

World Anaesthesia

news

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WORLD
ANAESTHESIA

Welcome to World Anaesthesia News

Editorial

In the mid-1990s, a group of Anaesthetists formed the World Anaesthesia Society (WA) with the aim of supporting anaesthetists working in developing countries with training and equipment and providing them with appropriate educational material.

At a time when a modest textbook of anaesthesia could cost an anaesthetist working a developing country several months salary, World Anaesthesia initiated the "add-on" journal, Update in Anaesthesia, to provide anaesthetists in the those countries with an up to date textbook of anaesthesia at no cost to them. Update is now published in five languages, English, French, Spanish, Russian and Mandarin, and thousands of copies of each issue are distributed worldwide. It is also available on the web (www.nda.ox.ac.uk/wfsa) and recently all back issues have been made available on CD. WA has been sponsored by the World Federation of Societies of Anesthesiologists in producing and distributing Update.

World Anaesthesia has grown from being a handful of enthusiasts into an international Society with over one thousand members; some 350 in developed countries and the balance working throughout the developing world. The latter pay no membership fees and are subsidised by their colleagues in the affluent West.

Although World Anaesthesia has received grants from national societies of anaesthetists such as the Association of Anaesthetists of Great Britain and Ireland and the World Federation of Societies of Anesthesiologists to help it with its work, most of its income has come from the membership fee paid by those who can afford it. For the last few years this has been £20 per annum, but at a recent meeting of its committee, World Anaesthesia decided to increase that fee to £35 per annum. Although this is a significant increase, it will enable WA to continue and expand its work, including the development of our own website (www.world-anaesthesia.org).

Paying members of World Anaesthesia will receive WA News and all members will also receive a copy of the new World Anaesthesia CDROM that has been produced with the support and assistance of the AAGBI. This disc contains not only volumes 1-16 of Update, and the last four years' editions of Anaesthesia but also the WHO formulary, the WHO guidelines on the Clinical Use of Blood, the Primary Trauma Care manual, the UK Resuscitation Council guidelines and the recently published 2nd edition of Anaesthesia in the District Hospital by Mike Dobson.

We hope that all members of WA will continue to support the Society and complete and return the membership form and direct debit mandate on the back pages of this issue, so that the Society can update its membership lists and continue its work in assisting our colleagues in the developing world.

William F Casey

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QUINTIN JUAN GOMEZ (1919 -2003)

Reading of the death of Quintin Gomez, past President of WFSA, on 30th September, 2003 in the WFSA Newsletter (November, 2003) produced a feeling of very real sadness which was, however, tempered by a feeling of gladness that he had been released from his many years of hospitalisation and sickness.

Quintin was born in Manila on 12th April 1919. He became a Bachelor of Arts in the University of the Philippines in 1939 when he was only just 20. He then entered the College of Medicine from which he graduated in 1944 during World War II. He managed to get to Chicago where, from 1956 -1948, he studied anaesthesiology under Max Sadove. His interest in anaesthesiology began after a meeting with Joseph Artusio while both were working at the 155th Station Hospital in Mandaluyong in the Philippines in 1946 just after the end of the war. In 1949, he joined the Faculty of the College of Medicine, University of the Philippines. In due course, he was appointed Professor of Anaesthesiology and pioneered the development of anaesthesiology as an independent specialty in the Philippines. His reputation quickly grew

and he became a highly respected figure in the specialty in the countries of the Pacific Rim. He represented the Philippines at the 4th World Congress in London in 1968 where he was elected Treasurer of WFSA, the first person from the Far East to hold high office in the organisation. He was re-elected for a second term at the World Congress in Kyoto in 1972.

In 1966, WFSA had established a Training Centre in Caracas. Quintin had swiftly seen the advantages that such a centre could bring to the development of the specialty in Asia. He led a committee which included Roger Bennett (Australia), Peter Lee (Taiwan) and Hideo Yamamura (Japan). The matter was referred to the next meeting of the Asian/ Australasian Regional Section in Canberra in 1970. It took a little time but, in due course, a WFSA Training Centre was established in Manila and Quintin was appointed Director. Quintin's dedication to the work of WFSA was acknowledged by the WFSA General Assembly when he was elected President at the 6th World Congress in Mexico City in 1976. In his Presidential Address to the 7th World Congress in Hamburg in 1980, Quintin stressed the



Quintin Juan Gomez (1919 -2003)

importance of WFSA continuing to develop its educational programme and he was delighted at the subsequent growth in activities. It gave him great pleasure when the General Assembly agreed to Manila being the venue of the 8th World Congress and he proved to be a gracious host and, despite a number of local difficulties, these were overcome and the congress, his last before he became ill, was highly successful. He has left his mark on the organisation and I am personally sad to have lost a good friend.

**John Zorab
President (1988 - 1992)**

Dr Gertie Marx

Dr Gertie Marx was born in Frankfurt, Germany in 1912. After hearing Hitler speak at a rally in 1930, she persuaded her family to leave Germany and move to Switzerland where she qualified in medicine from the University of Berne in 1937. She then emigrated to the United States and initially worked at the Beth Israel hospital in New York. There she introduced the technique of caudal anaesthesia. In 1955, she joined the anaesthesiology department of the new Albert Einstein College of Medicine in the New York where she subsequently became professor. She worked there until her retirement in 1995.

Dr Marx helped found the sub-specialty of obstetric anaesthesia and was a tireless advocate of epidural anaesthesia for labour and delivery. She initially faced considerable opposition from those who argued that epidural analgesia would

prolong labour and increase the rate of Caesarean section as well as from those who quoted the bible "with sorrow you shall bring forth children." She was able to show that epidural anaesthesia was safe for mother and child, did not increase the incidence of caesarean section and allowed fathers to be present for the birth of their children.

Dr Marx had a formidable reputation but was renowned for her devotion to and support of the junior doctors in her department.

For many years she was a member of the WFSA obstetrics committee and, with Dr John Bonica, was co-author of the WFSA manual on obstetric anaesthesia and analgesia. In all she wrote or co-authored some 150 articles and 30 textbooks or book chapters and was the founding editor of *Obstetric Anesthesia Digest*, the first journal devoted to obstetric anaesthesia. She

advocated hydration to prevent post spinal headache, did much to publicise the dangers of aorto-caval compression and advocated epidural anaesthesia for emergency Caesarean section.

Dr Marx received many awards from United States and international organisations including the Distinguished Service Award of the American Society of Anesthesiologists but was said to have been particularly proud of a medal presented to her by Queen Elizabeth II in 1993 on behalf of the Royal College of Anaesthetists. The Gertie Marx epidural needle was named in her honour and the Gertie Marx prize is awarded for the best scientific paper presented at the annual meeting of the Society for Obstetric Anaesthesia and Perinatology (SOAP). She died on 29 January 2004 aged 91 years.

Anaesthesia for Patent Ductus Arteriosus (PDA) ligation.

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Introduction

Many hospitals now have surgeons who are willing to perform complex procedures formerly undertaken in only a few specialist institutions. Not all of these hospitals have anaesthesiologist with training in paediatric cardiovascular anaesthesia.

In order to provide safe anaesthesia for children with congenital heart disease, the anaesthesiologist must have a detailed understanding of the pathophysiology of the lesion and the pharmacology of drugs being used.

The Ductus Arteriosus (PDA) is a persistent foetal communication from the main pulmonary artery (PA) to the descending aorta. The incidence of this defect is 1 in 2500 live full-term births, accounting for approximately 10% of all congenital heart defects.^{1, 2, 3}

Anatomy

The isolated PDA arises from the anterior surface of the main pulmonary artery near its junction with the left pulmonary artery and joins the posterior descending aorta after the origin of the left subclavian artery. The shunt between the aorta and the PA can be restrictive or non-restrictive. The magnitude and direction of flow are determined by the pressure in the aorta and resistance to flow in the two

vascular beds, pulmonary and systemic. With non-restrictive PDA, the normal low pulmonary vascular resistance leads to an increased pulmonary blood flow and rise in pulmonary vascular pressures while systemic blood flow is frequently reduced.^{1, 2}

Pathophysiology

At birth, several important changes occur in the heart and peripheral circulation. The circulation of the newborn infant is in transition from the foetal to the adult pattern. It can be shift back to the foetal pattern by the presence of congenital heart disease, prematurity, anaesthesia, hypoxia and other conditions. Shunting through the PDA and across the foramen ovale is characteristic of foetal circulation.

After birth and the cessation of placental circulation, an increase in systemic vascular resistance occurs. Pulmonary vascular resistance decreases 75 % and pulmonary blood flow increase 450 % with the beginning of neonatal respiration. From a prenatal pressure of 70/45, the pulmonary artery pressure decrease to 50/30 at 24 hours after birth and to 30/12 a few days later.¹ Vasoactive drugs, including bradykinin, prostaglandins and endothelium-derived relaxing factor contribute to pulmonary vasodilation. Oxygen and ventilation contributes to increases in the release of these substances.

The PDA begins to close within 10-15 hours of birth as a result of the increased arterial oxygen pressure and vasoactive factors. The ductus is physiologically closed by the

second day of life in normal infants, but we must remember that it can reopen in response to hypoxia. In neonates, acute moderate hypoxia increases cardiac output if metabolic acidosis is absent. However, in the presence of metabolic acidosis, cardiac output decreases. Acute severe hypoxia causes bradycardia. Other changes associated with hypoxia are decreased myocardial contractility, increased pulmonary vascular resistance and reopening of the ductus with shunting. Permanent anatomic closure of the ductus normally occurs within the first 3 weeks of life. The haemodynamics of PDA are similar to those of Ventricular Septal Defect in that the amount of left to right shunt is governed by size of the defect and vascular resistance. When the ductus is large, the magnitude of the shunt is determined by the ratio of pulmonary vascular resistance to systemic vascular resistance.^{1, 2}

Natural History and Clinical Manifestations

The natural history of PDA is similar to that of other lesions with a left to right shunt. In most patients, congestive heart failure, manifested by tachypnoea, fluid retention, hepatomegaly and cardiomegaly are present. An increase in pulmonary vascularity may be evident on chest X-rays. There is always a risk of bacterial endocarditis and this is a primary indication for closure even of small asymptomatic PDA. The risk persists for at least 3 years after the closure.¹ Children with PDA have a continuous, machinery-type murmur in the left first intercostals space. Due

to the left ventricular failure, fatigue and dyspnoea most children with a PDA are malnourished. Because of the low resistance shunt through the pulmonary vasculature, the systemic arterial pulse pressure is often wide, giving the impression of bounding peripheral pulses.

