BRAIN DRAIN IN BENIN

Dr Keith Thomson

Introduction . . . . . .

Forty of the fifty-two poorest nations on Earth are found in Africa and Benin is certainly one of them. In these countries up to 50% of the people have no physical or financial access to health care in their local communities. What does this mean? No doctors, dentists, nurses, medications, pharmacists, clinics or hospitals and very few children who have been vaccinated. Childhood mortality is shocking, up to one child in three dies before the age of 5-years-old.

Fig 1.
M/V *Anastasis* in the port of Cotonou

The Anastasis (Fig1) was invited back to Cotonou, by President Matthew Kerekou three years after her first visit. The arrival of the 'Ship' went smoothly and a tanker full of diesel for the vehicles was waiting on the dockside, despite a nation-wide fuel crisis. On the previous trip the Land Rovers had not been used for the first month due to local licensing difficulties. Generally, return visits seem to go more smoothly.

Hypoxic on an Airbus?

On a Sabena flight from Brussels via Abidjan to Cotonou I took the opportunity to study my own oxygen saturation (SaO_2) using a remarkably small 'Nonin' pulse oximeter which had been lent by Draeger. My heart rate increased by about 20 beats per minute just prior to take off and my SaO_2 decreased from 98% on the runway to 90% by the time we had reached our cruising altitude of 37,000 feet. In the operating room the Nonin compared favourably with an Ohmeda Oxicap so my SaO_2 was worryingly low. In some children the reading on the toe was up to 7% lower than that on the finger. Perhaps this was due to ingrained dirt on the feet as few of them wore shoes. The Nonin was particularly useful when transferring ill patients from 'recovery' to the HDU situated on the deck below the operating theatres.

Anaesthesia: Personnel and Problems. . .

Prior to my arrival, the anaesthetic team, consisting of a South African, an American and a Lithuanian, encountered a problem when the oxygen supply failed midway through a cleft palate repair. Luckily the other two theatres were between cases so additional anaesthetic help was available: to blow down the tube, give thiopentone to keep the child asleep while the third tried to sort out the problem with the oxygen as the 'H' cylinder gauge showed full! What had happened was that a valve at the back of the anaesthetic machine was screwed tight resulting in flow only from the small 'back-up' E cylinder (which had become empty) but when unscrewed about half a turn, the H cylinder provided oxygen.

On another occasion a patient sat up and extubated himself some minutes after induction because the halothane vaporiser was not locked on properly. These problems illustrate how important it is to check one's equipment carefully in advance. My close-knit team consisted of Dr Arthur a consultant anaesthetist from Lithuania whom I had sponsored for 4 weeks on the Ship (his monthly salary being only about $100) and Margaret, a CRNA from the United States, whose income is such that she has no problem financing herself.

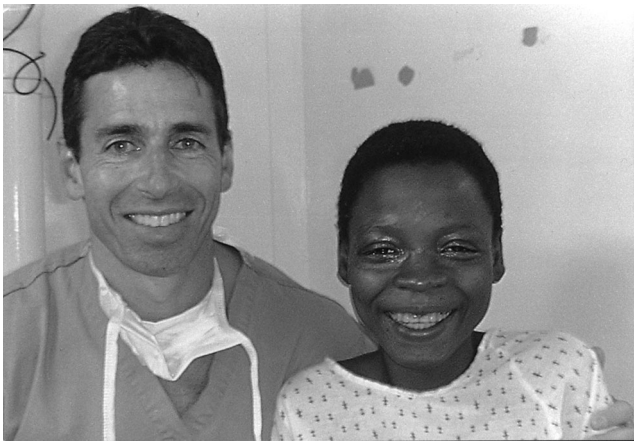


Fig 2.
17 year old Bernadette post cataract with her surgeon

The Case Mix . . . . . .

During my three weeks on board 122 surgical procedures were performed. These included 77 eye patients, of which 6 were children with bilateral congenital cataracts. One of these, 16-year-old Bernadette (Fig 2), was found to have recent onset type 1 diabetes, but I did not postpone her surgery because she needed her vision to inject insulin. The enthusiastic American ophthalmologist, Dr Jeff, was so fast that one morning he had completed 5 cataracts in two hours, which must be a new record on 'The Anastasis'.

Maxillofacial cases included at least 20 cleft lip or palate repairs.

Department of Anaesthesia, North Hampshire Hospital, Basingstoke

please read on . . . 37

I anaesthetised 10 children less than 1-year-old and a further 15 between 1 and 5 years. Some infants had very challenging veins, so most inductions were with sevoflurane, which had been purchased with a generous donation from a lady in Reading who had heard me talk at her local church.

