + extradural abscess)

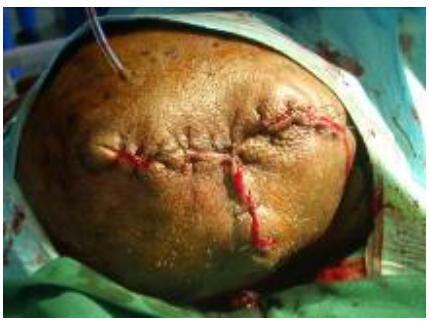


Imaging:
Skull X-ray was normal (thus excluding PPT).

Surgical intervention:
Excision of head lump with drain in situ.
(anticlockwise from far right)



Operative findings/ problems:
Well-demarcated tumour with sepsis.
Skull & periosteum were intact.



Operative result:
One satisfied patient (far right).

Clinical diagnosis:
Large hidradenoma (tumour of the sweat glands) 2^{o} to recurrent hidradenitis suppurativa.

Prognosis:
Excellent.

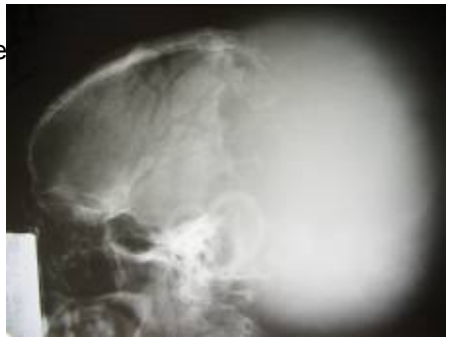
Comment: This rare primary sweat gland tumour is largely benign in sharp contrast to the last case which had a similar cephalic presentation. It has a predilection for the head, trunk and upper extremities and is typically partly cystic and partly solid, often presenting as slow-growing asymptomatic nodules, with or without central ulceration. Surgical excision is the treatment if choice. The prognosis of its malignant counterpart is generally poor with a 50% local recurrence rate despite aggressive surgical management and > 60% of patients have metastatic disease within the first 2 years. The five-year survival rate is less than 30%. [5]

CASE 5

OPD admission.

Presentation:
Posterior head swelling involving posterior half of head, extending down to level of C2-3.
Soft and compressible with widespread thrills and bruits.
No neurological impairment.
Small goitre; clinically euthyroid and no breast lumps felt.

Imaging:
Skull X-ray shows extensive posterior skull erosion and large soft tissue mass associated.



Surgical intervention:
None.

Comment: This was an exceedingly vascular tumour and the differential diagnoses were that of a meningioma or a metastatic bone tumour, probably involving the main venous sinuses of the head. The possible primary sites are thyroid, breast, bronchus or myelomatosis. Both breasts were clinically normal and so was the CXR. The appearance was unlike that of punched-out myelomatous lesions and the urine samples were Bence-Jones protein negative. Biopsy was considered an unsafe option as a result of the excessive vascularity. Fine needle aspiration was not possible for the lack of a pathologist in Bulawayo.

The patient was commenced on Thyroxine on the assumption that if of papillary type thyroid carcinoma origin, it might be reduced by suppressing thyroid stimulating hormone (TSH). Surgical excision was not an option because of the size, likelihood of extreme blood loss, and inevitability of recurrence. She was lost to follow-up.

The efficacy of Thyroxine suppressive therapy is well-documented in some patients with solitary non-toxic thyroid nodules, with a reduction of nodule size by more than 50% in the 37% of responders. However, there is a lack of evidence regarding its usage and efficacy in thyroid bone metastases. [6]

Conclusions

Even from within this small group of patients, there is a wide variety of head pathology, which differs not only in their associated features, but management and prognosis as well. Some other causes of enlarged heads encountered, not present in this selection, include premature fusion of sutures – brachicephaly and osteosarcoma.

Clinical diagnoses can often be made, especially if the pathology is advanced enough, without the use of CT scanning and more advanced investigative tools. This case study also demonstrates the possibility of performing effective intervention with relatively limited resources.

Prognostic outcome in advanced malignancy would be much improved if there was better access to healthcare across Zimbabwe, especially in the more rural areas. A community-based primary healthcare programme where rural populations can better access health facilities is vital for screening and following up of malignant disease.

NB: all scalp operations bleed profusely!

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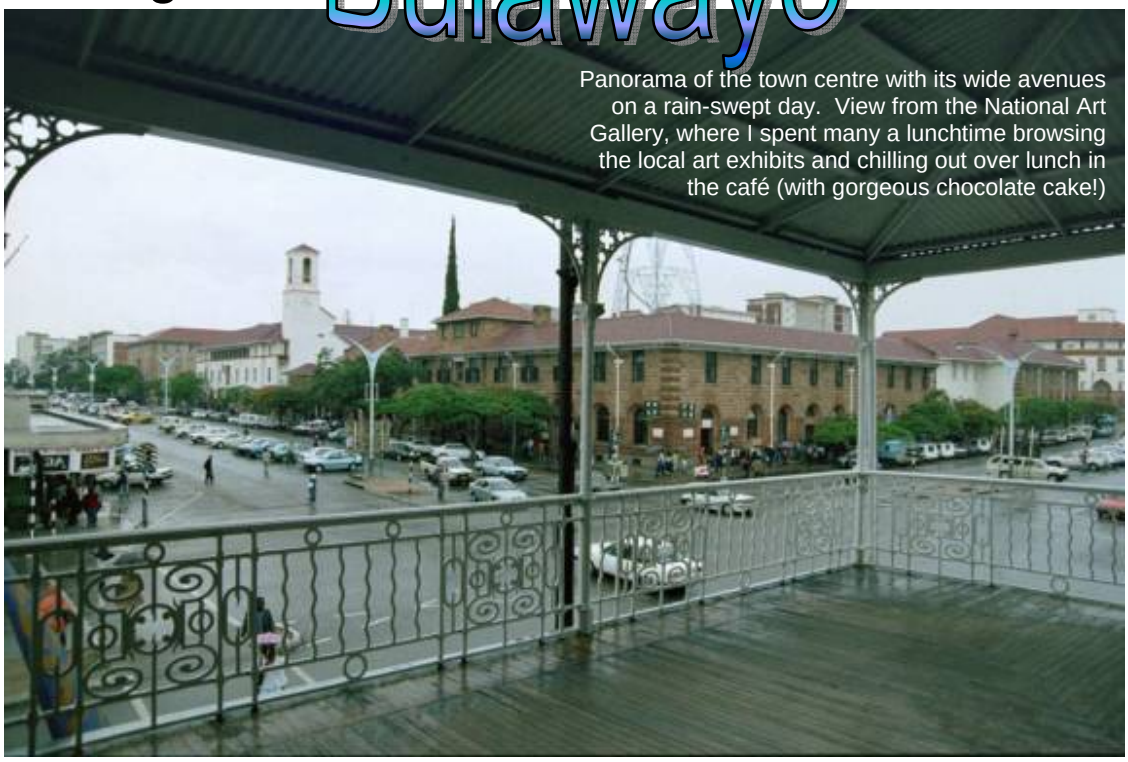
Living in Bulawayo



Panorama of the town centre with its wide avenues on a rain-swept day. View from the National Art Gallery, where I spent many a lunchtime browsing the local art exhibits and chilling out over lunch in the café (with gorgeous chocolate cake!)

Bulawayo is a colourful, intriguing city with a relaxed atmosphere; its streets lined with red flame trees and beautifully preserved British colonial buildings (below), a sprawling low-rise city centre with big skies. Celebrated for its Art Gallery, Natural History Museum and theatre, there is usually a myriad of events taking place to cater for all interests and personalities!