Preoperative evaluation

During pre-operative assessment it is necessary to look carefully for evidence of problems such as respiratory infections and congestive heart failure. Anaesthetising a child with a respiratory infection may lead to a higher incidence of complications if intubation is required or the airway is manipulated. Laryngospasm or bronchospasm may occur as a response to glottic or subglottic mucosal stimulation.⁴ Upper respiratory tract infections cause a striking increase in bronchial reactivity that appears to persist for 3 to 4 weeks after infection.⁵

As a minimum, blood gas measurements, haematocrit, blood chemical and glucose analysis should be performed to ensure that the infant is adequately prepared for surgery.

Anaesthetic management
Non surgical closure of the PDA is possible in selected patients. Administration of indomethacin will produce functional closure of the Ductus in 50-70 % of infants.^{1, 3}

Catheter closure of PDA has been performed since 1977 in developed countries and, since the 1990s, it has also been a common procedure in our country limited only by economic considerations (the cost and availability of the devices). This non-surgical

closure of the defect eliminates the need for a thoracotomy and prolonged hospital stay and can be performed under sedation in a catheter laboratory.

The anaesthetic technique for surgical repair is variable but in severely ill patients the administration of fentanyl and a non-depolarizing muscle relaxants provides adequate analgesia and surgical operating conditions. Ventilation is maintained with a mixture of air and oxygen. This combination is well tolerated even by critically ill infants with congestive heart failure.

We use on induction dose of fentanyl of 5-10 micrograms/kg and 30-50 micrograms/kg in total for maintenance. In haemodynamically stable children, this technique usually allows extubation at the end of procedure. Ketamine, isoflurane and midazolam are useful drugs that can be use to supplement the anaesthetic.^{1, 2, 3, 6, 7}

Most patients have undergone fluid restriction and diuretic treatment whilst being prepared for surgery and may require volume replacement before induction. We use Ringer lactate 10 ml/kg for this purpose. Peri-operative hydration is accomplished with Ringer lactate at 5 ml/kg/hour.

The surgical approach to the PDA is usually through a left postero-lateral thoracotomy. Intercostal nerve blocks at the end of the procedure are effective in controlling post-operative pain and can be done by the surgeon under direct vision before the chest is closed.

Ductus ligation is usually accompanied by an increase in

diastolic pressure and variable and transient effects on systemic pressure. Surgical complications are rare but include damage to the recurrent laryngeal nerve and inadvertent ligation of either the aorta or the left pulmonary artery, both of which may be similar in size to the ductus in the neonate.² Postoperatively the child requires a chest tube for 24 hours and may stay in the hospital for 3-5 days.

Conclusions

The peri-operative course of each patient is unique; however, certain problems and complications are often associated with each specific congenital cardiac condition and should be anticipated in order to ensure optimal anaesthesia management.

References

1. Lake CL. Pediatric Cardiac Anesthesia. 2nd Ed. Norwalk. Appleton & Lange. 1993: 363.
2. Kaplan J. Cardiac Anesthesia. 4th Ed. Philadelphia. WB Saunders. 1999: 807.
3. Stehling L. Commons problems in Pediatric Anesthesia. 2nd Ed. St. Louis. Mosby. 1992: 49.
4. Mason LJ. Pitfalls and problems in Pediatric Anesthesia. IARS 2002 Review Course Lectures. Supplement to Anesthesia & Analgesia. March 2002: 73.
5. Gal TJ. Reactive Airway Disease: Anesthetic perspectives. IARS 2002 Review Course Supplement to Anesthesia & Analgesia. March 2002: 47.
6. Robinson S, Gregory GA. Fentanyl air-oxygen anesthesia for ligation of patent ductus arteriosus in preterm infants. Anesthesia & Analgesia 1981: 60, 331-34.
7. Gregory A. G. Pediatric Anesthesia. 4th Ed. New York. Churchill-Livingstone 2002.



Operation ORBIS: the surgeons' perspective

ORBIS Flying Eye Hospital Programme, Angeles City, Philippines

Dr Rosette Hizon, trainee

Dr Maricel Angeles, trainee

Dr Fred Hidaji, ORBIS volunteer

It's 4am when Roma and her mother, Norma make their way to Angeles City where Roma is scheduled for strabismus surgery on board the Flying Eye Hospital. However, as Norma rarely leaves her village, she gets lost on the way. The ORBIS team have almost given up hope to see Roma again, when they finally turn up – both exhausted – at 11am. This is the second day in a row they have had to make this long trip.

The previous day, Roma and Norma had travelled to the Jose B Lingad Memorial General Hospital in Angeles City for the ORBIS screening day. Roma had been referred by her local doctor to see ORBIS as he did not have the necessary skills to correct her strabismus.

Roma is a shy and withdrawn 3-year old child. When she was 5 months old, her parents noticed how her right eye started turning inwards. Her local doctor diagnosed her with esotropia, the most common form of strabismus, which can cause amblyopia (lazy eye) in children, leading to partial or total loss of vision. If detected early, strabismus can be corrected by eye exercises, spectacles or – as a last resort – surgery. Whilst Roma's doctor could diagnose her condition, he did not have the skills to perform the surgery and as the family was too poor to pay for an operation in a private clinic, her condition remained untreated and her vision slowly deteriorated.

At the screening day, US ORBIS volunteer Dr Fred Hidaji and his trainees Drs Rosette Hizon and Maricel Angeles decided to include Roma on their list of patients for that week, as she would make an excellent teaching case for paediatric strabismus surgery. As Dr Hidaji, a first-time ORBIS volunteer explains: "We decided to concentrate on basic, non-complicated cases and chose eight

patients with strabismus that would enable Rosette and Maricel to expand their knowledge base while simultaneously honing their surgical skills. We tried to choose a variety of cases, but with enough similarity to allow me to demonstrate my operative technique on the first case and then allow Maricel or Rosette to mirror my technique during the other cases."

Norma is delighted that Roma has been chosen for surgery: "ORBIS has offered the best help we could ever hope for. There is no way we would ever be able to afford surgery, but now my little girl will look normal again and will be able to see properly."

Roma lives with her parents and 8 siblings in Pampagna. The family is extremely poor often moving from place to place – at times living in abandoned houses. Their only source of income is from collecting empty bottles and re-selling them to earn a meagre 100 pesos (£1) a day. Luxuries, even the bus fare to Angeles City are beyond this family's means. Not even knowing whether Roma would be selected for surgery, Norma had to borrow money from their friends in order to be seen by the ORBIS doctors – but she felt it was the only chance Roma would ever get.

The family survives mainly on a diet of rice with oil and soy sauce and sometimes a bit of dried fish. The hardships of their life are evident when you meet Norma. She is just 31 years old, but raising 9 children aged between 7 months and 15 years has clearly taken its toll. Norma doesn't want any more children as she doesn't feel she can look after them properly – she has to beg officials for milk for her youngest as she is not producing enough milk herself, but her husband



refuses any help with family planning. Only two of their children are in school, the others are at home helping the family out as best they can.

On the day of Roma's operation on board the Flying Eye Hospital, Norma tells the ORBIS nurses how grateful she is that they will operate on her daughter, as this is their only chance for surgery; "I thank God for ORBIS. Even when we got lost on the way here, we just kept going because I knew this was the only chance Roma would have to get her eyes fixed. When we got here, Roma asked me if this was an aeroplane – we have never seen one before and it's so exciting to be on one. Roma is a bit nervous about everything but I am not worried at all, the nurses have explained everything to me and I know she is going to be all right."

By the time Roma is being prepared for surgery she is very tired and quite overwhelmed by the whole experience. The ORBIS nurses try to make her feel more comfortable by giving her a cuddly toy and blow bubbles with her and after a while she is calm enough for the anaesthetist to administer the general anaesthesia. Meanwhile, Dr Hidaji is talking to the trainees assembled in the lecture room, located in the very front of the Flying Eye Hospital. He is explaining the surgical procedure he will be performing on Roma and encourages everyone to ask any questions that may arise during the operation. The lecture room has audiovisual links to the



importance of using them for the prescribed period, mother and daughter are on their way back home. The family of another patient have offered them a lift home, and Norma is very pleased that they don't have to go on another long and exhausting journey as she is very eager to get back home to her family.

By the end of the week on ORBIS, both Drs Hizon and Angeles are very enthusiastic about the new skills and techniques they have picked up in just 4 days. As Dr Hizon

have never had the opportunity to receive advanced training in paediatric ophthalmology”

Dr Angeles joins in; “An estimated 100 children lose their sight every week in the Philippines, and almost half of these cases are either treatable or preventable. Early detection and treatment can save the sight of most of these children, which is why we are eager to improve our own skills so that we can better serve the children of our community”

Dr Hidaji is equally enthusiastic about his first experience as an ORBIS volunteer; “I had very high expectations of ORBIS because of what I had heard over the years. The charity has an excellent reputation, but I must admit that the programme exceeded my expectations. Everything ran so smoothly and the calibre of staff is incredibly high. Teaching is half learning,” Dr Hidaji continues, “I’ve become a much better ophthalmologist since I started teaching because it causes you to start questioning what you do. You have to really understand your subject inside and out”

operating theatre, allowing the trainees to see and talk with the surgeon and so learn from him.

