Obstetric Anaesthetists' Association
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Pencilpoint

OBSTETRIC ANAESTHESIA IN GEORGIA AND ARMENIA

Kybele Foundation Trip to Brazil

Obstetric Anaesthesia in Georgia and Armenia

On our arrival in Georgia at Tbilisi airport after a 4.5 hour flight from London, we were met by our contacts. We stayed in an apartment belonging to an ex-government minister. It was very comfortable and exactly like any city apartment in any western city but alarmingly had a thick, metal, bullet proof front door. There are 15 obstetric anaesthetists in Georgia who can perform regional analgesia and anaesthesia. The average salary in Georgia is estimated at between $30-60 US per month. Our team consisted of 11 people: 9 obstetric anaesthetists and 2 obstetricians. One of the obstetricians was also a trainee. The plan was to split up into groups of 2 or 3 and visit different hospitals. Initially we would observe local practice and then demonstrate our techniques and one day of the week was allocated for a conference at which our team gave lectures on a variety of topics.

We visited a hospital in Gori first. At Gori, which was the birthplace of one Josef Dzhugashvili better known as Stalin, we heard that half the anaesthetic deaths in Georgia are due to failed intubation. Unfortunately there are no statistics of just how many deaths occur and asking different people will get you widely varying answers. They have 2000 deliveries per year and a caesarean section rate of 10-15%. Vacuum extractors are not used but the chief obstetrician is familiar with the use of forceps (not rotational). Analgesia for forceps delivery is provided by means of pudendal block and sometimes IV ketamine is used for additional analgesia. It is estimated that 5% of parturients who deliver at the hospital have not attended for any antenatal care. Some women deliver at home without ever having medical input and approximately 2 cases per month attend the hospital with problems after unbooked home delivery. There are currently no General Practitioner services in Gori but there are plans to set up primary care facilities. The hospital performs 3-4 terminations per day using diazepam and ketamine anaesthesia. It is estimated that the average Georgian woman has 3 terminations in her lifetime.

Mount Ararat

Caesarean section is always performed under general anaesthesia in Gori. The standard GA for c-section consists of: oxygen via facemask but not formal pre-oxygenation as we know it, diazepam 5-10mg IV, ketamine 1.5mg/kg, and pipecuronium 50mg. The patient is ventilated with 100% oxygen by facemask using an old Russian mechanical ventilator (not by hand ventilation) until the pipecuronium allows for intubation. No further anaesthetic is given until the baby is delivered, at which time 100mcg fentanyl is given iv and halothane introduced. Nitrous oxide is not available because of the cost. The neonates we saw being delivered were in need of some resuscitation.

The vaporizers all appear to be copper kettles. The monitoring for GA section consists of checking the patient's pulse and checking blood pressure with a manual sphygmomanometer. Not all smaller hospitals in Georgia have manual BP cuffs though, and so some GA sections are performed with pulse monitoring only. Postoperative analgesia was provided with diclofenac and morphine. In the recovery room there was no monitoring available, no oxygen available, and observation charts were not utilized. Parturients remained in hospital for 7 days after a caesarean section and 5 days after a vaginal delivery.

The Team in Georgia

This was the first time Kybele had visited the hospital in Gori and it seems that improvements here should focus on improving the safety of general anaesthesia, and then teaching spinal anaesthesia for caesarean section. Initial areas of concern specifically are:

1. **Use of left lateral tilt for elective caesarean sections (not currently used)**
2. **The use of cricoid pressure (not currently used)**
3. **Addressing the issue of awareness**
4. **Provision/supply of basic monitoring equipment**
5. **Teaching of safe spinal anaesthesia for caesarean section in conjunction with 4.**
6. **Assistance with setting up epidural labour analgesia service at a later date.**

I took the opportunity to speak to some trainees in Armenia. Medical school takes 6 years and then residents pick a specialty. Training in that specialty usually takes 3 years and then they can practice independently. The rota would not comply with the European working time directive but is not greatly different form trainee hours of recent times in the UK. Trainees work 8 nightshifts (8pm to 8am) each month and 8 dayshifts which are 24 hour shifts. On average they do 60-70 hours per week. They work one or two weekends per month. They have regular formal teaching and have clinical examinations every 6 months. They have 3 month attachments in subspecialty anaesthesia although it was not clear exactly what specialties other than ITU, obstetrics, and paediatrics are possible. They all spend at least 6 months in intensive care. By the end of their three years of training they are believed to be competent in regional anaesthesia techniques as well as general anaesthesia.