Far right: the main Bulawayo Postal Service building. Right: City Hall building in the centre of City Hall square where local vendors selling crafts and other handmade wares line the street, heckling passers-by to view their goods.

High Court of Bulawayo

The city centre has a grid-like organization which makes navigation straightforward, and is compact enough to get to most places on foot. Public transport in Bulawayo mainly consists of minibuses called Combies (or commuter buses) or ETs (emergency transport) which leave from 2 designated bus terminuses, one in the centre of the city and the other towards the western limits. These ETs are usually 12 seaters which only leave when packed full, typically with about 16 people, arms and heads dangling out of open windows! The bus routes extend into the suburbs around the city centre, as well as some further out towns and villages, and are always open to negotiation at a small extra fare.

I snapped this shot on the road into the city centre from Mpilo hospital, my head and shoulders hanging out of the ET back window. It was a typical bumpy ride; the driver swerving to avoid potholes in the road, myself squashed against the side of the bus with a large Africa Mama next to me! A lovely rendition of the big Bulawayo skies.

The city has many amenities which are operational six days of the week (most are closed on Sundays). There are numerous big and small supermarkets, cafes, bakeries and takeaways which are generally affordable and good value for money. On average, a hot lunch of sadza (local staple – a cross between mash potato and cheesecake in texture but savoury like rice), stewed meat and vegetables would cost about ZW $ 90, 000, equivalent to about US $ 0.90. Most fresh and preserved groceries are available in supermarkets though there is a serious lack of good chocolate! Bulawayo has its own share of fast-food joints – Chicken Inn has great burgers and Creamy Inn, excellent twirly ice cream cones which can be dipped in chocolate, a refreshing treat on a baking hot day! (about US $ 0.50 for a large cone).

Internet cafes with international calling services are plentiful (some open late into the evening) as are postal services and travel agents – Gemsbok Safaris come highly recommended. The two reliable photography shops, Photo Inn and the Camera Centre, stock some varieties of film and camera equipment. However, they do not cater for digital video/ photography needs and so it is best to come well-prepared. Photographic services are generally quite pricey, film development back in the UK is the recommended option. Obtaining a Zimbabwean SIM card for the use of local mobile phone lines is extremely difficult with the limited number of lines available, yet there are three reliable networks which are best utilized by an existing mobile line borrowed from a friend! Local and some international mobile phone calls are relatively cheap and pay-as-you-go credit is easily available from vendors at street corners in the city centre.

Money changing is tricky in Zimbabwe as a result of the chronic shortage of foreign exchange (forex). Bank rates are exorbitant but black market money changing is risky though of better value. Currently, the post office offers the best official rates but the better option would be to change money through trusted friends or colleagues. US dollars will go a long way, British pounds and Euros are less sought-after forex by the locals. The ongoing economic crisis in Zimbabwe has meant huge inflation; it is not unusual to be seen carrying plastic bags containing wads of Zimbabwean dollars around town where most transactions require local currency.

Right: The largest denomination of local currency when I was in Zimbabwe. The rate was about ZW $ 100, 000 to US $ 1.00 so it was usual for me to have a fat wad of two million ZWD in my bag – an amount not really large enough to be worth stealing!

My RECOMMENDATIONS in Bulawayo

The National Gallery

A delightful art gallery with two floors of exhibits by talented local artists and sculptors, young and old. The entrance fee is about US $ 0.20, cheaper still for students. There is a cosy café serving good hot food and desserts opening onto a grassy courtyard framed by Zimbabwean sculptures. Off the courtyard are studios where one can watch resident artists working on batiks, paintings and recycled metal sculptures. Artwork can be purchased directly from the artisans or from a small shop within the gallery.

Left: Impression of the courtyard from the café in the art gallery. Below: guzzling superb chocolate cake, one of the many delicious desserts on the menu!

Centenary and Central Parks

Separating the bustling city centre from the more up-market suburbs, this vast green of bushland, shady lawns, benches and small gardens provide a calming picnic lunch venue. It also houses the Museum of Natural History and Bulawayo Theatre within its expansive grounds. Plays, concerts and dance performances often take place in the theatres of Bulawayo (Amakhosi theatre is another just further out of town towards Mpilo hospital), featuring high-quality local performers and some from the regional and international arts scene. Some fantastic operatic concerts are also occasionally performed at the Zimbabwe Academy of Music, located a short distance outside the city centre – best to verify with the local tourist information bureau in town. Bulawayo has its share of sports bars, pubs, live jazz bars and clubs playing local, regional and house mixes.

Craft shopping

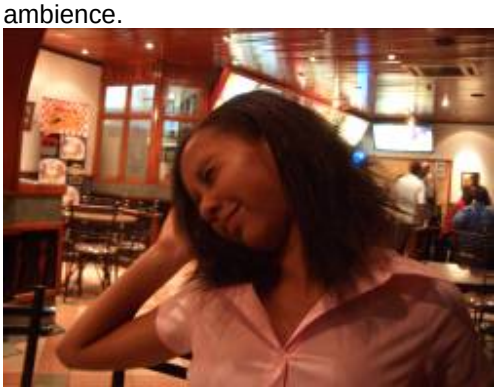
There are a number of gorgeous craft shops in Bulawayo which sell local craft, often with a charitable focus. Amongst those are the Jairos Jiri Craft Shop and Mthwakazi Crafts. Fazak gift centre and Induna Arts also provide a fantastic range of beaded, basket and batik works, great for affordable souvenirs made by local Zimbabweans!

Right: a game of bottle-cap chess before the bottle caps were used in a sculpture!

Right: a potter engrossed in his work at the Mzilikazi craft centre where one can watch various artisans at work.

Culinary hot-spots

There are some great eateries in Bulawayo where gastronomic quality is well-complimented by the ambience.



Right: **Haefeli's Swiss bakery** and pizzeria is great for a quick coffee or milkshake; also good for pizza, pastries and ice cream! It has a young atmosphere and was a regular hang-out for us after church services! Antoinette Cotton is caught on camera in mid-stretch after a long day. She introduced me to most of the craft shops in town.

New Orleans is an idyllic jazz restaurant with a good range of fresh meats, including fish from Lake Kariba in northwest Zimbabwe! Sitting second from the right, I enjoyed a quiet dinner with friends the week before leaving Zimbabwe. Prices here are slightly higher than most restaurants in the city centre.

the River Cafe was my favourite place in Bulawayo. It is up a dirt road off a street in town, nestled in a quiet green spot with bubbling brook and resident craft gallery; it has superb salads, hot meals and milkshakes! Below are some memories from hanging out at the River Café.

Clockwise from left: Nick, Gordon, myself and Alvero. These chaps from church became superb friends of mine in Zimbabwe. Mark (far right), another good mate, originally from Egypt. We ate so much that day at the café – our last meal together before I left Zimbabwe.

HomeLiFe in Bulawayo

I had the privilege of calling this little cottage my own for the two months I stayed with Prof Cotton and his family. It comprised a little circular lounge, twin beds and ensuite bathroom. There were 2 other cottages on his residence, apart from the main house where we had evening meals together. I had the choice of socializing with the family in the main house or enjoying some quiet time on my own in Ixhiba cottage, meaning 'young person's' cottage.

Prof and Mrs Cotton adopted me into their family during my stay in Zimbabwe. There were about ten to twelve people (various extended family, housekeepers and gardeners) living in their home at any one time and so I was never alone! Located deep in suburbs about ten kilometers from Bulawayo city centre, it was a haven of peace and a community in its own right. Sprawling gardens beautifully landscaped with winding stone paths and shady trees, there were fields of corn being grown, cows grazing for milk, a swimming pool for those hot, sweltering afternoons and a tennis court for the restless (see below). I was immersed in local Ndebele culture which I thoroughly enjoyed and participated in. Most of all, the cheer, laughter and love shared amongst the family and its guests made this cottage a home for me.