The operation goes as planned, and after a couple of hours in the recovery room, Roma and Norma are escorted to the nearby Clark Air Base Hospital, where they will be spending the night. The following morning Dr Hidaji and his trainees meet at the hospital to check up on the previous day's patients. Dr Hidaji is extremely pleased with Roma's progress; “Her eye looks beautiful, it is very calm, there is no discharge – only a bit of redness which is perfectly normal. I am absolutely certain that as she grows older her vision will recover 100 per cent”

After the nurses provide Norma with eye drops and carefully explain the

explains: “After working alongside Dr. Hidaji, I am much more confident in my abilities to make the right diagnosis. I will be able to take more precise measurements for adjustments, which will result in better eye alignments. Even doing the surgery seemed easy, as Dr. Hidaji talked me through each cut and stitch. This will be incredibly helpful for me as around half my patients are children, but until now I



Update - A collection of back issues of Update (Volumes 6 - 12) is now available from TALC (www.talkuk.org). The cost, for those working in the developing world is £6. It is planned to publish further collected volumes in the future.

ORBIS in the Philippines

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It is estimated that 45 million people worldwide are blind and a further 135 million live with vision so poor that normal life is impossible. Much of this blindness is potentially preventable with simple measures and many of the cases of established blindness are treatable. Some 90 percent of those affected by blindness live in developing countries.

ORBIS, the blindness prevention charity, trains local doctors, nurses and their communities to prevent and treat avoidable blindness through its Flying Eye Hospital and hospital-based programmes. The training is carried out by medical volunteers from all over the world, who give up their time for free to pass on invaluable skills and knowledge to their colleagues in the developing world.

ORBIS has been working in the Philippines since it launched in 1982, and the Flying Eye Hospital has since visited

the country eight times. Out of a population of 85 millions, an estimated 500,000 Filipinos are blind and a further 1.3 million live with severe visual impairment. As in most other developing countries, 80 percent of the causes of blindness are preventable or treatable.

Chris Seavell, a British anaesthetist, recently spent some time working with ORBIS in the Philippines. It was his first time he had worked in a developing country and the experience was a real eye-opener for him; "The thing that really stands out after my time on board the Flying Eye Hospital was seeing children of 4-5 years who were bilaterally blind and whose blindness easily could have and would have been treated if their parents could have afforded it. It's so different from at home and I found it quite shocking. However, the feeling you get from seeing patients leaving the Flying Eye Hospital just one and a half hour after they've had their sight restored makes up for all the sad things you see. The thanks



and appreciation you get is just great. I can honestly say that this programme with ORBIS has broadened my horizons and I will definitely be putting my name down for future programmes."

Whether on an ORBIS Flying Eye Hospital programme or in partnership with local hospitals in developing countries, volunteers like Chris are the backbone of the organisation. Without their time and support, ORBIS could never have achieved what it has today.

Since its launch in 1982, ORBIS volunteers have treated thousands of patients and trained more than 63,000 local health professionals who have then gone on to train their colleagues, thus creating a ripple effect to give sight back to millions of people.



The Nepal Experience

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In 2001, after passing our exams (Primary FRCA for me and MRCPCH for my wife), my wife and I were not sure what to do next. Then it hit us – go to Nepal. After a few e-mails to a non-governmental organisation called 'INF', based in Pokhara and Kathmandu, we found ourselves on our way to Nepal.

Among other projects, INF is involved in outreach medical and surgical 'Camps' in remote areas of Nepal, and it was to this project that we were assigned. We arrived in the first week of August 2001, the middle of the monsoon season, during which time no camps run. During these few weeks we had a crash course in Nepali and I worked as an anaesthetist at a rehabilitation hospital where I quickly learnt to use drawover equipment with halothane and trilene and to ventilate with the Oxford inflating bellows.

We then set out for our first camp at Jumla in the far west of Nepal. It is in a poor and remote region where there is a strong Maoist presence. Getting there involved a 14 hours in a Landover over difficult roads and, after a two day wait, a journey by helicopter. This proved to be an old Russian Mi-17. First appearances did not inspire confidence. I couldn't say whether it was the blackened soot marks along the length of the helicopter or the appearance of the string vest clad Russian pilot, who spanner in hand, was walloping various sensitive-looking parts of the engine bay that was the most worrying!

After a surprisingly uneventful flight and a six hour hike of the valley from Jumla we arrived at the camp to find we were the only doctors there. We spent a week at the camp sleeping on the mud floor of a disused oat shed with a leaky roof and a large numbers of frogs and

fleas for company but we loved it. The people were very friendly and the camp kept us too busy to wish for Western luxuries such as electricity, running water or a toilet. We saw some 1500 patients with predominantly medical conditions who had often walked for days to get to the camp. We also did some teaching for the Certified Medical Assistants (the closest thing to doctors most patients see), on subjects such as local anaesthesia, rational prescribing and patient examination. The camp finished a few days early as the Maoists decided to hold a massive convention in Jumla and decreed that all families had to send a male representative to it.

After a few days we got back to Pokhara to start planning our first surgical camp. This was to be a cleft / plastics camp with one surgeon, one anaesthetist (me), a speech therapist, a nurse, a Nepali surgical intern, our driver and an ODA (my wife, Sally in a new role). I spent some time thinking about and then ordering all the anaesthetic drugs I would need as, once there, we would not be able to purchase anything.

Whilst at the camp we operated on a total of 34 children; seventeen with clefts and seven for plastic surgery under general anaesthesia with a further ten procedures carried out under local anaesthesia. After obtaining intravenous access, anaesthesia was induced with thiopentone and with intramuscular ketamine as an alternative. The major cases were paralysed with pancuronium after intubation under suxamethonium and hand ventilated with a halothane/trilene mixture.

Major bilateral cleft palates and lips were treated in a single operation lasting up to 3hrs.

Oxygen was supplied by a concentrator and the only reliable monitor I had was a pulse oximeter. Clinical skills such as a finger on the pulse and a precordial stethoscope, often neglected by

Western trained anaesthetists, were essential.

The patients were all extubated when fully awake and were kept in the theatre for observation, whilst the next patient was operated on. All discharged within 24 hrs and were looked after on the wards by their families. We had no surgical or anaesthetic morbidity.

Our next camp, with a gynaecology theme, was at an even more remote site called Mugu. As a larger workload was anticipated, a bigger team, 16 of us plus 1.4 tonnes of equipment was assembled. However, although some 800 women were seen in out-patients, we did relatively few operations, 40 or so only, largely because husbands refused permission for their wives to have operations. Such male "chauvinism" may account for Nepal being one of few countries in the world where the average life expectancy of men at 59 exceeds that of women at 56.

We operated in a barn with a mud floor covered with plastic sheeting and with electricity supplied by our generator. Most of the operations were carried under spinal anaesthesia. I used hyperbaric bupivacaine 0.5% often with added pethidine to extend the block and allow the surgeons to repair massive long-standing prolapses. Apart from one post-spinal headache, there was no anaesthetic morbidity.

Apart from one obvious post dural puncture headache patient, whose subsequent 'extra attention' in the eyes of the other recovering women lead to a run of PDPH like symptoms in the hope of extra free medicine and time in bed, as well as a stern talking to by our camp director, the camp passed uneventfully.

At our 4th camp, we undertook ENT surgery. In 10 days, we saw over 1400 outpatients and we operated on some 140 patients. We had 3 surgeons and 3 anaesthetists but only one theatre where we all worked simultaneously.



The surgery consisted of a mixture of mastoidectomies with ossiculoplasties using cortical bone or prostheses as well as myringoplasties and tympanoplasties. I had to learn a new anaesthetic technique: sedation with diazepam and pentazocine followed by an ear blocks with a mixture of 2% lidocaine / 0.5% bupivacaine

The work was demanding and tiring: often from 9.00 am until midnight with few breaks and it went on for nine days. It was, however, immensely rewarding to see so many adults and children obtain benefit from our efforts.

The fifth and final camp was a busy gynaecological camp: over 1400 outpatients were seen and 80 operations performed in less than 2 weeks. Here we also had our first serious peri-operative incident: a 29 year old who had a major haemorrhage after a vaginal hysterectomy. She initially seemed stable after some fluid resuscitation, but within minutes her abdomen became distended and she was hypotensive, bradycardic and clearly close to having a hypovolaemic cardiac arrest.

With assistance from a fellow anaesthetist, we performed a rapid sequence induction with a little ketamine, suxamethonium and 100mcg of adrenaline. The surgeons opened her abdomen and found a major tear in her bladder wall. She was by this stage white in appearance, was clearly developing a coagulopathy and the nearest blood bank was a 10 hour return trip away.

The only blood immediately to hand was in her urinary drainage bag so we infused it. The surgeons meanwhile were collecting unclotted blood from the abdomen and that we also transfused. We did not know her blood group but knew that 80% of the Nepali population are rhesus +ve and that most people have their blood groups recorded on their driving licences. Using 14 cannulae, 20ml syringes and three-way taps, we took around 400mls of blood from five donors known to be O +ve. Within 30 minutes of transfusing this, our patient stopped bleeding and the surgeons could complete their operation.

Although her core temperature was around 32C, her systolic BP was greater than 100mmHg, she was passing urine and she was now perfusing her peripheries sufficiently for the pulse oximeter to give a reading. We kept her sedated overnight, actively warmed her and took it in turns to hand ventilate her.

Next morning when we let the sedation wear off, she opened her eyes and we extubated her. Soon she had excellent oxygen saturation readings on breathing room air and it seemed impossible that we should be so well.

Amazing, humbling, rewarding and scary – just some of the adjectives I could put to my time in Nepal. I met some of the poorest, friendliest and determined people I have ever known in my life. Hopefully I have gained not just clinical experience but have also broadened my perspective on life in a way I may never quite do again.

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World Congress of Anaesthesiologists - Paris, April 2004.



West African delegates



Drs Vinod Nundolh (Maritius) and William Daka (Zambia) with Sir John Holmes (British Ambassador) at a reception at the British Embassy. Drs Nundolh and Daka were guests of the AAGBI.

IIFARMU: a French Initiative in Cambodia, Laos and the Indian Ocean

IIFARMU (Institut International de Formation en Anesthésie, Réanimation et Médecine d'Urgence) was created in 1991 as an association of anaesthetists and intensivists, working in partnership with universities and university hospitals in France, with the aim of providing quality training programmes in anaesthesiology, intensive care and emergency medicine for developing countries.