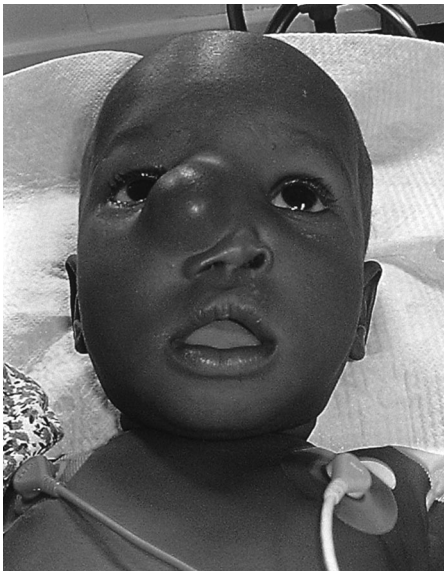


Fig 3. 18 month old Anatole pre-op nasofrontal encephalocoele repair

Three children, the youngest of whom was 9-months-old, had repair of the congenital bony deficit which had led to naso frontal encephalocoeles (Fig3). The operation consisted of a bi-coronal flap, removing the top of the skull, and repairing the hole with bone chips and pericranium. The surgery lasted on average about 4½ hours. Anaesthesia was induced with sevoflurane and once an IV had been established, maintained with isoflurane in O_2 and N_2O and intermittent bolus doses of fentanyl.

Post-operative pain control followed the 'Radcliffe' regime after a phone call to my Consultant anaesthetist friend in Oxford. This consisted of 1mg/kg morphine made up to 50mls volume with normal saline and given at 1ml/hr IV, as well as 20mg/kg paracetamol PR every six hours.

These children also received repeated post-operative lumbar punctures for 3 days to keep the pressure down in an attempt to prevent a CSF leak through the repaired frontal region. We did not use a spinal drain because of a problem 3 years before when the bung had come off the end of the catheter with a nearly fatal result. These children all recovered well from their surgery except for 9-month-old Anatole who had paroxysmal attacks of sinus bradycardia down to 50 during the first few days post-op. This eventually resolved without specific treatment.

Cancrum Oris. . . . . .

There were 4 cases of reconstruction of terrible facial defects due to Cancrum Oris (noma) in childhood. This is a fusiform bacillus infection, sensitive to penicillin, which occurs in immuno-depressed children, often after an attack of measles. Initially there is a gangrenous lesion, usually on the cheek, which ulcerates and then heals with excessive fibrosis often leading to ankylosis of the jaws, which can result in challenging intubations. In one case (Fig 4) after attempts at blind nasal were unsuccessful and fibre optic intubation had been abandoned because of excess bleeding, a retrograde technique was used. A Seldinger wire was passed through the cricothyroid membrane and emerged from the left nostril.

I was unable to advance a tube between the cords without increasing the tension in the wire and thus risking a 'cheese wire' effect but after reinsertion, (Fig5) the wire came out of the mouth and there was just enough of a gap between the teeth to railroad a 6.5 tube. The jaws were released surgically and an RAE nasal tube was inserted.

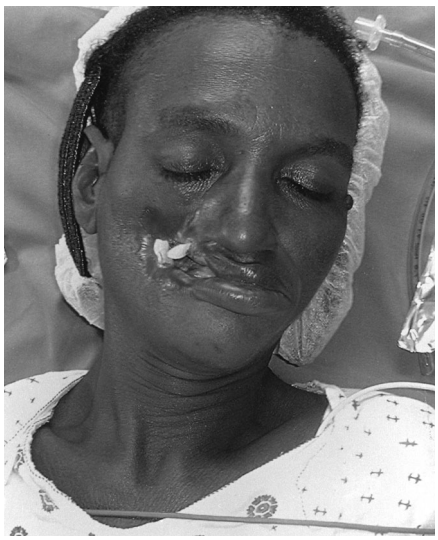
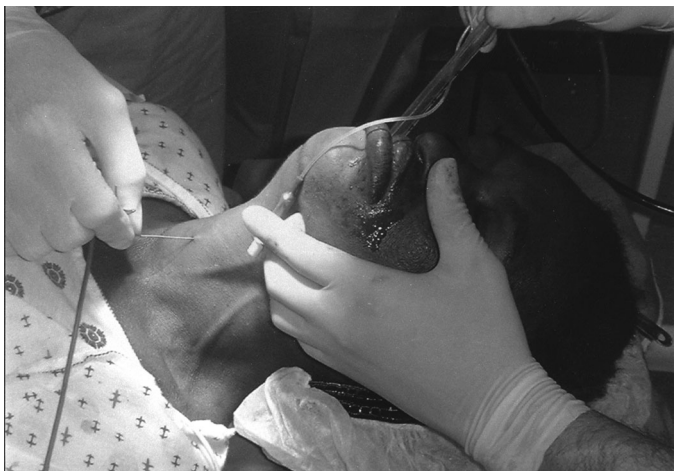


Fig 4.
25-year-old woman with Cancrum Oris

Surgery consisted of temporalis muscle flap to provide a new right cheek and an 'Eslander' to reform the lip. A morphine + droperidol subcutaneous infusion via a Perfusor M clockwork pump (*B. Braun*) was used for post-operative pain relief.