Left: Winding down in the evening - Thulani playing tennis in the setting sun. One of three cows in the background.

Below: the Cottons' swimming pool

Left: the Cotton's cows. Funny, the gardener, teaching my sister to milk a cow and posing afterwards, with a bucketful of fresh cow's milk!

Above left: Arthur Cotton playing with Tizzy, Prof Cotton fixing the Citroen Dolly (right). The vicious beasts play-fight (below). Tizzy looking crazed as she is crazy (left). Below left: can't get away from Tubbles at breakfast!

Above: Tizzy, not as adorable as she looks, always nipping and stealing slippers, lots of grief from Tizzy the tailchaser.

Below right: view through a creeping arch into the garden. Water well in the distance.

Right: Millie (corn) seeds before they were planted in the fields. Zimbabwe had excellent rains this year – the best in three years. Far right: Nonhlanhla grinning after a hard morning's work. Below: extensive millie fields behind Givemore (far left), myself and Thulani (red t-shirt). It was back-breaking work cultivating corn but the results were very rewarding – juicy millies – I had just missed the crop harvest when I left Zimbabwe.

Above: Angus (yellow t-shirt) and the boys preparing grass for cow feed.

Ncebs with Rosanne slung on her back (left). Right: Nokuthulah and Ncebs in the kitchen – the housekeepers who cheered up my mornings with their beautiful smiles.

Left: Christmas Eve party at Gordon's house – the day I learnt to play cricket! Football, Frisbee, braais (BBQs in Afrikaans) were the other highlights.

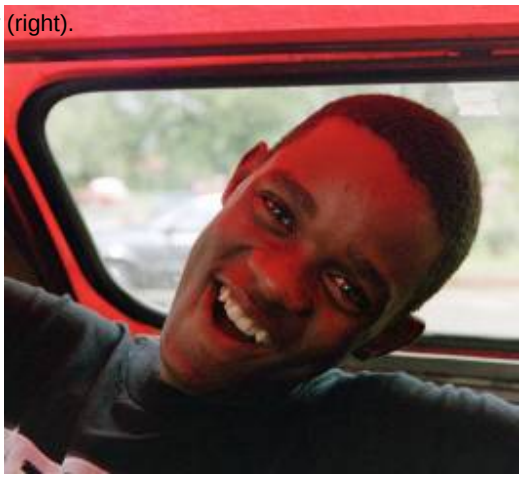
Christmas at the Cotton

A day of fellowship with extended family and friends –accompanying Zol singing on the piano (far right), acting each others' antics (above). We had freshly-slaughtered goat, a grand communal opening of presents (above left), mini-sermons and prayer, and singing and dancing African-style! A truly memorable Christmas for me.

Above: baking cookies for the New Year, Mark in the background pretending to help out. Inset: the final product – yummy chocolate chip cookies!

Above and left: Thulani being himself. Hanging out in the evenings after dinner was always a laugh!

Below: Enjoying many a car ride together! Angus grinning in Dolly (right).



The cottage next to mine (right) called Kudu, viewed from the tree I was made to climb (below)! Mark (Dr Bishay) was staying there and if he didn't answer the door, he was probably sitting up in the tree outside (you know, monkeys…).

Left: Sunset from Kudu cottage – one of many gorgeous painted skies at dusk I gazed at.

Social Life in Bulawayo

I was grateful to inherit the family's friends as my own during my stay in Zimbabwe, most of whom were either from church or work colleagues from the hospitals I had placements in. Antoinette (little Miss Cotton) invited me to her cell group (like a bible study fellowship group) from church which met weekly in the house and had may other social gatherings with the Satyanathans – doctor friends from UBH as well as the Egyptian doctor friends I got to know through Mark, the Egyptian surgical trainee SHO from UK. Below are some fond memories illustrated in pictures which I hope would speak louder than words.

The last cell group meeting was bittersweet – the group prayed over me and gave their blessing before I left the following week, then we had ice cream big style! They were a great support and encouragement to me during my time in Zimbabwe. I will miss studying the bible together, singing endless worship songs and most of all the warmth of their friendship.

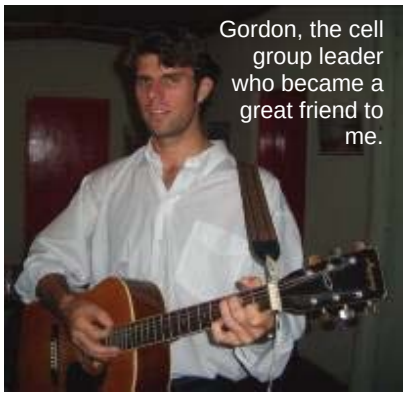
Above: Gordon and I gleefully making a start on the ice cream

Above: all conversation ceases as we savour the good life

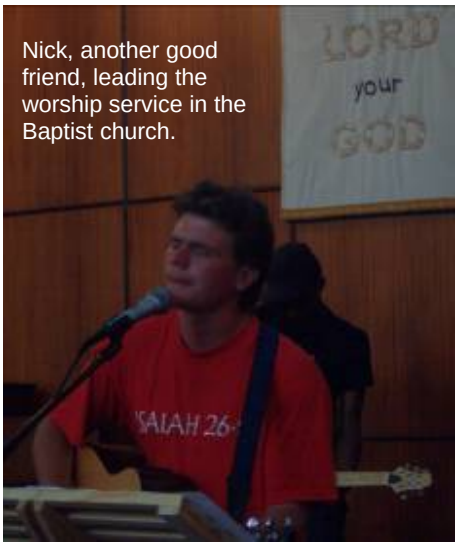
Above: everyone guzzles the ice cream, Mark grinning blissfully in the middle.

Left: myself cleaning out the bottom of an ice cream tub – leave no incriminating evidence!

Scenes



Gordon, the cell group leader who became a great friend to me.



Nick, another good friend, leading the worship service in the Baptist church.

A real honour for me (far right)– singing in the worship band alongside Tarryn (middle) and Alvero (left), both of whom have gorgeous voices. Nick was leading the worship that Sunday evening (far left).

Left: Antoinette and Rosanne after the church service at the Presbytarian church in town.

Below: Dinner at Lynne's (middle) after a hard afternoon's Frisbee game! Lynne and Matt (ARMY t-shirt) both work for a Zimbabwean-based Christian charity FAMILY IMPACT, which aim to support families with HIV/AIDS.

Right: Thulani giving two year old Rosanne a driving lesson after church one Sunday morning!

EGYPTIAN PARTIES where I met Dr Sarkiss (left), ophthalmologist at UBH, and others who became wonderful friends.

Left: Rachel & Rebecca, non-identical twin doctors at UBH who became dear friends of mine. Above: the Satyanathan family.

Dinner & Karaoke at the SATYANATHANS

Youth for Christ

Zimbabwe

& the SAMKELE Project

Mrs Cotton allowed me the wonderful privilege of helping out in the Samkele Project which she heads, a subsidiary programme under the Christian charity Youth for Christ, Zimbabwe (YFC). Samkele, which means 'welcome' in Ndebele, aims to rehabilitate young girls in crisis, mainly those who have experienced physical/ sexual abuse, usually by a member of their families. They are usually removed from their home environments for a short time, counseled and schooled, with the aim of restoring them to their families or foster families, who are also worked with, closely.