The association provides:

- An evaluation and determination of need
- Assesses the feasibility of establishing training programmes
- Supplies complete programmes (theoretical courses, practical training, and visit to French hospitals, evaluations and diplomas supported by French universities) in anaesthesiology, intensive care medicine and emergency medicine.

The aim of these projects is to help developing countries progressively provide their own autonomous programmes and raise the standing of the speciality in their country, with the ultimate objective of improving the quality of patient care.

Today, the association consists of more than 45 physicians and



nurses in France and has on-going projects in Southeast Asia and Indian Ocean in collaboration with Bordeaux Medical University and Bordeaux University Hospital.

KINGDOM OF CAMBODIA

IIFARMU has provided support for the creation of a nursing school specialising in anaesthesiology and intensive care in association "Médecins sans Frontière" from 1991 to 1998. The course lasts two years, is full-time and includes both practical and theoretical training.

IIFARMU provided all the training (theory and practice), supervised the selection of students and conducted all evaluations for the first three graduating classes. It then helped the Cambodian trainers to take charge of the fourth and fifth graduating classes. Over 8 years, more than 60 nurses have been trained and obtained a diploma. 90% of them are still working in the field and are recognised as competent and essential for the running of operating theatres and intensive care units all over the country.

IIFARMU is now assisting the Association of Nurse Anaesthetists of Cambodia (AISARC) and supports their annual meeting. A sixth graduating class is about to start in 2004 entirely under

Cambodian supervision and with local financial support.

Certificate of specialisation in anaesthesiology and intensive care medicine for physicians

Two graduating classes, each of 10 physicians, completed their training between 1992 and 1998 with support from IIFARMU. It provided the complete programme of training, including candidate selection, theoretical



and practical training in Cambodia, evaluations, and a six month training period in France. The programme lasts three and a half years and is full-time. It is supported by the universities of Bordeaux II and Paris XIII and a diploma is awarded by these universities.

The graduate doctors are now recognised as specialists in Cambodia, and most of them hold positions of responsibility in Cambodian hospitals and participate in the ongoing training of other nurses and doctors.

The training programme has been under the control of the Phnom Penh University of Medical Science since 1998 but with IIFARMU and the University of Bordeaux II and Paris XIII assisting in the programme with regular evaluations and reinforcement training as well as continuing to host the physicians when they



visit French hospitals at the completion of their training.

The anaesthesiologists of Cambodia have now formed a Society of Anaesthesiologists (SCARMU) that organizes regular activities and holds an annual meeting.

On-going Projects include:

- support for AISARC and its annual meeting
- support for trainers at the nurse anaesthetist training school (6th graduating class and thereafter)
- evaluation and assessment of anaesthetic practice in Cambodia
- support for the annual meeting of physician anaesthetists (SACRMU)
- support to future graduating classes
- hosting of physicians in French hospitals

PEOPLE'S DEMOCRATIC REPUBLIC OF LAOS

In Laos, the training programme for anaesthesiology, intensive care medicine and emergency medicine started in 1989.



From 1989 to 1994, short training sessions (practical and refresher courses) were conducted. At the same time, we assessed the training needs in anaesthesiology and identified potential Lao trainers.

Between 1994 and 1998, with the French organisation (Comité de Coopération avec le Laos), we assisted in the development of the main anaesthesia and intensive care unit at the Mahosot Hospital. The aim of this programme was to rehabilitate and re-equip the surgical units and the anaesthesia and intensive care units so that they could become a national referral and training centre for future Lao doctors and nurses.

From 1996 to 2000 the first class of doctors with diplomas in anaesthesiology and intensive care was trained. Twelve doctors obtained a specialist diploma from the University of Bordeaux and are now recognised as specialists and trainers in their country.

In 2002, a second course with 10 specialists started, is currently on-going and they should obtain their diploma in 2005. In addition, training in emergency medicine was started for doctors from provincial hospitals and 18 doctors obtained their certificate in 2003. A second course is currently underway.

Details of the ongoing programmes:

Certificate of specialisation in anaesthesiology and intensive care medicine for physicians (CESARMU)

This programme is based on European programmes for

specialists but adapted to the needs of Laos.

Physicians are selected by competitive examination and undertake a full-time training course lasting three and a half years. It consists of:

- Full-time practice in a Lao referral centres, supervised by Lao trainers and members of IIFARMU
- 6-month training in a French university hospital 12 course modules each lasting 15 days
- ongoing and final evaluation the drafting of a final report (mémoire)



The participation of Lao physicians in the programme is progressively increasing with the aim of making the programmes self-sufficient. After obtaining their diploma, most of the physicians take on responsibilities in the main hospital of the country and join the training team. Teacher training is included for future trainers.

Emergency Medicine

The Emergency Medicine programme is aimed at Lao physicians from mid-size hospitals at the provincial and district level. It seeks to improve emergency care in rural areas taking into account both the lack of doctors and facilities.

The training programme is held in Vientiane, is very basic

and consists of four modules on the management of practical problems. The training is conducted in the Lao language by Lao trainers under IIFARMU supervision.

This programme is original in that it uses Lao experts as trainers but with assistance for their teaching techniques as well as supervision of the content and objectives of the course. This is a "trial" programme for the Lao trainers aimed at helping them become autonomous.

Evaluation and training of nurses in intensive care at Mahosot Hospital

Recovery room and intensive care unit nurses attended a programme aimed at improving post-operative care. This programme was largely conducted by Lao physicians with some input from French physicians and specialised nurses.

Continuing projects include:

- The creation of a school for nurse anaesthetists
- Support for the training programme for Physicians (the third graduating class will start in 2004/2005 and thereafter the programme will be autonomous)
- Support for the emergency medicine trainers (third graduating class and thereafter)
- Creation and support for annual meetings in emergency medicine and anaesthesiology and critical care

- Regional exchange projects and training programmes
- An assessment of the quality in peri-operative care in Laos and Cambodia and an evaluation of those who have been trained in our programmes.

Indian Ocean

Between 1998 and 2002, IFFARMU has participated in the training of 16 physicians to enable them to obtain a diploma as specialists in anaesthesiology and intensive care, following the same principles that were applied in Laos and Cambodia.

The project called PARMU, was conducted under the supervision of Bordeaux University and ISPED (Institute of Epidemiology and Development) and financed by French Ministry of Foreign Affairs. Members of IIFARMU supervised the training of the students and assisted them during their training period (one year) in France.

The students, selected by competitive examination came from Mauritius, Madagascar, the Comoros Islands, Djibouti, Seychelles and Mozambique.

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Teaching Anaesthesia in Madagascar 1987-2001

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During the years 1987 to 2001, the authors taught four anaesthesia courses for fifteen nurses and one physician. Dr. Fell taught three courses and Dr. McCaughey taught one. We taught under the auspices of the Health Department of the Lutheran Church (Madagascar). The Health Department did a marvellous job of making the necessary arrangements.

The Health Department of the Lutheran Church (Madagascar) has seven hospitals with surgical capabilities. They range in size from twenty to one hundred twenty beds. The hospitals usually have two or more anaesthetists. Anaesthesia equipment varies among the hospitals. The equipment includes: pressure oxygen machines with circle systems and halothane; drawover halothane OMV vaporizers with oxygen concentrators; and, Ambu bags with oxygen and ketamine. There are a few EMO machines but ether is not usually available. Paediatric circuits and techniques include intramuscular ketamine, OMV vaporizers with a Paedivalve, various T piece assemblies and a Farman entrainer.

In contrast to countries with highly developed economies, there are few older patients, patients on long-term medication and patients with long term cardiac, respiratory, endocrine or renal diseases. The surgical patients in Madagascar tend to be younger and to have a higher incidence of acute infections. They also suffered from the effects of

difficult transportation and inadequate preventive medical care.

Each six-week course had four hard working and enthusiastic students who were chosen by their home hospitals. Most, but not all, of the students had experience working in the theatre although very few had ever actually given an anaesthetic.

The courses put considerable pressure on the students. There were daily 1-2 hour interactive classes, weekly written examinations and a final oral examination. The concepts of "Preparation" and "Vigilance" were very, very strongly emphasized. The basics of applied pharmacology and cardiac and respiratory physiology were repeatedly considered and often discussed in the theatre. Because of the importance of airway management and the short duration of the course, very few spinal anaesthetics were given. However, the autonomic nervous system and the management of spinal anaesthesia were important aspects of the course.

The text was the French translation of Anaesthesia at the District Hospital by Michael Dobson. The French translation of a 31-page booklet of basic anatomy and physiology was used extensively as the basis for the daily lectures. The booklet was developed over many years and frequently modified by the lead author. It can be perused at: (<http://www.olympiaanaesthesia.com/considerations/>).

The students were divided into two teams of two students each. The students began giving anaesthetics the first day of the

course and took night call. They needed to quickly acquire knowledge, independent management skills and confidence. Therefore, the authors intentionally gradually decreased their initial constant presence in the theatre to almost no presence in the theatre during the last week.

Except for one course that had a marked paucity of surgical procedures, there was a minimum of 1.5 general anaesthetics per student per day.

Most of the students continue to give unsupervised service in their hospitals. As requested by the authors, two of the students continue to be helped by other anaesthetists. Restrictions have been placed by a hospital on one of the other students.

Three students from the 1987 course worked as anaesthetists for an average of ten years. They continue working as nurses. The fourth student graduated from a two-year government anaesthesia program in 2002.

All of the students from the 1990 and 1998 courses continue to give anaesthetics. One student from each class graduated from the government anaesthesia program in 2002.

All of the students from the 2001 course continue to give anaesthetics.

Not all of the anaesthetics in the Lutheran hospitals are given by graduates of these four courses. The other anaesthetic providers are self taught, taught by surgeons or by the occasional visiting physician anaesthetist. One anaesthetist studied for several months at Kilimanjaro Christian Medical Centre in Moshi, Tanzania. Most anaesthetists in the system attended one of our courses either as a primary participant or for purposes of continuing education. There are no physician anaesthesia specialists in the Health Department of the

Year of Anaesthesia	Students	Year of Anaesthesia Service to 2002
1987	4	45
1990	4	48
1998	4	16
2001	4	4

Lutheran Church (Madagascar).