Fig 5.
Retrograde intubation using Seldinger wire



Resident Surgeon and CEO – Dr Gary Parker. . . . .

Dr Gary is a tall and quietly spoken 49-year-old American who originally trained at the University of California (Los Angeles), then worked for 5 years as a locum Senior Registrar in Bangor, North Wales. He could easily be a millionaire working as a maxillo-facial and plastics surgeon in the USA, but instead he spends 50 or 60 hours a week in surgery, helping the poorest of the poor.

He has served full time on board the '*Anastasis*' for over 14 years and is married with two young children. He regards his son and daughter as privileged minorities. They have food, water, a home and parents, and do not have a gutful of worms and other parasites to share what little nourishment they can get.

One evening he gave an amazing talk about why he was on the Ship doing what he does. This lasted (with one short physiological break) for nearly 3 hours. Those of us who were there regarded it as an honour to have been present. He started by reminding us that in the world 1 billion people out of the 6 billion inhabitants live in absolute poverty, defined as a *per capita* income of less than US$370 per year. Only 20% of the population have access to elective surgery as we know it in the West, while 25% have no medical care at all. Approximately 50,000 people (mostly children) die every day in the world, the equivalent of 34 Titanics full! He said people often ask him why he bothers caring for the poor in Africa because AIDS is such an overwhelming killer. "They are right but there are other great killers in Africa that we do have answers to; we can give clean water to everyone, we can feed everyone, we can vaccinate every child, we can control malaria and TB and we can stop the carnage in childbirth. But the question is: will we?

The difference between those two little words is literally the difference between life and death for 20 million people a year in Africa."

Continuing on the theme of inequality in our world, he said that the World Health Organisation (W.H.O.) had calculated that approximately US$40 billion more is needed per year to provide clean water and health care in the Developing World. This compares with a similar amount which is actually spent annually on the game of golf and US$20 billion which is paid in the USA and Canada for vet fees. The world's richest 200 people earn the same as 41% of the World's poorest.

He said that most people in the West regard personal peace and affluence as very important, but he challenged us all to think of what we should live for and gave two quotes from Mother Teresa:-

1) "It is not how much you do that matters but how much love you put into what you do"

2) "Learn to see Christ in the disturbing disguise of the poor"

Reunited with the Conteh Family. . . . .

In September 2000 about four thousand refugees from Sierra Leone and Liberia were thrown into prison in Conakry as a result of an edict by President Lansana Conte of Guinea. Among them was my friend Augustine Conteh who I had last seen in December 1998 [1].
Most of the refugees were released after 3 days when international pressure was brought to bear but Augustine's description of being in a cell only 3m wide x 3.5m long x 4m high along with over 50 other men defies belief (if anyone wants to read about his experience then send a request by e-mail to: keith.t2@ukonline.co.uk).

Fig 6.
The Conteh family on the *Anastasis*

After 72 hours he was released but, unable to pay the required US$30, he had to accept the alternative "flog option" which was 50 lashes with a belt. Luckily his home had not been vandalised and his wife and child were safe with friends. With the help of Madame Pouponne, a Guinean television presenter (whose number fortuitously was still in my Psion Revo), I managed to fly the family to Accra, a place of relative safety where the uncle of a

please read on . . .

Ghanaian friend of mine who works in England provided accommodation. While I was in Cotonou the Contehs travelled from Accra to see me (Fig 6). I first met this Sierra Leonean family during a visit to a Freetown maternity hospital in 1993[2]. I paid for Catherine to have a Caesarean as she and her unborn baby had been left to die, unable to afford the operation. This case illustrates the way I feel about the people of Africa – that individuals matter and if one takes on the responsibility of helping someone one should continue, if appropriate, with no time limit. One of the permanent crew members on the '*Anastasis*', a well built Ghanaian lady called Lucy, gave me a big hug and said "thank you for helping us Africans". Somehow that comment meant a lot. At present the Contehs, as refugees, cannot find employment but Regina is going to school, Catherine is attempting two GCSEs and Augustine is doing a computer course. They are applying for visas to come over to England where a hospital has offered them jobs as a porter and a domestic assistant respectively. What they really want to do is obtain training; Augustine in computer repair and maintenance and Catherine as a midwife and then return in a few years time to help rebuild their country, Sierra Leone, which has been ravaged over the past 5 years by a vicious civil war.