Above: the YFC headquarters in Bulawayo city centre where workshops, ceremonies and other activities are held.

I played the role of photographer and camera-woman at various events – an outing with the Samkele girls to the National Art Gallery in town and their annual Christmas play cum graduation and prize-giving ceremony – where there was great opportunity to get to know the girls, interact with them and make a few pen-friends!

Above: excursion to the National Gallery where the girl's were taught about art and encouraged to express their views on the displayed artwork.

Right: Mrs Cotton in red giving a progress report to both parent and child.

Samkele Christmas play & Graduation day. Parents & relatives invited, progress reports given & the girls' work on display!

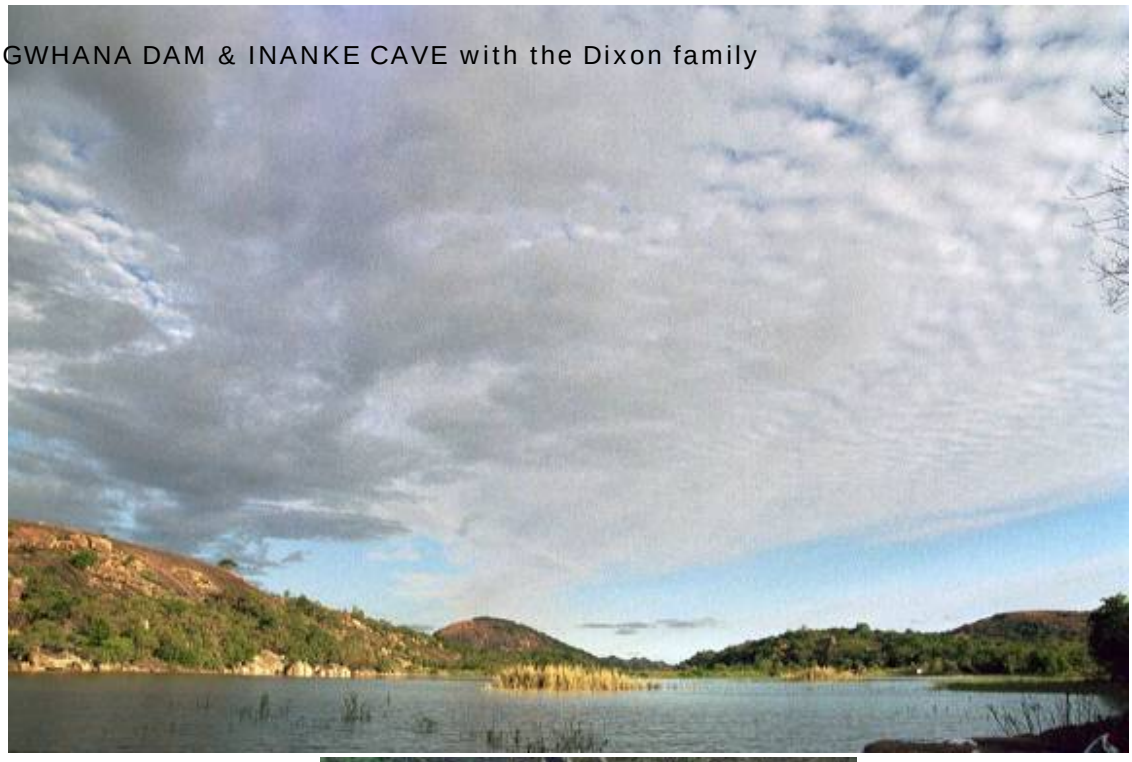
The African sunset – stunning, entrancing, awe-inspiring on countless occasions on my travels through Zimbabwe – I took some time out from hospital work and went on a few road trips. The country is as beautiful as they say; varied, mysterious, enthralling with lots to offer the adventurous. From the buzzing capital Harare, home to Zimbabwe's best sculptures, to the cool, serene eastern highlands; mystifying balancing rocks and cave paintings just outside Bulawayo, to the violent, thundering Victoria falls gushing rapids towards placid Lake Kariba in the northeast parts. Striking game parks covering acres teeming with wildlife in search for waterholes and towering old ruins telling tales of an empire long ago; a lifetime is needed to experience Zimbabwe in its fullness, I managed but a glimpse, a mere breath of its splendor.

Getting around Zimbabwe is not straightforward in the current economic situation characterized by severe fuel shortages. There are a few car rental companies which offer their services at a large cost, and locating fuel enough to travel far is almost only possible through the black market – most fuel pumps through the country have ceased to operate. The best overland option would be Blue Arrow, a reliable luxury coach company that traverses the country in most directions. Smaller private bus services run the more off-the-beaten-track routes, though a fixed daily timetable rarely exists. Domestic flights were mostly suspended when Air Zimbabwe succumbed to the fuel shortage; it is best to double check and re-confirm flights the day before departure, which is still by no means a guarantee of departure. Local friends with their own cars, well-established sources of fuel and big hearts are most certainly the most dependable option!

Matopos national park

The Matopos hills, that extraordinary, fascinating granite country where huge boulders are piled on other boulders as if giants of long ago had been playing with bricks upon a giant nursery floor, and growing tired, petulantly left them in glorious confusion. - Miles Burkitt

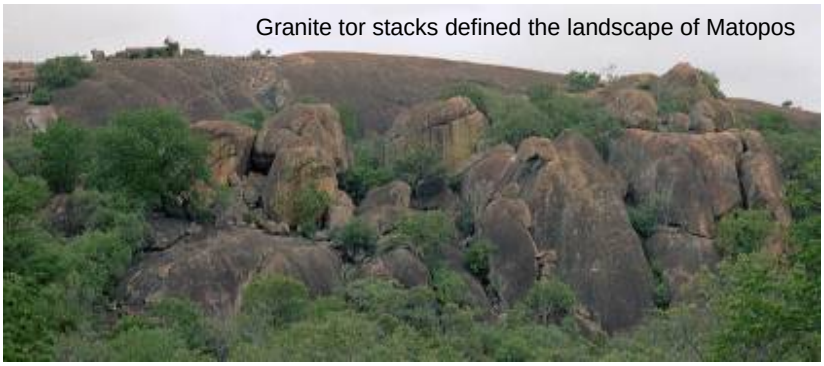
TOGWHANA DAM & INANKE CAVE with the Dixon family



Below: Long trek through different terrain to view the cave paintings at Inanke from Togwhana dam (above).

Below: Jimmy Dixon stopping to grin for my camera!

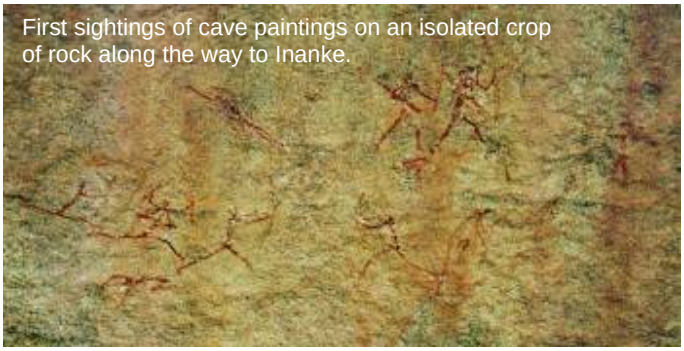
Left: Undulating paths up and down kopjes, quite steep at times.