As in most places in the world, there are no anaesthetic morbidity and mortality statistics available from the Lutheran hospitals.

However, the current total of 113 years of providing anaesthesia care with sixteen students from four six-week courses is noteworthy.

The authors have experience teaching anaesthesia in other areas of the world and believe that the success of the Madagascar courses is related to:

- The strong support and stability of the Lutheran Church of Madagascar.
- The choice of students.
- The adequate numbers of surgical procedures during the courses.
- The return of the students to their home hospitals.
- The very rigorous anaesthetic courses that emphasized "Preparation," "Vigilance" and basic physiologic principles.

The primary weaknesses in the Madagascar Lutheran anaesthesia system are the isolation of the anaesthetists, the lack of routine continuing education and the maintenance of equipment. One of the graduates of our course and of the government anaesthesia program has been assigned to address these problems.

We do not believe that six-week anaesthetic courses for nurses are the long-term answer to a poor country's anaesthetic manpower problems. However, such courses can help provide satisfactory anaesthetic care while the country develops comprehensive training programs for paramedical anaesthetists and/or physician anaesthetists.

The authors are grateful to Dr. Stanley Quanbeck of the Health Department of the Lutheran Church (Madagascar) for his assistance in gathering information for this article.

The Glostavent in Malawi

Kenneth Kapatuka & John Gawanika

Malawi is a small land-locked country in East Africa. It has an area of some 118,000 sq km and a population of 11.5 million. It is one of the poorest and least developed countries in the world: the per capital Gross Domestic Product is only \$600 per year (UK \$25,500). Infant mortality is 105 per 1,000 live births (UK 5.2) and life expectancy is 38 years (UK 78 years).

Queen Elizabeth Central Hospital (QECH) is a one thousand bedded hospital in Blantyre, the largest city in Malawi. Although it is in the southern part of the country, it serves as a tertiary referral hospital for the whole country. It is also a teaching hospital serving a number of health institutions including the Malawi College of Medicine, the Malawi School of Anaesthesia and the Kamuzu College of Nursing. It has ten operating theatres that are busy most of the time carrying out an extensive range of surgical procedures. It is, thus, a good site on which to test the Glostavent.

The first three Glostavents to come to Malawi arrived some six months ago in July 2003. We inspected the machines and tested them for faults before they were introduced into clinical use the QECH. They have since been used to anaesthetise a large number of patients, both adults and children, for a variety of elective and emergency surgical procedures. The machine has proved easy to operate, even by the students on our anaesthetic training course.

As the Glostavent includes an integral ventilator it has proved ideal for ventilating septic patients and those undergoing eye surgery and having burr holes performed. On three occasions we have



used it to ventilate head-injured patients in the anaesthetic recovery room pending their admission to the Intensive Care Unit.

The Malawi Ministry of Health has approved the Glostavent and it has bought a further two machines for use in rural district hospitals. The Lions Club has bought a further machine for use in the Eye Department at QECH and we expect further machines to be purchased for use throughout the country.

We hope to organise familiarisation courses on the Glostavent for all Malawian anaesthetists as the machine is clearly here to stay in Malawi.

We would like to thank the staff of the Anaesthesia Department at Gloucester Royal Hospital in the UK for their kindness and support during our visit to learn about the Glostavent and to the Dutch Government's Exit Strategy Programme for purchasing the first machines for use in the Department of Anaesthesia of the College of Medicine.

An Audit of the routine use of Furosemide during Transurethral Resection of the Prostate (TURP) using water as the irrigating fluid.

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Summary

The objective of this audit was to review a technique of performing TURP using filtered, boiled, cooled water as irrigating fluid with the routine use of a diuretic to prevent complications that may be associated with the systemic absorption of water. The operations were performed in a number of private hospitals in Ibadan, Nigeria over a period of 9 years (1994-2003).

The patients were aged between 50-95 years and although the majority did not have significant risk factors such as non-insulin dependent diabetes mellitus, hypertension and previous myocardial infarction, their ASA classification ranged from ASA 1-5. TURP syndrome was not seen and no patient suffered any complication attributable to haemolysis.

Method and Material

Data was obtained retrospectively from the case notes of all patients who underwent TURP in three hospitals in Ibadan, Nigeria between 1994-2003. Five hundred patients were reviewed. Data collected included age, ASA

classification, pre- and post-operative urea and electrolyte values (only available for 158 cases), duration of surgery, complications of surgery and anaesthesia, weight of resected gland, volume of irrigation fluid used and duration of hospital stay.

Prostatic enlargement was confirmed by a combination of physical and ultrasound examinations. Routinely, haemoglobin, electrolyte and urea values were measured and an ECG and chest X-ray performed. Following an anaesthetic evaluation, written informed consent for surgery and anaesthesia was obtained.

Anaesthesia

Both regional and general anaesthesia were employed. The vast majority of the patients received spinal anaesthesia with hyperbaric 0.5% bupivacaine or more recently L-bupivacaine. Following pre-loading with saline/Hartmann's solution, an intrathecal injection was performed at the L 4-5 interspace with the intention of limiting the extent of the block to T10.

Inhalational anaesthesia was used for four patients who were not suitable for subarachnoid block. They all breathed spontaneously a mixture of nitrous oxide, oxygen and halothane 1-2%.

Automatic blood pressure monitoring and pulse oximetry was used for all patients.

Surgical Method

An initial urethroscopy is done to evaluate the lower urinary tract and exclude other pathologies such as urethral

stricture, bladder tumour, bladder neck obstruction and bladder stones. Resection was performed with a 26 CH Storz resectoscope with two-way channels. Furosemide 20mg intravenously and 20mg intramuscularly was given at the end of resection before haemostasis was started. It was considered that this stage would probably correspond to the maximal point of water (irrigant) reabsorption. Furosemide was given earlier if the surgeon indicated that there was a capsular perforation. All patients received antibiotics intra-operatively.

In the post-operative period, the patients' pulse rate, blood pressure and temperature were measured half hourly for the first 24 hours and then 4 hourly until discharge. The urinary output was also measured every hour until the catheter was removed. Post-operatively the packed cell volume (PCV), urea and electrolytes were measured daily in 158 of the 500 patients. We did not have facilities to routinely look for haemolysis in either blood or urine.

Urethral catheters were removed between 24 hours and 72 hours after surgery with an average of 2 days.

Results

Between March 1994 and September, 2003 the first 500 TURPs done using water as the irrigation fluid and with prophylactic furosemide were audited. The patient age range was 50-95 years with a mean of 74 years. The duration of the resection ranged from 30

Table 1: Patient age, weight of resected prostate gland, duration of procedure and volume of irrigation fluid used.

Total number of patients	500	
	Range	Mean
Age	50-95 years	74 years
Weight of resected gland	2-71.5gms	36.7 gms
Duration of hospital stay	2-5 days	3.5 days
Duration of procedure	30mins - 3 hours	90 mins
Volume of irrigation fluid	6-20 litres	12 litres

minutes to 3hrs with a mean of 105 minutes. The weight of the resected glands and the volume of irrigation fluid used are shown in Table 1. The pre-operative packed cell volume and the electrolyte values of all patients in this series were within normal range for this environment. The range and mean of post-operative PCV and electrolytes of 158 patients compared with their pre-operative values are shown in Table 2.

The range and mean of post-operative pulse rate, blood pressure and temperatures are

indicated in Table 3. The length of hospital stay after resection ranged from 2-5 days with a mean of 3.5 days. Haemorrhage was not a major complication of the procedure. Fifty percent of the patients were noted to have suffered from shivering. None of the 158 patients who had their electrolytes measured within forty-eight hours of resection showed any abnormalities. Two patients required blood transfusion and each received 2 pints of blood. Other complications noted during surgery and post-operatively are

Table 2: Pre- and post-operative Electrolyte and Urea values (158 patients)

	Pre-op	Post-op
Sodium	140-145mEq/l	138-145mEq/l
Potassium	3.5 - 4.8mEq/l	3.6 - 4.0 mEq/l
Chloride	101 - 110mEq/l	101 - 105mEq/l
Bicarbonate	25 - 30mEq/l	24 - 30mEq/l
PCV	35 - 42%	34 - 40%

Table 3: Complications of Spinal Anaesthesia

Complications	Number of Patients	Percentage (%)
Total	500	100.0
Number under spinal	946	98.4
Hypertension	2	0.8
Neck stiffness / pain	256	55.2
Vomiting	8	1.6%
Infection	Nil	0%

shown in Table 3. The TURP syndrome, characterized by central nervous system (CNS) and cardiovascular system (CVS) sign and symptoms that include visual disturbances, nausea and vomiting, an altered state of consciousness, hypertension or hypotension, was not seen in any of our patients. There were no deaths in this series.

DISCUSSION

Water is not popular as an irrigating fluid during TURP,^{1,2,3,4} because of concerns about its safety. Not only can water be absorbed and cause fluid overloading of the circulation, but it can also precipitate haemolysis, haemoglobineamia and renal failure.^{5,6} Glycine solutions are generally preferred. We decided to use water as an irrigation fluid because of its ready availability, low cost and because of its good optical properties. An additional advantage of water is that, unlike some of the solutes and/or their metabolites found in other irrigating fluids, it is less likely to precipitate encephalopathy which is known to contribute to the pathophysiology of the TURP syndrome.^{7,8,9}

However, because of concerns about its safety, we administered furosemide prophylactically to induce a diuresis and prevent complications precipitated by excess water absorption. TURP syndrome is said to occur in 10-15% of patients undergoing prostatic resection when strict criteria are applied.^{10, 11, 12} This audit showed no evidence of this complication and our experience with 500 patients over a nine

year period leads us to suggest that the technique of using sterile water irrigation coupled with the routine use of diuretics during TURP is a cost-effective option for developing countries.