Georgian and Armenian hospitals struggle with a severe lack of money, drugs, medical equipment and general supplies. There is a need for further structured teaching of safe general and regional anaesthetic techniques. An epidural service is not an achievable goal yet for all the parturients of these two countries but, with the provision of some basic drugs, monitoring and the ongoing teaching of spinal anaesthesia, caesarean sections could be much improved in terms of safety. Epidural analgesia for labour could then be built on this foundation.

It was an unforgettable experience during which I learned a huge amount about the culture and history of the Caucasus region, a little of the language in Georgia and Armenia, and something about providing anaesthesia with few resources. We are very spoiled in the UK, and although our healthcare system has its problems they seem trivial in comparison with those of many other countries. As trainees we complain about the reduction in training with changes in working hours but although our experience may be reduced, we have been taught the techniques and principles of safe practice by our consultants and if we apply these principles to situations where we have less experience then I believe we can still provide good quality anaesthesia for our patients in the future. It was never more obvious to me than on this trip that the anaesthetist really is the most important monitor in the operating theatre.

Ancient Armenian Temple

Finally, I would like to thank Professor Medge Owen for allowing me to go with Kybele to teach in Georgia and Armenia. Professor Owen puts in an enormous amount of work to organize these missions and her dedication to the cause is undoubtedly improving conditions for women in childbirth in several countries around the world. I made good new friends and shared some amazing experiences with them and I hope to work with them again in the future. I would also like to thank the OAA and express my sincere gratitude to them for sponsoring my expedition to the Caucasus. It has been a very valuable and memorable opportunity. For further details of other Kybele projects and how you can help please visit the website www.kybeleworldwide.org

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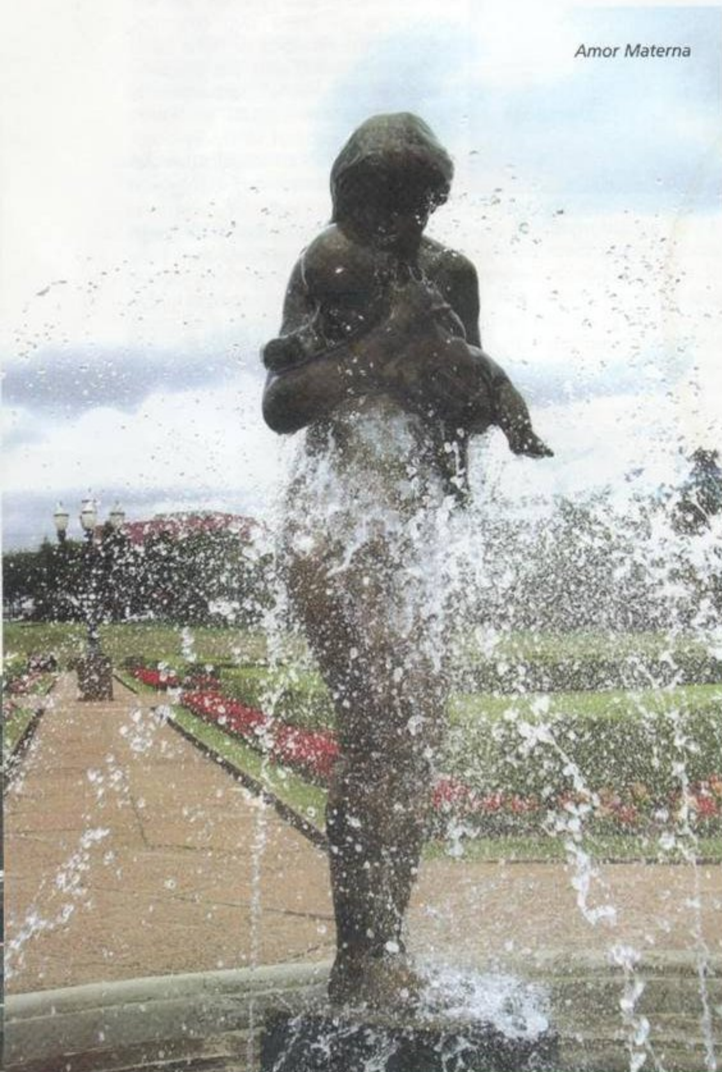
KYBELE FOUNDATION TRIP TO BRAZIL

Many OAA members may be aware of the Kybele foundation which is a non-profit making humanitarian organisation whose goal is to improve childbirth conditions worldwide through the creation of medical education partnerships. Following the success of the first trip to Turkey in 2004 (Pencilpoint 21) programs in several other countries have now been established and avid Pencilpoint readers may remember reports of trips to Croatia in 2005 (Pencilpoint 23) and Ghana in 2006 (Pencilpoint 24). Recently new programs were also instituted in Georgia and Armenia. Return visits are now being planned to these countries and with future trips to Japan, Egypt and Romania scheduled the Kybele foundation is blossoming.