Mortality at the Lagune Maternity Hospital. . . . .

In 1999 there were 53 maternal deaths out of 5684 parturients which gives a rate of 932 per 100,000 (compared with 10 per 100,000 in the UK). Seventy five per cent of these fatalities had arrived moribund from other centres. The causes of death were haemorrhage, infection, eclampsia and anaemia. This death rate in pregnancy of 1% is relatively low in West Africa, but of course it didn't include women who die before they even reach hospital. Maternal mortality figures in West Africa compete with the worst in the world but there is also terrible morbidity. For every woman who dies there are about 20 others whose pelvic tissues are severely damaged as a result of prolonged obstructed labour. They subsequently develop vesico- or rectovaginal fistulae, which leads to physical rejection by husbands and being ostracised within their community.

The Caesarean section rate was 23%, most of which were emergencies under general anaesthesia. The usual technique was thiopentone, gallamine, oxygen, intubation and then after delivery the patient was given syntocinon, diazepam and pethidine; no inhalational agents were used. Interestingly another anaesthetist I met was from the nearby town of Grand Popo where he did most Caesareans under spinal anaesthesia, a technique he had learnt in the late 1980s while working in Leipzig in East Germany.

Off the Ship. . . . . .

I kept fit by jogging round the docks where there were a variety of goods being unloaded from giant container ships, particularly old vehicles which had probably failed their MOT or similar test in Europe! I visited two excellent restaurants several times, the Bangkok Terrasse, a local Thai place, where one of the main specialities was 'poulet au coco', a delicious chicken curry served inside a whole fresh coconut. The Livingstone Bar did superb fillet steaks at a cost of only the equivalent of £4 and included all vegetables and an excellent sauce! However street vendors trying to sell you wooden animals could interrupt one's meal; one night I negotiated an excellent purchase price for 9 elephants during my main course! In general the standard of carving in Benin is probably about the best I have seen in West Africa, so I took a spare bag plus a few rolls of bubble paper for wrapping Christmas presents. One afternoon my friend Pastor Jean took me on his motorcycle into the centre of the local market to buy some cloth for an African style suit. I bought two rolls for about £7 each, (one maroon with bunches of vegetables all over it and the other black with an interesting white pattern). Jean's tailor then made up the suits for about £5 each which seemed a reasonable deal. Two weeks before, I had spoken at Pastor Jean's Church about the work of the Mercy Ships. When I mentioned that on the new Ship we were planning to do fistula work on women who had been damaged in childbirth, I was applauded by the congregation. Obviously people realise what a problem it is in the community.

The main mode of public transport in Cotonou is still the zemidjan or scooter taxi. One night Surgeon Dr Lur, Dr David (my Bracknell GP room mate) and I went out for a drink at the Livingstone Bar returning about 11.30pm on zemidjans, two of which did not have any lights – an exciting experience I am not in any hurry to repeat!

Mercy Ships - The Future. . .

The refit of the newest addition to the fleet named the "*Africa Mercy*" by Dame Norma Major on 4th April 2000, is now about one third completed. The current plans include 6 operating theatres for ophthalmic, orthopaedic, maxillofacial and fistula surgery. The wards will have a total of 82 beds including a 5 bedded intensive care unit. The 16,700 tonne *Africa Mercy* should be sailing by the end of next year, finances permitting. We will be looking for anaesthetic volunteers of all grades, including nurses and ODAs to staff these theatres during future outreaches to help more of the poorest of the poor in Africa.

The next visit of the Anastasis to West Africa is to Freetown, Sierra Leone from November 2001 to June 2002. Anyone interested in volunteering, for a minimum of two weeks, should contact: Dr Keith Thomson by email or phone (01256 313461).

Application forms can be obtained from:-
Mercy Ships UK, The Lighthouse, 12 Meadway Court, Stevenage, Herts.
Tel: 01438 727800, Fax: 01438721900
Website: www.mercyships.org.uk

References

1. THOMSON KD. Old Friends and New Challenges on the Ship of Hope *Today's Anaesthetist* 1999: **14**: 104-7.
2. THOMSON KD. Sun, Sea but not much Sux in Sierra Leone. *Today's Anaesthetist* 1993: **8**: 160-61.

❒ ❒ ❒