Some patients may have bilateral ureteric dilatation and hydronephrosis due to the outflow obstruction leading to renal insufficiency with uraemia and elevated-serum potassium levels. This will require correction with continuous catheter drainage before anaesthesia is considered. However, these were not problems encountered in our series.

As the majority of patients undergoing prostatectomy are elderly, most can be assumed to have cardiac disease and must be carefully evaluated before undergoing anaesthesia and surgery¹³ Pre-operatively, all our patients had a 12 lead ECG. Fortunately, using the ASA classification,¹⁴ the majority of our patients did not appear to be at high risk of peri-operative complications.

In general terms, long standing drug therapy should be continued until the day of operation and resumed as soon as the patients commence oral intake. Only 2 patients in our series were known diabetics and required conversion to insulin therapy peri-operatively because of their clinical status (ASA 3). All other diabetic patients remained on oral hypoglycaemic agents.

Regional anaesthesia is the anaesthetic technique of choice for many authors due to the minimal disturbance it causes to the respiratory and cardiovascular systems if the height of the block

is limited to T10. A block up to T10 is unlikely to produce a precipitous drop in systolic blood pressure that would be a danger to elderly patients with possible myocardial insufficiency. This was the situation with all the cases undertaken under regional anaesthesia in our series even though fluid pre-loading was limited to one pint of crystalloid.

Regional anaesthesia also makes it easy to notice any confusion or disorientation that may occur if TURP syndrome is starting to develop. It is caused by the irrigating fluid being absorbed through the venous sinuses of the resected prostatic bed. The syndrome has also been reported after endometrial ablation^{16, 17} and arthroscopic procedure requiring irrigation solution.¹⁸ It has been reported to occur as quickly as 15 minutes after the start of resection or up to more than 24 hours post-operatively.^{19, 20, 21} The syndrome has been reported in as many as 10-15% of TURPs^{22, 23} and despite its seemingly consistent aetiology, it lacks a stereotypical presentation and diagnosis can be difficult.^{24, 25}

1.5% glycine solution, the normal fluid of choice¹⁵ in affluent countries is not readily available and is far too expensive in this part of the world. Elective diuretic therapy, given as directed by the operating surgeon who is able to visually estimate how much absorption may be occurring and whether the capsule has been disrupted, was effective in all 500 patients.

The findings of this audit would seem to suggest that water irrigation along with the use of parenteral furosemide is a safe

technique for the transurethral resection of the prostate gland when glycine is not readily available, allowing the other advantages of TURP such as short hospital stay, minimal morbidity and mortality to be preserved.

Conclusion

In developing countries open prostatectomy remains the mainstay of treating symptoms secondary to bladder outflow obstruction but with the attendant risks of haemorrhage, transfusion reaction and significant morbidity and mortality accompanying the surgery. This audit of TURP has shown that using filtered, boiled, cooled water can be a safe alternative to other expensive irrigating fluids that are not readily available in poor countries. An experienced surgeon who can readily identify capsular disruption is essential.

REFERENCES

1. Hatch P.D. Surgical and anaesthetic considerations in transurethral resection of the prostate, *Anaesth Intensive Care*: 1987; 15, 203-11
2. Akan H., Sargin S, Dalva I, Akman Y, Tazicioglu A. and Cetin S. Effects of distilled water and mixture of sorbitol-mannitol irrigation fluid on fluid-electrolyte balance in patients under-going transurethral prostatectomy. *Int Urol & Nephrol* 1997; 29, 575-580.
3. Rao PN. Fluid absorption during urological endoscopy, *Br J Urol* 1987; 60, 93-9
4. Hurlbert BJ, Wingard DW. Water intoxication after 15 minutes of transurethral resection of the prostate. *Anaesthesiology* 1979; 50, 355-6.
5. Creevy CD, Reiser MP. The importance of hemolysis in transurethral prostatic resection; severe and fatal reaction associated with the use of distilled water. *J Urol* 1963; 89, 900-5.
6. Shittu O.B. Transurethral Resection of the Prostate gland using Dextrose 2.5%

solution as irrigation fluid. Proceedings of the Second General Assembly. Pan African Association of Surgeons. 1998: 143 – 149.

7. Henderson DJ, Middleton RG. Coma from hyponatremia following transurethral resection of the prostate. *Urology* 1980;15, 267-71.

8. Hoekstra PT, Kahnoski R, McCamish MA, Bergen W, Heetderks DR. Transurethral prostatic resection syndrome – a new perspective: encephalopathy with associated hyperammonemia. *J Urology* 1983; 2; 130, 704-7.

9. Aasheim GM. Hyponatremia during transurethral surgery. *Can Anaesth Soc J* 1973; 20, 274-80.

10. Roos N.P, Wrenberg J.E, Malentra D.J, et al. Mortality and resection of the open and transurethral resection of the prostate for benign prostatic hyperplasia. *N. Eng. J. Med.* 1989: 320, 1120.

11. Capenter RL. Incidence and risk factors for side effect of Spinal anaesthesia. *Anaesthesiology* 1992; 76: 906-916.

12. Lyle E, Kirson DD. Transurethral resection of the prostate. *Anaesthesia Secrets* Edited by James Duke et al, Hanley & Belfus. Philadelphia Pg. 472-8

13. Prys-Roberts C, Greene LT, Meloche, Foex P (i) Studies of anaesthesia in relation to hypertension (ii) Homodynamic consequences of induction and endotracheal intubation. *British Journal of Anaesthesia* 1971: 43, 531.

14. Saklad M. ASA Classification. *Anesthesiology* 1941: p281.

15. Norlen H, Allgen L, Vinnars E, Bedrelidou-Clesson G. Glycine solution as an irrigation agent during transurethral prostatic resection. *Scan J. Urol Nephrol.* 1986: 20, 19 – 20

16. Rosenberg M.K. Hyponatremic encephalopathy after rollerball endometrial ablation. *Anaesth Analg* 1995: 80, 1046-8.

17. Arieff AI, Ayus JC. Endometrial ablation complicated by fatal hyponatremic encephalopathy. *JAMA* 1993: 270, 1230-2

18. Rao PN, Fluid absorption during transurethral endoscopy. *Br J Urol.* 1987: 60, 93-9.

19. Hubert B, Wingard DW. Water intoxication after 15 minutes of transurethral resection of the prostate. *Anesthesiology* 1979: 50, 355-6.

20. Aasheim G.M .Hyperaemia during transurethral surgery. *Can Anaesth. Soc J* 1973: 20, 274-80.

21. Hjertberg H, Petterson B. The use of a bladder pressure warning device during transurethral prostatic resection decreases absorption irrigating fluid. *Br J Urol* 1992: 69, 56-60.

22. Schearer RJ, Stanfield NJ. Fluid absorption during transurethral resection [letter] *B Med. J.* 1981: 284, 740.

23. Ghanem AN, Ward JP. Osmotic and metabolic sequelae of volumetric overload in relation to the TURP syndrome. *Br J Urol.* 1990: 66, 71-8.

24. Kolmert T, Noren H. Transurethral resection of the prostate: a review 1111 cases. *Int Urol Nephrol* 1989: 21, 47-55.

Gravenstein D. Transurethral resection of the prostate (TURP) Syndrome: A Review of the Pathophysiology and management. *Anesth Anal* 1997: 84, 438-46.

Editorial Note:

An excellent review of anaesthesia for Transurethral Resection of the Prostate including a review of TURP syndrome can be found in Update in Anaesthesia (2003) 16:21-26

Letters to the Editor

Intrathecal Pethidine (World Anaesthesia News. December 2003)

Dr Joe Silsby

SpR Frenchay Hospital,
Bristol, UK.

jsilsby@doctors.org.uk

I read with interest the article by Mr Banda from Malawi on the use of intrathecal pethidine and the editor's comments on his personal experience of using it. Although my own experiences with the technique are observational rather than as part of a controlled trial, I believe that they are worth recording. Whilst working in Nepal with the International Nepal Fellowship I gained some experience of spinal anaesthesia with combined bupivacaine 0.5% and pethidine.

At one Gynaecology Camp, we soon realised that plain 0.5% bupivacaine alone was inadequate for complicated abdominal hysterectomies or the more prolonged prolapse repairs. As we did not have the equipment to perform continuous epidural anaesthesia, we decided to add pethidine to our 0.5% bupivacaine. We added 25mg pethidine to 2-2.5 mls 0.5% bupivacaine.

When pethidine was added, we observed an improvement in the quality and in the duration of anaesthetic block as well as longer post-operative analgesia and a reduced need for intra-operative supplementation with ketamine. However, the incidence of pruritis was much increased and that of symptomatic hypotension, nausea

and vomiting appeared slightly higher than that at another camp where (with no pethidine available) we used plain 0.5% bupivacaine alone.

Those receiving intrathecal pethidine may have had lower arterial oxygen saturations on air but we only had one unreliable pulse oximeter shared between two tables, we routinely administered oxygen via nasal cannulae from a generator powered oxygen concentrator. In any event, our patients did not seem distressed but they were a stoical and uncomplaining group!

Although it is by no means perfect, my own experiences with pethidine would encourage me to use it again should the need arise, albeit, possibly in a reduced dose.

The Cyber Medical College - A vision for eLearning

Prof G N Kenny

www.cybermedicalcollege.com

The Cyber medical College, originally founded by the Royal College of Physicians and Surgeons of Glasgow (RCSPG) was established as a not-for-profit charity in September 2001 with the RCPSG and the Royal College of Anaesthetists (RCA) as founder educational members. The anaesthesia pages of the Cyber Medical College were officially launched at the College Tutor's meeting of the RCA in Manchester on 3 July 2003.

Why a Cyber Medical College?

CEPD is a requirement of good medical practice and one of the objects for which the RCA was incorporated is to "educate medical practitioners to maintain the highest possible standards of professional competence in the practice of anaesthesia..." *Creating new educational material is expensive and time consuming but the internet offers a cost efficient and effective way of utilising existing materials. However, the growing body of information available on the internet is time consuming to identify and there is little or no quality assurance of accuracy or relevance. The Cyber medical College aims to become the UK's primary "portal" to quality assured, internet sourced, clinical and professional learning resources.*

What is the Cyber Medical College?