The Kybele formula for each trip usually consists of a lecture programme followed by dispersion of the group to provide on-site training in hospitals across the country. The visits are requested by a local host, and on this occasion the host was Dr Pedro Tanaka. Previous trips have targeted small countries and nationwide impacts on practice have resulted. The most recent trip was different and involved a visit to just one city, Curitiba, in Brazil, a country with a population of 185 million.

So in April 2007, with the help of OAA funding, we were lucky enough to take part in the trip to Curitiba. Another OAA member in the party was committee member Ratna Sashidharan. Following long delays at Sao Paolo International airport due to weather conditions we joined an international team consisting of the founder of Kybele Medge Owen from Wake Forest, Margaret Sedensky from Cleveland, Ohio who organised the trip, Gary Vasdev the SOAP president and an obstetrician, a physician with an interest in maternal medicine and other anesthesiologists from the USA and Canada.


Amor Materna

Curitiba is a city in the state of Parana in Southern Brazil and has a population of approximately 3 million people. It is a relatively modern industrial city and is the main centre for politics, economics and culture in Southern Brazil. Favelas, or shantytowns, were evident on the outskirts of the town on the drive from the airport although these are much less abundant than in Sao Paolo or Rio de Janiero. The average income in Curitiba is approximately £1400 per year and the city is favoured by Brazilians as a good place to live because of lower crime rates, cooler summer temperatures due to its higher altitude and good transport networks. We went on a very tortuous and bumpy bus tour of the city stopping at the outdoor auditorium and botanical gardens as well as other notable sights including a telecoms tower!

The University of Parana is located in Curitiba and has its own medical school. Medical training in Brazil lasts 6 years and is followed immediately by a residency – for Anaesthesia this is just 3 years. The residents regularly work 80 hour weeks however and one informed us she had performed approximately 300 neuraxial procedures in 18 months. There is no formal requirement to pass postgraduate exams although these may be sat at a state level if desired. Following training most doctors generally worked in both the public and private hospitals, the latter generating a greater proportion of income. My role as the fellow on the trip included lecturing the residents and they were all interested to hear about training in the UK although I didn't scare them with the current problems of MTAS and MMC.

Maternal mortality in Brazil (74 per 100000) is significantly higher than in the UK (13.1) but much lower than some of the other countries that Kybele has visited. Brazil is renowned for having one of the highest Caesarean section rates in the world. This ranged from 30-60% in the public hospitals we visited to 98% privately. The reasons are no doubt multi-factorial but interestingly several local doctors we spoke with described a personal fear of vaginal birth and pain in labour. They also discussed the benefits of the convenience of an elective Caesarean section. One positive was that the majority of Caesarean sections in Curitiba were performed under regional anaesthesia. The main aim of our trip was to teach labour epidural analgesia techniques as this was less widely practised in the public hospitals.

Before going to the hospitals we were VIP guests at the 42nd Josulbra (Southern Brazilian Anaesthetic society) meeting. This was a large 2 day meeting attended by 600 delegates. There were several parallel sessions including an 'International Obstetric Anaesthesia Symposium' at which everyone in our group lectured. Fortunately there was a good translation service provided for the lectures in Portuguese. As the fellow I was excused from speaking and was therefore able to listen to a variety of excellent talks on current issues. At this stage it appeared that we had little to offer the Brazilians as those speaking and asking questions appeared well informed and relatively up to date with current practice. However, on visiting the hospitals the following day we saw a great variation in practice.

After the conference the team split up and worked in 3 public hospitals for up to 3 days. These were Clínica e Maternidade do Rosário, the University Hospital and Hospital Vitor Amaral. The delivery rates and Caesarean section rates are outlined in the table below. Standards varied greatly between hospitals. For instance low dose CSEs were already performed for labour at Vitor Amaral whereas at Rosario labour epidural analgesia was rare. We did not visit any of the private hospitals.