Granite tor stacks defined the landscape of Matopos

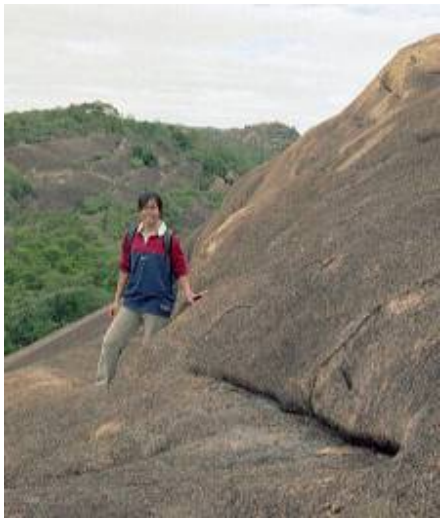
Below: taking a breather on the way down a kopje whilst breathing in the scene. Dr Dixon and his wife, Sima (seated).

Below: trekking through forest, streams and over big rocks. The kids coped incredibly well!

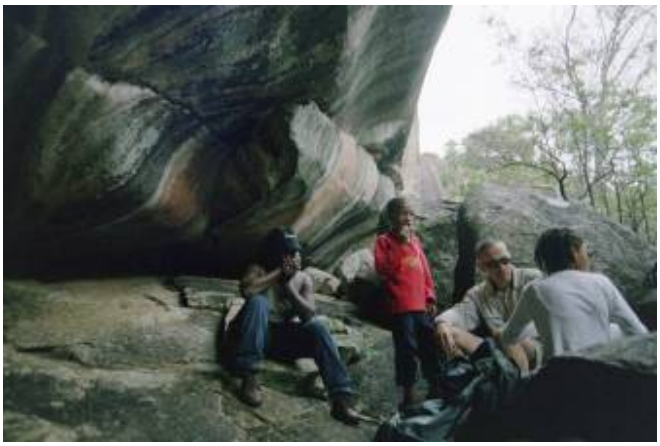


First sightings of cave paintings on an isolated crop of rock along the way to Inanke.

Beautiful lichen-encrusted rock



Above: Inanke cave with paintings across the wall finally after 3h hiking – lunch never tasted so good! (below)

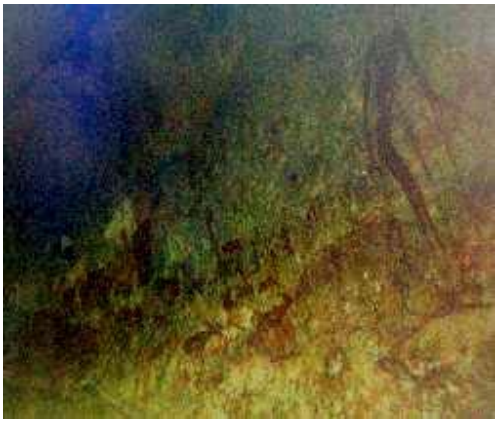


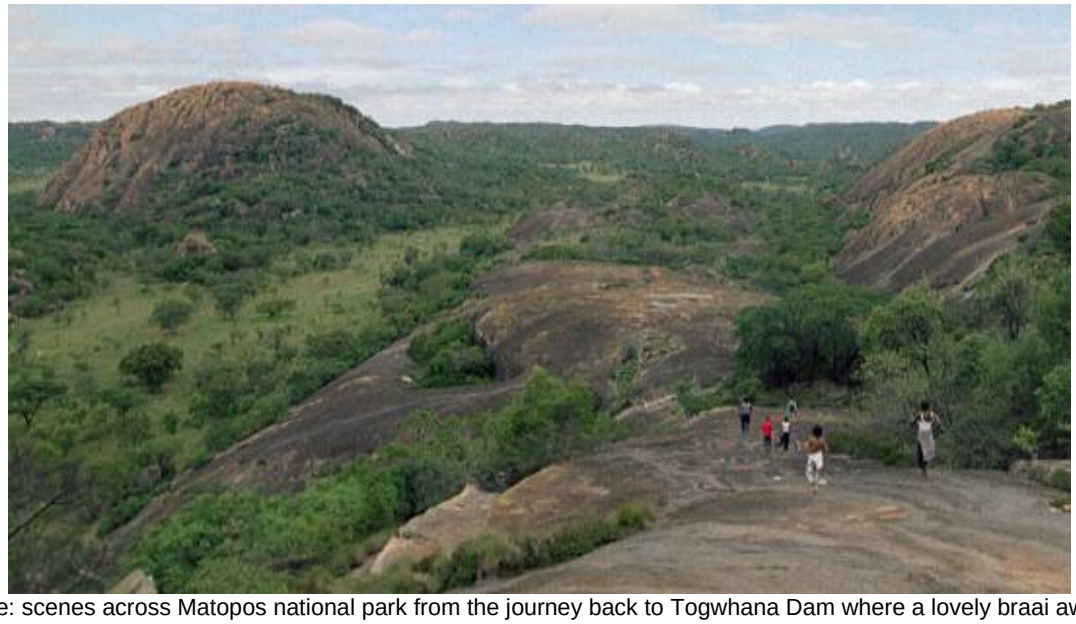
Middle: the steepest part of the climb, I was on all fours at certain points! Dr Dixon in the distance. Above: Splashes of neon-yellow lichen on the granite rock like spray paint by vandals.

Left: grinning children, pleased to have reached the elusive cave! Close up of some cave paintings at Inanke (below).

Middle: racing through big water puddles on top a kopje and then sprawled on the rocks, tired from running.

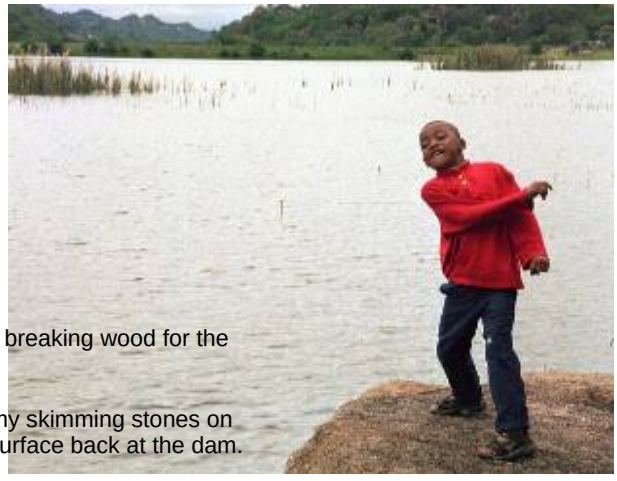
Bottom: view on the way back to the dam.





Above: scenes across Matopos national park from the journey back to Togwhana Dam where a lovely braai awaited the tired travelers!

Left: Nqobi breaking wood for the braai fire.



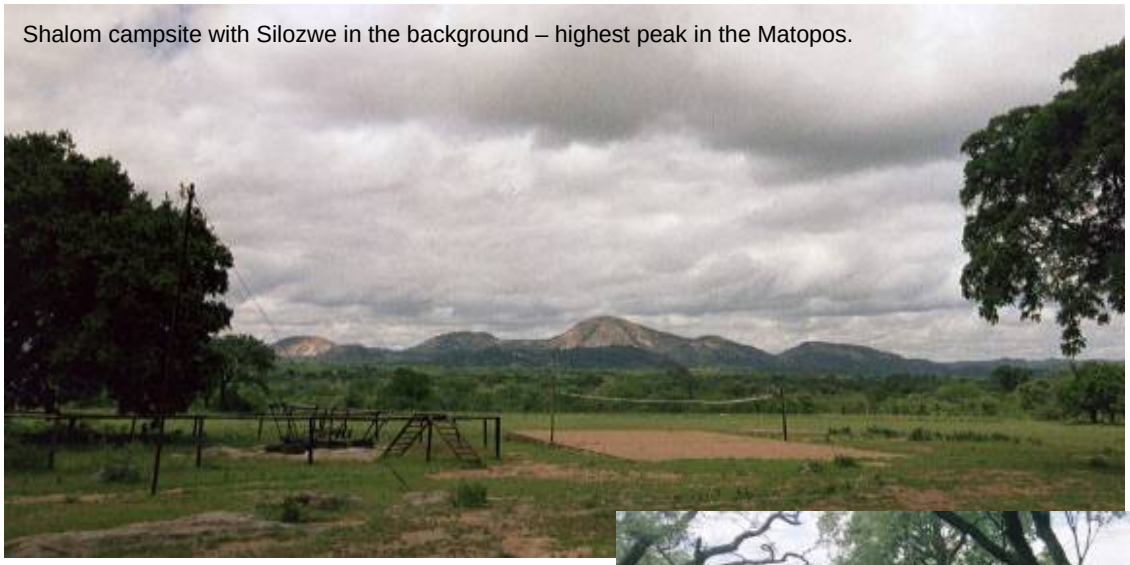
Right: Jimmy skimming stones on the water surface back at the dam.