The Cyber medical College is an educational facility that reduces the time spent searching for and accessing suitable learning material by linking users to appropriate resources. Easily navigated, career-orientated pathways lead the user to reliable, relevant, peer-reviewed materials appropriate to the stage of their development. Five main "portal doorways" lead users to information on:

Learning – access to a wide range of learning resources, including tailor-made material where editors have identified gaps in existing resources. Learning "assets" are provided in a variety of formats including URL's HTML files, Adobe Acrobat files,

PowerPoint presentations, video and audio files, image blanks and discussion groups.

Organisations – links to relevant organisations and societies worldwide.

Information – the history of medicine, ethics, telemedicine libraries etc

Resources - search engines, medical media services, useful tools etc

Patients - a trusted and reliable information source for patients.

Who's it for?

The long-term objective of the Cyber Medical College is to provide "portal doorways" for everyone working in healthcare – doctors, dentists, nurses and midwives, allied health professionals complementary therapists, pharmacists, supporting health practitioners and the next generation of would-be practitioners. The ambition will only be realised through mutually beneficial relationships between a large group of educational and professional bodies. In the meantime, users are themselves urged to contribute and recommended resources that they have found useful. The potential benefit for healthcare workers in the developing world being able to link with and learn from their colleagues across the world opens up important channels for improved healthcare. Patients can also gain considerable benefit and reassurance from the information contained within the "patients portal."

What does it cost?

Access to the Cyber Medical College is free to the end user.

Who is involved?

Medical Royal Colleges, professional organisations and education providers can become Educational Members of the Cyber Medical College. Educational Members contribute resources to the project, including their own learning material, thus allowing all users to benefit. By working together the costs of providing online learning can be shared, unnecessary duplication avoided and valuable resources conserved. In partnership with the RCPSG, the RCA is supporting the early stages of development while other relationships are being

developed. The service is intended to remain free to the end user, so alternative funding sources must be found to all substantial expansion. To this end, collaborative relationships with other organisations with responsibility for medical and healthcare education are actively being developed.

What about quality?

The validation of learning resources is essential. The Cyber Medical College handles this by grouping resources under specific "learning pathways" by which a user is guided to access appropriate material. Quality assurance comes from the recruitment of subject matter expert editors, appointed by the Educational Members, who find, review and select suitable material from the internet. The effectiveness and success of the Cyber Medical College will in time be assessed by the testimony of its users.

What's next?

Users can already create their own secure CEPD portfolio within the Cyber Medical College. Here they can record their CEPD plans and maintain the documentation required for appraisal and revalidation. At its meeting in June the RCA College Council approved this as the preferred means for Fellows and Members to record and draw down reports in formats acceptable to and recognised by the RCA. Plans are in hand to link this facility in some way to the CEPD "core topics" and to develop a diary of CEPD approved events.

If you want to find out more about the Cyber Medical College there is no better way than to log on to www.cybermedicalcollege.com If you come across suitable learning material on the internet, would like to donate learning material developed by yourself and/or are interested in becoming a subject matter editor, please send details to Ms Sarah Lown at [email slown@rcoa.ac.uk](mailto:slown@rcoa.ac.uk)

This article first appeared in the Royal College of Anaesthetists Bulletin 21, September 2003, pg 1051-1052. It is reproduced here with the kind permission of the Royal College with whom copyright remains.

Appropriate Medical Technology – a proposal

Patricia Coyle FANZCA, FRCA
coylep@kreb.nsw.edu.au

I have worked for more than 10 years as an anaesthetist in developing countries and maintain an interest in anaesthesia and the use of appropriate technology in healthcare in such countries. I would welcome comments and constructive criticism on the ideas I propose as well as expressions of interest in the solutions I suggest.

What is meant by “appropriate” when applied to medical equipment can be controversial, though in everyday use its meaning is usually quite clear: behaviour, dress, speech and so on have to be suitable to the context and their purpose. Likewise, medical equipment, techniques and training particularly of paramedical personnel, must be appropriate to the existing and potential situation. In the developing world, where resources are limited, appropriate technology is of paramount importance.

Considerable quantities of new medical equipment are sometimes donated by Western governments to the governments of developing countries. Other donations come from hospitals, universities and aid organisations: these are often recycled or reconditioned items in good working order that are no longer needed. Equipment may also be purchased by hospital administrators without adequate consultation with the clinicians and engineers who will have to use and service it.

Everyone who has worked in the developing world will be aware of the presence of equipment, either purchased or donated, which is inappropriate to the environment. One sees graveyards of such equipment, and yet may be approached by well-meaning people wanting unknowingly to add to them at considerable expense.

Donated equipment may also be potentially dangerous if it has been modified and is being made to function in a role for which it was not designed. If modifications have to be made, they should be carried out but an appropriate biomedical engineer/technician and then adequately documented, both on paper and on the equipment itself.

Given the above, it is not surprising that guideline on appropriate donations exist. The World Federation of Societies of Anaesthesiologists (WFSA) produced a useful document in 1999 but it is not readily accessible. I would suggest that what is required is a readily accessible, web-based source of information and guidance to enable would-be donors and recipients to match their offers and requests. Such a brokerage service would be one ‘owned’ and managed by a team of ‘experts’ with both clinical and engineering/technical expertise and experience.

I presented a proposal for such a service at the Institute of Electrical Engineers (IEE) Seminar on “Appropriate Medical Technology for the Developing World” held in London February 2004. I suggest

a managing consortium be formed by World Anaesthesia (WA) and the IEE. I hope that WA members will discuss this proposal further with bioengineers. Already one society of anaesthetists has indicated its preparedness to assist financially in the implementation of the concept. I do not propose that existing databases or donation guidelines are ignored but rather that they are given greater publicity and hence become more useful.

I would especially like to see a database of Do It Yourself (DIY) inventions and improvisations. Already pulse meters, arterial pressure monitors, central venous pressure monitors are among the items that have been designed and are being used appropriately.

Please contact me if you are interested in helping to develop such a service or if you have any constructive criticisms to make on my proposal.

Editorial Note:

Dr Coyle is too modest to mention that she worked in Uganda during most of the 1980s when the country was in turmoil. She has also worked in Ethiopia, with the Red Cross in Thailand and Pakistan and with Médecins Sans Frontière in East Timor. She was awarded an honorary Fellowship by the College of Anaesthetists in the UK in 1988. The Australian Government awarded her its highest honour when she became an Officer of the Order of Australia in 2001.

Useful Information

World Federation of Societies of Anaesthesiologists (WFSA)

21 Portland Place, London,
W1B 1PF
UK

Tel: (+44) 0207 631 8880

Fax: (+44) 0207 631 8882

Email: office@wfsa-office.org
info@wfsa-office.org

Courses in Anaesthesia for the Developing World.

Oxford (UK): July (annually).

Contact: Dr. M. Dobson

Department of Anaesthesia

John Radcliffe Hospital

Headley Way

Headington,

Oxford OX3 9DU

UK

Tel: (+44) 01865 221589

E-mail: michael.dobson@ndm.ox.ac.uk

Bristol (UK): December (annually).

Contact: Dr. Claire Jewkes

Department of Anaesthesia

Frenchay Hospital

Bristol BS16 ILE

UK

Tel: (+44) 01179 701212

Remote Situations, Difficult Circumstances, Developing Country Anaesthesia

Hobart or Launceston (alternate years), Tasmania, Australia

Contact: Dr Haydn Perndt

Royal Hobart Hospital

GPO Box 1061-L

Hobart, TAS 7001

Australia

Email: haydn.perndt@utas.edu.au

Equipment collection and distribution to the developing world

Contact: ECHO

Ullswater Crescent, Coulsdon

Surrey CR3 2HR UK

Tel: (+44) 020 8660 2220

Carelift International Inc.

185 Walnut Street (Floor 22)

Philadelphia P.A. 19103

USA

Tel: (+1) 215 535 3590

Dr. William Rosenblatt

REMEDY

Dept. of Anaesthesia

Yale University School of Medicine

333 Cedar Street, New Haven

CT 06510

USA

Book Aid International

39-41 Coldharbour Lane

Camberwell

London SE5 9NR

UK

Tel: (+44) 020 7733 3577

The organisation is interested in receiving recent complete sets of journals and newish text books. These are collected free and distributed by Rotarians.

Society for Education in Anesthesia

International members are invited to join this Society that promotes techniques and excellence in the teaching of Anesthesia.

520N Northwest Highway

Park Ridge, Illinois 60069-2573

USA

Tel: (847) 825 5586

Fax: (847) 825 5658

Email: sea@asahq.org

Web: www.seahq.org

The TOKTEN Project

Expatriate nationals returning to their country of origin are invited to apply for the post of project expert. Each project is sponsored by the United Nations who would meet the cost of international travel and pay a subsistence allowance (\$90/day). Applications should be made to the Minister of Health of the host developing nation.

Technical Assistance at Low Cost (TALC)

Contact: David Moreley

Institute of Child Health

Guilford Street

London WC1N 1EHH

UK

Douleurs san Frontieres (DSF).

Goals:

1. To participate, to create or to encourage any structure involved in the treatment of pain and suffering (cancer pain, AIDS, acute pain, etc..)
2. To search for therapeutic methods, to provide training and to propagate knowledge about pain and suffering especially in developing countries.

For further information contact:

Douleurs sans Frontieres

Docteur Alain Serrie

Hôpital Lariboisière

2, rue Ambroise Paré

75010 Paris, France

Tel: (+33) 1 49 95 81 77

Fax: (+33) 1 49 95 69 98

Email: alain.serrie@lrb.ap-hop-paris.fr

or

Docteur Jacques Meynadier

Centre Oscar Lambret

BP 307 - 59020 Lille cedex, France

Tel: (+33) 3 20 29 59 89

Fax: (+33) 3 20 29 59 97

Email: j-meynadier@o-lambret.fr

International Anesthesia Research Society (IARS)

2 Summit Park Drive 140
Cleveland, Ohio 44131
USA

Tel: 216 642 1124

Fax: 216 642 1127

Email: amaggiore@iars.org

The International Committee of the Red Cross (ICRC)

The ICRC acts to help all victims of war and internal violence, attempting to ensure implementation of humanitarian rules restricting armed violence.