	Rosario	Univ Hosp	Vitor Amal
Deliveries/yr	4800	2000	4800
C/S rate	50%	60%	30%

In Vitor Amaral the practice was similar to that in the UK and USA. The parturients here were mostly between 13 and 18 years of age. Spinal anaesthesia was in use for Caesarean section and combined spinal epidural analgesia in some labours, using bupivacaine and fentanyl. Pencilpoint spinal needles were available, but not long ones so a two needle technique was used for labour CSE. Labour CSEs when used were administered late in labour. The first lady on whom we were going to demonstrate a needle through needle CSE was brought from the communal labour area to have the procedure, but she delivered on the floor before making it to the trolley for her CSE. In Rosario too we were struck by the speed at which young primiparous girls were delivering. Then we spotted the oxytocin 'infusions' running freely during the late first and second stages. Despite this all the babies born over the 3 days looked healthy.

Hospitial de Clinicas is the unit to which high risk parturients are transferred, and has blood transfusion services on site and more intensive neonatal care facilities. We saw a severe pre-eclamptic patient. Methyldopa and nifedipine were being used for hypertension. Hydralazine was also available but not labetalol. A magnesium infusion was ongoing, and had been for three days. Availability of a neonatal cot was being awaited. We were concerned that the lady was oliguric, with very sluggish tendon reflexes, so magnesium levels were requested that day. It seemed that there were no written guidelines in use for managing severe pre-eclampsia. Spinal anaesthesia seemed to be in frequent use in that hospital, but we were not involved with any theatre cases apart from a post-partum sterilisation under spinal anaesthesia.
Two of us spent most of our time at the Rosario Hospital which was by far the busiest and where we thought most impact could be made. Facilities were basic. The labour 'suite' consisted of a 4 bedded room in which women laboured together during the first stage. Second stage occurred in an adjacent room (with no door) on one of two tables with stirrups. Connected to this room in turn (again with no door) was a theatre. Privacy was therefore not an option and the presence of partners was a rarity (Dr Clark had one teenage father in for a CS of his second child.) 'Recovery' was the corridor outside theatre and we were concerned to find our immediately post-op patients lying in trolleys in the corridors with no monitoring and no staff. The only "observations" were their responses to our anxious "hellos" as we walked past! There were two other theatres in which small operations such as sterilisations were carried out.

The staff on day-shift at Rosario consisted of two surgeons, one anaesthetist (who often scrubbed to help the surgeons and also exert fundal pressure during the second stage! Not sure what our GMC would think of this!) and 3 (?) midwives. There was excellent camaraderie between all staff and morale was high despite the obvious lack of equipment. Many of the IV's were with butterflies. The anaesthetic machine was antiquated. There was no vaporiser and a brief check revealed a hole in the reservoir bag. There was however electronic NIBP, SpO2 and ECG monitoring in two theatres. A manual sphygmomanometer was available elsewhere. Spinal needles (or CSE kits) were not available. All neuraxial anaesthesia was undertaken with reusable metal 12G Tuohy needles with glass syringes. Epidural catheters were apparently available although infusion pumps were not. We were able to find most standard UK anaesthetic drugs but the name of the vasopressor thwarted us despite looking it up on the internet. It acted like phenylephrine for which we were grateful. There was no electronic fetal monitoring.

Standard practice for a Caesarean section or a sterilisation was a single shot epidural. I witnessed these being skilfully placed but no catheter was inserted and a mixture of 5mls 2% lignocaine and 20mls 0.5% bupivicaine was injected rapidly. Blocks were not formally tested and monitoring was rare. Charts for the whole operation were often written before surgery had even started! Labour analgesia appeared to consist only of Entonox. Epidurals were only (rarely) inserted when women reached 8cm cervical dilatation or when the screams were upsetting the other patients or staff. The standard recipe consisted of a single shot of 20mls of 0.2% bupivicaine, with no catheter. As there were no pumps or pre-prepared dilute solutions of bupivicaine it was time consuming for staff which appeared to be one of the main reasons labour epidurals were not common. General anaesthesia for a Caesarean section consisted of etomidate, fentanyl and suxamethonium for induction with propofol boluses for maintenance as the obstetricians did not like the effect of volatiles on uterine tone and bleeding. This explained why we couldn't find a vaporiser! We witnessed general anaesthesia for an evacuation of uterus performed with a bolus of midazolam, etomidate and fentanyl with no monitoring, no maintenance of anaesthesia and towards the end of the procedure no anaesthetist!

With residents acting as interpreters we demonstrated multiple low dose mobile epidurals or labour CSEs to the staff with kits we had brought. Both staff and patients (fortunately) seemed impressed. One downside was that the obstetricians didn't realise that unfortunately the success rate of these techniques is not 100%. Neither did they appreciate that top-ups take time to work! Twice they tried to hastily perform a mid cavity forceps delivery with inadequate analgesia. We also taught the anaesthetists our spinal anaesthesia regimes for Caesarean section and for sterilisation procedures. They were very interested to observe the benefits over epidural anaesthesia.