Matopos national park

SHALOM CAMPSITE, NEW YEARS WEEKEND

The Cunningham family who run Shalom Campsite in the Matopos and own an ostrich farm adjacent to it invited us and a few other families to spend New Year's weekend there. It was an adrenaline pumping outdoor weekend with foofie sliding, rope courses, abseiling down cliff faces, endless matches of ultimate Frisbee and beach volleyball, bush golf, lunchtime cricket, canoe races standing up, treasure hunts in the bush, singing and sharing stories around campfires at night, gorgeous home-made cakes, braais three times a day, sunset walks over kopjes and mini-sermons and prayers for the new year. Enjoy the pictures as I have enjoyed the people at Shalom.

Shalom campsite with Silozwe in the background – highest peak in the Matopos.



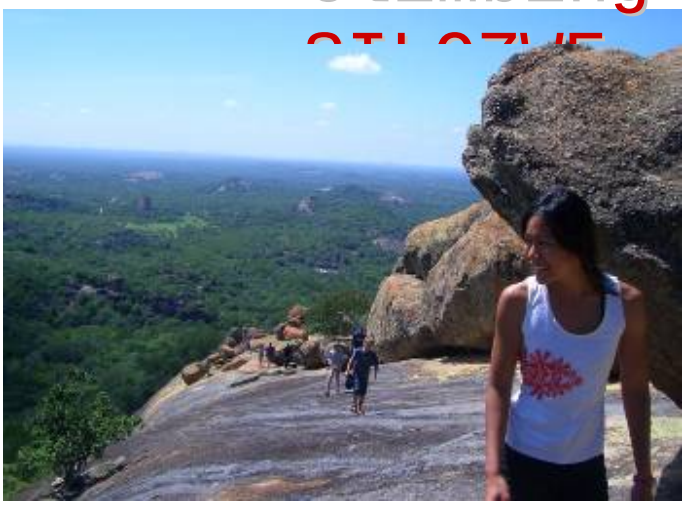
Above and right: Lunchtime at Shalom Campsite. Alvero swings Joel around (above right) and some post lunch cricket. I had whale of a time with these folk – lots of team activities for the entire New Year's weekend!

Above: our own little braai stand with big meat, Zimbabwean style and stir fry – a Southeast Asian addition! Below: my two little hosts Joel and Danni taking me to see the ostrich farm. Left: an ostrich being weighed!

EAT MY DUST! – Nick in the go-kart (below)

Above left: Mike on the foofie slide going over a river and some nasty-looking rocks. Above middle/ left: Nick and Amy doing their extreme go-karting time trials!

Climbing



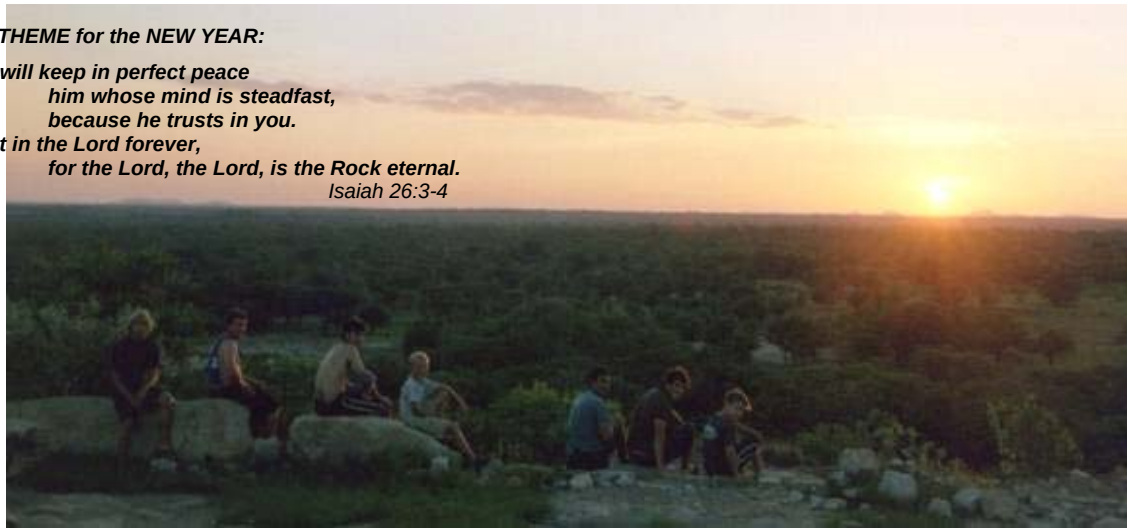
The climb up Matopos' highest peak was grueling but we kept each other going. The aerial views of the national park were amongst the most beautiful I had seen in Zimbabwe.

Below: finally got everyone on the summit! Bottom right: gazing out into the stunning landscape of Matopos (I'm in the white top)

Cloud shadows over the magnificent rock-strewn landscape – sharing the awe with Gordon (right).

Our THEME for the NEW YEAR:

You will keep in perfect peace
him whose mind is steadfast,
because he trusts in you.
Trust in the Lord forever,
for the Lord, the Lord, is the Rock eternal.
Isaiah 26:3-4

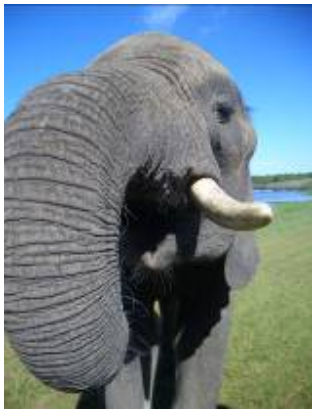


Above: New Year's eve – watching the sunset over Matopos national park from the top of a kopje and contemplating the New Year.

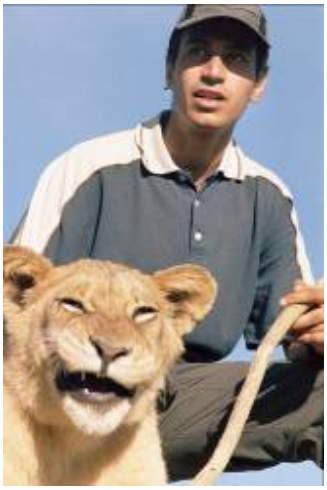
antelope

A restful retreat within easy reach from Bulawayo by coach or bus, it is a small game reserve famed for its lion rehabilitation programme, where visitors are allowed to 'walk' adolescent lions and play with cubs! It is also possible to swim with elephants (or with other humans in the swimming pool) and canoe in crocodile-infested waters – perfect for those wanting to get up close and personal with the wildlife of Zimbabwe! There are wooden lodges or tents for campers, provided meals and refreshments as well as braai stands to cater for all needs and preferences.