Contact: ICRC,
Recruitment Division

19 Ave. de la Paix

CH-1202

Geneva

Switzerland or your local society.

Email: <http://www.icrc.ch>

Overseas Doctors Training Scheme (UK)

Anaesthetists seeking recognised training posts in the UK should apply to the

Bernard Johnson Adviser

Royal College of Anaesthetists

8 Russell Square

London WC1B 4JX.

UK

Tel: (+44) 020 7637 4104

The **SOROS Foundation** will consider applications from anaesthetists in Eastern and Central Europe for support for limited periods of study in the UK. Applications should be made in advance to the branch office of their country of origin whose address may be obtained from:

The Soros Foundation

400 West 59th Street

New York

NY 10019

USA

Tel: (+1) 212 548 0600
Fax: (+1) 212 548 4600
E-mail: osnews@sorosny.org

Teaching Videos:

The following titles are available at £5 each:

1. Servicing the EMO & Tri-Service vaporisers.
2. The oxygen concentrator
3. The Manley multivent/ Glostavent
4. Servicing the anaesthetic machine

Contact:

Dr. R Eltringham

Gloucestershire Royal Hospital

Gloucester GL1 3NN

UK

Tel: (+44) 01452 394786/394194

Fax: (+44) 01452 394485

E-mail: 106147.2366@compuserve.com

Job opportunities in the developing world

These are listed in a bimonthly magazine produced by the International Health Exchange.

Contact:

Ms Isobel McConnan

8-10, Dryden Street

London WC2E 9NA

UK

Tel: (+44) 020 7836 5833

Fax: (+44) 020 7379 1239

E-mail:

healthexchange@compuserve.com

US volunteers wishing to spend periods working in developing countries

Contact:

1. Dr. Lena Dohlman

Health Volunteers Overseas

c/o Washington Station

PO. Box 65157

Washington DC 20035-5157
USA
Tel: (+1) 202 296 0928
Fax: (+1) 202 296 8018

Committee Chair

Overseas Teaching Program

American Society of

Anesthesiologists

520 N. Northwest Highway

Park Ridge, IL 60068-2573

USA

World Anaesthesia

This organisation works to improve standards of anaesthesia throughout the world. In conjunction with the WFSA, it produces two publications, *World Anaesthesia News* and *Update in Anaesthesia** (an add-on textbook) published twice-yearly. The annual subscription is £35. For further information

Contact:

Dr. Ray Sinclair

Dept of Anaesthesia

Royal Truro Hospital (Treliske)

Truro

Cornwall TR1 3LJ

UK

Tel: (+44) 01872 274242

* also available on:

<http://www.nda.ox.ac.uk/wfsa>

Courses on Anaesthetic Equipment Maintenance

One week residential courses for anaesthetic technicians are organised at the NHS training and conference centre. Applications should be sent to:

Geoffrey Dillow

Conference Centre

Wotton under Edge

Glos. GL12 8DA

UK



Useful Information continued

Association for International Development of Anaesthesia (A.I.D.A.)

Contact:
Professor Stanley Samuels
Department of Anesthesia
Stanford University Medical Centre
Stanford
California
USA
Tel: (+1) 415 723 6411
Fax: (+1) 415 723 8544
Email: Samuels@leland.stanford.edu

Commonwealth Medical Awards

Available to citizens of Commonwealth countries for limited periods of postgraduate study within the UK. Applications should be addressed to the"

Medical Awards Administrator
Commonwealth Scholarship
Commission
36 Gordon Square
London WC1H IPE
UK

Medecins Sans Frontieres (MSF) offers assistance to populations in distress, to victims

of natural and man-made disasters and to victims of armed conflict. They require volunteers for both long and short-term projects. If you are interested in obtaining more information, contact them at:

MSF
124-132 Clerkenwell Road
London EC1R 5DL
UK
Tel: (+44) 020 7713 5600
Fax: (+44) 020 7713 5004 or
11 East 26th St.
Suite 1904
New York NY 10010
USA
Tel: (+1) 212 679 6800.
Email: <http://www.msf.org> or
<http://www.dwb.org>

WHO Liaison Officer
Dr M Dobson
Nuffield Department of
Anaesthetics
The John Radcliffe Hospital
Headley Way
Headington
Oxford OX3 9DU
UK

Tel: (+44) 01865 221589/741166
Fax: (+44) 01865 221593/453266.
E-mail: michael.dobson@ndm.ox.ac.uk

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Anaesthesia in Difficult Circumstances, Difficult Locations and Developing Countries 11-16th July 2004

A five-day course intended both for those interested in anaesthesia in developing countries and for those involved in anaesthesia planning for military and disaster situations. The course will consist of lectures, and clinical and technical demonstrations. Residential accommodation will be provided in St Catherine's College, Oxford.

Course fee: £375.00
College accommodating and full board: £385.00

Applications forms and further detail from:
Nuffield Department of Anaesthesia (Dept DW/ADC)
John Radcliffe Hospital, Oxford OX3 9DU
Ox foes OX39DU
Tel: 01865 221590 Fax: 01865 220027

Anaesthetic web sites to try

Resources

African Anaesthetist	www.africananaes@lycos.com
Anaesthesia & Critical Care Resources on the Internet	www.eur.nl/cgi-bin/accr.pl
Anesthesia Web	www.anesthesiaweb.com/
Anesthesia International	www.geocities.com/anestint
Armenian Society of Anaesthesiologists	http://freenet.am/~armanest
Audio Digest Foundation	www.audio-digest.org
Bandolier (Evidence-based Medicine)	www.jr2.ac.uk/Bandolier
Gaseous Anomaly	www.anaesthesia.ml.org
GASNet Anesthesiology Home Page	http://gasnet.med.vale.edu
Illustrated Regional Anesthesia	www.nysora.com or http://depts.washington.edu/anesth/regional/welcome/html
Indian Anaesthetists Forum	www.theiaforum.org
Medical World Search	www.mwsearch.com/
Primary Internet Resources for Anaesthetists	www.ability.org.uk/anesthes.html
Primary Trauma Care Foundation	www.nda.ox.ac.uk/wfsa/dl/html/pages/ptc.htm
Society for Education in Anesthesia	www.seahq.org
The National Library of Medicine	www.ncbi.nlm.nih.gov/PubMed/
The Trauma Organisation	www.trauma.org/
University of Chicago	www.airway.bsd.uchicago.edu
Virtual Anaesthesia Textbook	www.anaesthesia-wessex.co.uk/link.htm
Virtual Museum of Anesthesiology	http://umdas.med.miami.edu/aha/vma
World Anaesthesia Online	www.nda.ox.ac.uk/wfsa

Journals:

Anaesthesia	www.blackwell-science.com/ana
Anaesthesia and Analgesia	www.anesthesia-analgesia.org
Anaesthesia and Intensive Care	www.aaic.net.au/home.html
Anesthesiology	www.anesthesiology.org
British Journal of Anaesthesia	www.bja.oupjournals.org
JAMA	www.ama-assn.org/public/journals/jama
NEJM	www.nejm-org/content/index.asp
Science	www.sciencemag.org/
The Internet Journal of Anaesthesia	www.ispub.com/journals/ja.htm

Associations:

American Society of Anesthesiologists (ASA)	www.asahq.org
Anaesthetic Research Society	www.ars.ac.uk
Association of Anaesthetists of Great Britain & Ireland	www.aagbl.org
Doleurs Sans Frontieres	www.doleurs-sans-frontieres.org
European Academy of Anaesthesiology	www.eaa.euro-anaesthesiology.org/
International Anesthesia Research Society	www.iars.org
International Society for Anesthetic Pharmacology (ISAP)	www.isaponline.org
International Society for the Study of Pain	www.halcyon.com/iasp
International Trauma Anaesthesia & Critical Care Society	www.trauma.itaccs.com
National Confidential Enquiry Peri-operative Deaths	www.ncepod.org.uk
Obstetric Anaesthetists Association	www.oaa-anaes.ac.uk
Royal College of Anaesthetists	www.rcoa.ac.uk/
Society for Ambulatory Anaesthesia	www.sambahq.org
Society for Critical Care Medicine	www.sccm.org
Society for Computing and Technology in Anaesthesia	www.scata.orh.uk/programs/list.html
Society for Education in Anesthesia	www.anesthesia.ccf.org:8080/sea/index.htm
Society for Obstetric Anesthesia & Perinatology (SOAP)	www.soap.org
Society for Paediatric Anaesthesia	www.uams.edu/spa
South African Society of Anaesthesiologists	www.sasaweb.com
World Federation of Societies of Anaesthesiologists	www.anaesthesiologists.org

The Editor would be delighted to hear of other sites that might be of interest and to learn of any site addresses that are incorrect or no longer function.

World Anaesthesia Database

Are you a new member or renewing your subscription: New Renewing

If renewing, how do you usually pay: Visa Standing Order CHEQUE CASH

The current subscription is £35.00. If you have a UK bank account, please complete the enclosed standing order mandate and forward to your bank.

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PLEASE NOTE that it is important to send a reply as those who do not reply will be assumed to have left the society and we will **REMOVE THOSE NAMES FROM THE MAILING LIST.**

Name: Male / Female

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Grade:

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Experience overseas:

Please list the countries where you have worked (other than your home country). Please add the places in those countries, the dates and the type of work your were engaged in (e.g. Disaster Relief, Support for refugees, Area of War/Conflict, longer term medical missionary or secular relief agency work). Continue on a separate sheet if necessary:

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World Anaesthesia Database continued

Particular interests:

(e.g. subspecialities of anaesthesia/care of the critically ill, education, distance learning, appropriate research writing, disaster relief, conflict situations, medical missionary, long term secular:

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Availability:

- Are you happy to answer enquiries relevant to your experience? Yes No
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 Devon EX2 5DW, United Kingdom