By the final day our translators had gone and we were doing Caesarean sections local style with simply a sphygmomanometer, a few Portuguese words and much gesticulation! It was interesting to experience how little equipment one could manage with but most deliveries in Rosario were low risk and it would have been more difficult to cope had things not gone well. No blood at all for instance was available on site.

Pauline and Marge with Vitor Amaral Team

Overall it was surprising to see such different facilities in the public hospitals in one city. The standards of anaesthesia care seemed to be generally high despite relatively few resources. All the anaesthetists we met, including the residents, were technically very proficient. In some cases however a more in depth understanding of the principles of regional anaesthesia for delivery was not always evident. Without wishing to be overly critical in difficult circumstances there was scope for education. There was no use of left lateral tilt. When we applied this it was repeatedly removed by the surgeons. Monitoring was not routinely applied and record keeping was poor. We left recipes for preparing low dose epidural solutions with the drugs available and encouraged the team to put them to use. Standardised protocols and guidelines would have been useful as would have been multidisciplinary education programmes on epidural analgesia and anaesthesia. Similarly written guidelines would be helpful for management of pre-eclampsia.

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Improving the service would also require an increase in the number of staff and more equipment, neither of which Kybele could provide. Some of the basic equipment varied between sites, and it seemed that there might be possibilities for improvement of regional anaesthesia equipment. In all three sites it seemed that some low cost additions could be made to the rescue airway equipment available. This was very basic, and notably did not include a bougie in any of the three delivery unit's sites, and included a laryngeal mask in only one unit.

Vicki lecturing and height challenged

Hopefully we stimulated enough interest to encourage some changes in practice in our brief visit, and contributed to the development of an educational programme for a future visit In retrospect Kybele viewed this trip to Curitiba as a "site visit" to assess what was available in the local hospitals and inform them as to what would be educationally possible for future visits. A longer stay in the hospitals would have been necessary to reinforce the principles and practices taught.

Fortunately it was not all hard work. Our hosts were exceedingly kind and took us out every evening. We visited several 'all you can eat' Rodizio restaurants where the meat is carved at your table from huge skewered joints by sword wielding servers. The meat was truly fantastic, except for the two vegetarians in the party. Also to be thoroughly recommended is washing this all down with the national drink of Caipirinha, a potent cocktail made from Cachaça (from sugarcane), lime, sugar and crushed ice. Whilst after the 5 day trip I came straight home to my pregnant wife (before disappearing to SOAP in Banff two weeks later) others went trekking through alligator infested waters in the jungle or visited the beaches of Rio for a well deserved break.

Overall we had a fantastic experience both educationally and socially and we would thoroughly recommend taking part in a Kybele venture. We would like to thank Drs Medge Owen and Margaret Sedensky from Kybele for organising the trip, the OAA and AAGBI for helping with the funding and lastly all the Curitiban anaesthetists (in particular Dr Pedro Tanaka) for making us so welcome.

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FISHERMAN'S TALES

First off to a normal elective section list one Monday morning. I'm not sure what happens elsewhere, but here the Trust has decided that it cannot afford to let prospective fathers get dressed in Greens and therefore they just put a gown, overshoes and theatre hat on, over their normal clothes. Or, that is the norm...

Recently a father when asked to 'pop a gown, hat and overshoes on' caused a bit of a stir when he arrived in theatre clutching the back of his gown i.e. he had stripped off completely and put the gown on as for an operation ! He didn't even have the comparative safety of a pair of paper pants. He had obeyed the instructions to the letter and had the hat on and even the overshoes over his bare feet!

He came in and did the usual look both ways before asking the anaesthetist where he should sit? The anaesthetist unhurriedly looked around from doing the spinal for the mother to be and gestured to the stool as he had 100 times before, before gasping at the sight before him. The poor mother lifted her chin off her chest to smile at her husband (partner) but the smile froze on her face. There was absolute silence as everyone turned to look at him, indeed stare at him. Caught in such a fierce spotlight he nervously looked behind him a couple of times obviously wondering what was wrong. The glare stayed put and he became more and more self conscious, his eyes now darting all round the theatre. Eventually, one of the midwives coughed politely and asked if he could just pop out and put his clothes on under his gown. The poor lad then had the 'walk of shame' back out of theatre through a forest of smirks. He did that classic Basil Fawlty walk, simultaneously shuffling and holding the back of the gown, out of theatre. His poor wife had by now been rendered hypotensive by the combined vasodilatation of the spinal and the shame.

I did feel for him; it's difficult being a man!

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