Right: Swimming with the elephants! They were a friendly bunch to play with.

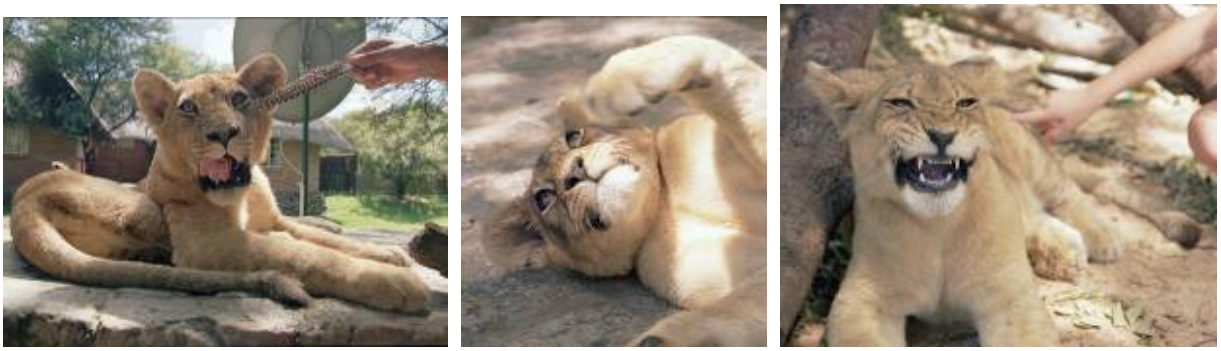


Left and below: Walking ***ARCHILLES, ATHENA & APPOLLO***, we were free to pose and play with them.

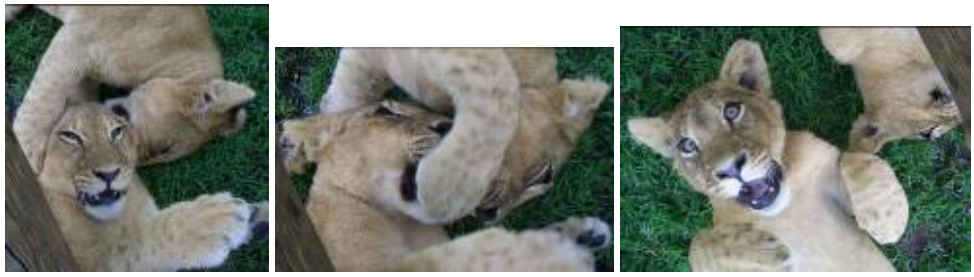


Below: It was pure bliss being able to get good close-ups of these expressive 15 month old lions.
Left: Mark and a grumpy lion.

Above: the 6 month old lion cubs – ***PRAISE, PHYRE & PAKA*** – became our playmates for a morning!



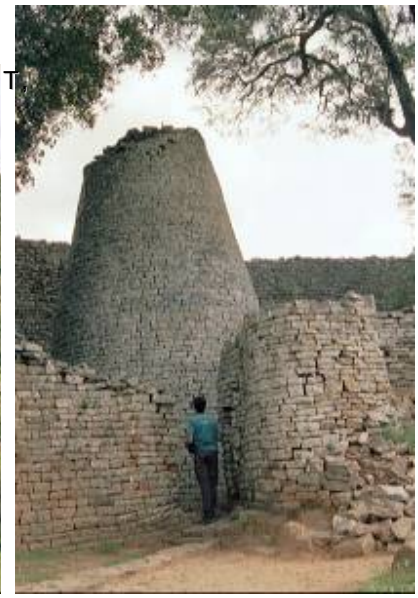
These cubs were amongst the first of a breeding programme aiming to release them into various national parks in the region. Limited human contact was encouraged on a daily basis as part of the programme. I adored the babies!



Great Zimbabwe MONUMENT

MASVINGO

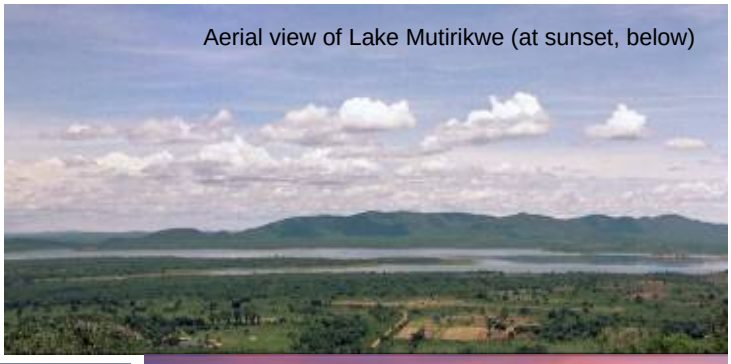
Mysterious ancient ruins dating back to the 11th century



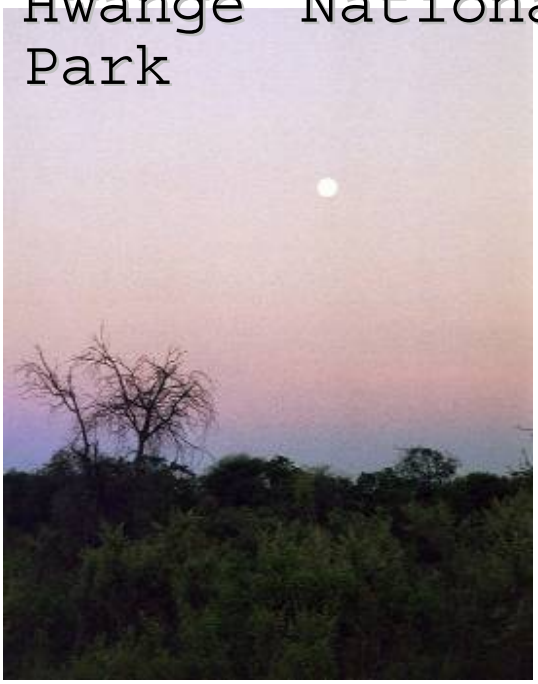
Wandering about the ruins telling of a past empire, the structures were immense, angular rock piled upon rock, nothing holding them together.

Climbing up the higher enclosures for a stunning view (far right)

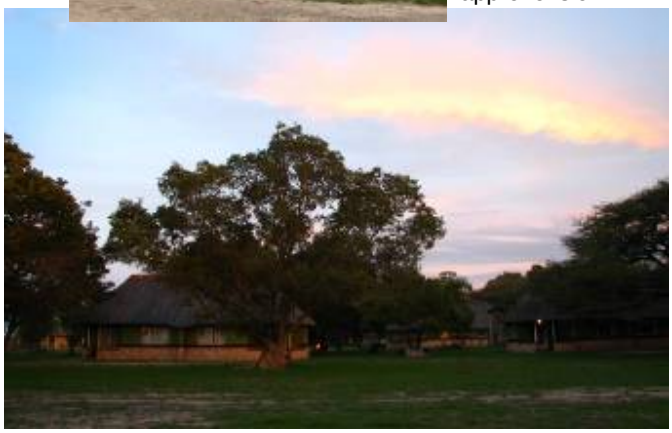
Aerial view of Lake Mutirikwe (at sunset, below)



Hwange National Park



Lodges at the main camp fenced off from the rest of the national park. Occasional hyena cries and lion roars penetrate the camp at dusk, much to our intrigue and apprehension!



Yellow hornbill

A myriad of wildlife spotted amidst the bush and on the plains of Hwange, famed for its large elephant herds and beautiful antelopes.

Male Kudu in combat

The Cottons chilling out on a lookout platform

Contemplative baboon

Sable antelope

Roan antelope

Aunty Delene on the braai

Victoria Falls

Mosi-oa-Tunya – the smoke that thunders.

"…but scenes so lovely must have been gazed upon by angels in their flight"

One of the seven natural wonders and the largest curtain of falling water on earth! This UNESCO World Heritage site borders Zambia and Zimbabwe.

Below: Victoria Falls bridge spanning the Zambezi gorge with the Zambezi river zigzagging beneath.

Magnificent panorama of Victoria falls, accompanied by the roar of its rushing waters and immense spray, soaking passers-by to the skin!

Above middle and below left: The mighty spray of the falls can be viewed from up to 25 km away! Left: islands of calm in the upper Zambezi. Rafting on the rapids is a must for adrenaline junkies, as is gorge swinging or bungee jumping off the bridge! (middle left) Below left: the posh immaculate British colonial Victoria Falls hotel definitely deserves a visit.

Above: sunset cruise on the upper Zambezi where hippos, crocodiles and various interesting waterbirds like the snake bird (inset) can be spotted.

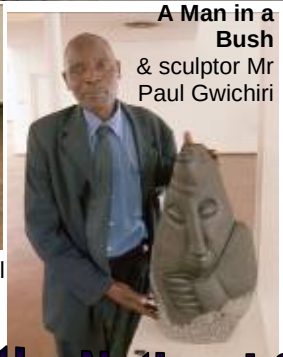
Harare

THE SUNSHINE CITY
Capital of Zimbabwe

Left: Africa Unity Square in Harare, a calm, green spot amidst the bustling streets, one of many peaceful getaways scattered around the clean capital. Above: a typical colourful street down town.

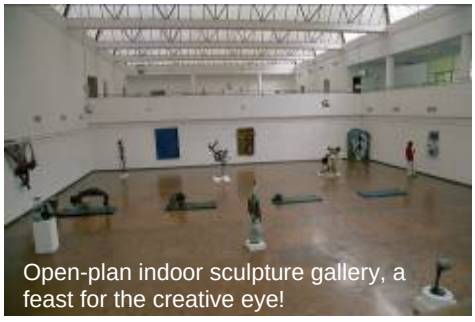
Below and right: the main street, lined with British colonial buildings, and few skyscrapers. It was quite a spectacular view down the straight wide avenue during rush hour!

Below: some of the Shona sculpture on display by local sculptors. Most are of black serpentine & springstone.



A Man in a Bush
& sculptor Mr Paul Gwichiri

Teach Before They Grow



Open-plan indoor sculpture gallery, a feast for the creative eye!

The promotion of local art is impressive, with a collection to match in the gallery, both sculpture, traditional artforms & artefacts. Entrance fee is US$0.50. Bottom row: Gallery Shop with sculpture gardens & café in the background opening out into Harare Gardens. Chilled out jazz music playing to a devilish chocolate fudge cake ended my solitary afternoon at the art gallery on my last day in Zimbabwe.

the National Gallery of Zimbabwe

Useful Contacts

Surgical Electives in Zimbabwe	
	**Professor Michael H. Cotton, MA, MBBS, FRCS, FACS, FCS(ECSA)** Consultant General Surgeon United Bulawayo and Mater Dei Hospitals Bulawayo, Zimbabwe
	302 Lancet House 9th Avenue Bulawayo Zimbabwe
	Tel/FAX (rooms): +(263-9) 60048 Mobile: +(263) 91750401 Tel (home): +(263-9) 245240
	Email: mikeytha@mweb.co.zw

Medical Electives in Zimbabwe	
	**Dr Mark Dixon, FRCP(UK), DTM&H** Consultant/ Specialist Physician Mpilo Central and Mater Dei Hospitals Bulawayo, Zimbabwe
	Suite 25 Medical Centre J. Tongogara St/ 8th Avenue Box 2214 Bulawayo, Zimbabwe
	Tel (rooms): +(263-9) 61632 FAX (rooms): +(263-9) 61633 Mobile: +(263) 91213323 Tel (home): +(263-9) 283445
	Email: mdixon@netconnect.co.zw

Contact me

Email: freida.angullia@imperial.ac.uk
freida_angullia@yahoo.com
Mobile: 0 (44) 78590 45563

Acknowledgements

As we express our gratitude, we must never forget that the highest appreciation is not to utter words, but to live by them. *– John F. Kennedy*

Professor & Mrs Michael Cotton, my surrogate parents for 2 months – for a roof over my head in a foreign land, endless hot meals, countless car rides, cherished conversations, and the warmth and joy of a family I could call my own.

Professor Michael Cotton and Dr Mark Dixon, my elective mentors, whom I greatly respect, for your time, patience, interest and commitment to my education; for inspiring me by your example and instilling within me the passion you have for medicine.

My loving parents, my pillars of support throughout medical school, for your never-ending encouragement and prayers, which are being faithfully answered, from medical school in London to my elective in Zimbabwe.

Prof Cotton (right) beaming at a house warming party.

My mother, sister & Aunty Lyn for your brief but treasured visit to Zimbabwe; for your efforts in obtaining much appreciated resources at short notice, for enduring turbulent flights in small aircrafts and lugging heavy boxes through 3 countries, and for the time of my life in Hwange Naitonal Park & Victoria Falls.

Left to right: Aunty Lyn, my mother, sister & myself on a road trip.

The Royal College of Surgeons of England, the Timios Trust, the Vandervell Foundation & the Christian Medical Fellowship (CMF) for your financial contributions towards my elective, without which it would never have happened.

Special thanks to the **Timios Trust & the CMF** for your prayers and guidance throughout my time in Zimbabwe.

Left to right: Dr Bishay, Dr Chikwana, Prof Cotton, Dr Lumbala, Dr Busumani & myself. (missing, Dr Magara)

The general surgical team at UBH, for your supervision, assistance and approachability; for allowing me to be a part of your team, and in doing so, provide a wealth of invaluable surgical experience on my elective.

Special thanks to **Dr Lumbala & Dr Bishay** for your efforts in my training.

Dr Bishay (left) & myself post-op in Mater Dei theatre.

Dr Mark Bishay & Sonia Angullia, for your beautiful photographs bearing precious memories of my time in Zimbabwe, and for breaking an arm & leg to get them to me at ridiculously short notice.

Sonia with her beloved Fanta Orange out of a glass bottle.

Acknowledgements

CONTINUED

To the patients; young and old, who have kindly granted consent to document their illness experience in pictures and words, and for providing invaluable learning opportunities that have shaped my understanding of medicine.

My dear friend and cell group leader, **Gordon**, for looking after me so well from Matopos to milkshakes at Haefeli's, and **the Baptist cell group**; for the engaging bible studies, powerful prayer times, fervent worship and incredible fellowship – my spiritual anchor in Zimbabwe.

Kathy, my sweet sister-in-Christ and so much more, who will one day become the world's best Paediatrician; for your faithful prayers, thoughts, common vision and sharing of burdens. Thank you for being my support, strength and inspiration throughout medical school, and especially in Zimbabwe.

Dr Michael Platt, Elective Coordinator, Imperial College School of Medicine, who planted the idea in my head in the first place and initiated the whole process that led to my elective experience in Zimbabwe, over a single conversation and some prayer in a quiet seminar room.

The Almighty God – *Now to Him who is able to do immeasurably more than all we ask or imagine, according to His power that is at work within us, to Him be the glory in the church and in Christ Jesus throughout all generations, for ever and ever! Amen.* *Ephesians 3:20-21*