

# NEWS LETTER



SCOTTISH SOCIETY  
LENDING DIVISION

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THE SCOTTISH SOCIETY  
OF ANAESTHETISTS

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# SCOTTISH SOCIETY OF ANAESTHETISTS

## COUNCIL FOR 1983-84

### *Office Bearers*

President .....	Dr D. B. SCOTT, Edinburgh
Past-President .....	Dr A. BOOTH, Inverness
Vice-President .....	Dr H. Y. WISHART, Glasgow
Hon. Secretary .....	Dr. W. F. D. HAMILTON, Dept. of Anaesthesia, Ninewells Hospital, Dundee
Hon. Treasurer .....	Dr I. G. GRAY, Dept. of Anaesthesia, Ninewells Hospital, Dundee
Editor of the Newsletter .....	Dr W. MACRAE, Dept. of Anaesthesia, Ninewells Hospital, Dundee

### *Regional Representatives*

Aberdeen	Dr W. L. PARRY	Retires 1984
Dundee	Dr M. MILNE	1986
Edinburgh	Dr I. T. DAVIE	1984
	Dr. A. S. BUCHAN	1985
Glasgow	Dr J. VANCE	1985
	Dr J. COLLINS	1986
Inverness and North	Dr R. JOHNSTON	1986

### **PROGRAMME FOR 1984**

**REGISTRAR'S PRIZE:** Entries to be submitted to the Secretary by 29th February 1984.

**ANNUAL GENERAL MEETING:** The Post House Hotel, Aviemore, 27th-29th April 1984.

**REGISTRAR'S MEETING:** Edinburgh, 8th June 1984.

**SCIENTIFIC MEETING AND GILLIES LECTURE:** Dundee, 16th November 1984.



## President's Newsletter



1983 has seen some interesting changes in the Scottish Society. Change in a well established and well run organisation is not always welcome. However, I think that all those who attended the Annual Meeting in Peebles were impressed with this venue. Thy Hydro was impressive in its location, its building and the quality of the food and service.

Aviemore has served us well over the years and we will indeed be going there for the 1984 meeting. Nevertheless, the time was ripe for a little experimentation, and with Peebles, the study (in some regrettable cases, a double blind study!) proved well worth the effort. We look forward to 1985 for a repeat experience.

Your council has worked as diligently as ever and in spite of changes in the office bearers we continue in good heart and health. Dr Farquhar Hamilton has proven his talent for hard work and meticulous detail. Apart from ensuring total efficiency, he never lets the President out of his sight when wearing the chain of office.

While we do not neglect the scientific aspect of our activities, the social side is also very important. Meetings are often criticised because they are felt to be more

social than scientific. This shows a lack of appreciation of the value of the casual discussions at the "après sessions" which at least you can understand. It would be a bad day if anaesthetists in Scotland did not know each other and each other's families socially and met in good fellowship on a regular basis.

If we have failed to any extent it is in attracting the young. Indeed, our registrar prize-winner often feels he has stumbled upon a geriatric bus tour as so few of his own age group attend. The annual Meeting looks expensive at first sight but the enjoyment per pound (I nearly said per gallon) puts it high up in the best buy stakes. To increase our social activities we are considering the possibility of an annual golf tournament.

It was very pleasant to see and welcome our old friend John Sandison who was our main guest. Many of the Edinburgh trained members will remember John and be happy that he has made such a good recovery from a disastrous accident last year and undoubtedly his charming wife Jenny, was largely instrumental in this.

We look forward to 1984 and to the continuation of the support of all our members.

## Editorial

### Change is inevitable. In a progressive society change is constant (after Disraeli)

For the first time in the history of our society the offices of honorary secretary, honorary treasurer and editor of the Newsletter have moved from Glasgow and Edinburgh to one of the other Scottish centres. Interchange between the various regions of Scotland is one of the great strengths of our Society. In the past four years the President has come from Aberdeen, Glasgow, Edinburgh and Inverness. Our meetings rotate round various Scottish hospitals and this allows us to keep up with old friends as well as making new ones. One would hope that this would give rise to a certain amount of healthy competition, allowing host departments to show themselves in the best possible light and enabling anaesthetists from other areas to assess the home team. In this way high standards can be maintained throughout the country, and perhaps the movement of staff between different centres can be encouraged, bringing a stimulating cross-fertilisation of ideas. We are fortunate to work in a country small enough for such interchange to be easy, but large enough to possess several excellent centres.

The specialty of Anaesthesia itself has changed radically since the formation of our Society in 1914. The introduction of new drugs and techniques and the widespread use of patient monitoring equipment has created a level of safety and patient comfort that our founders would scarcely have thought possible. The development of Intensive Care Units has not only brought great benefit to patients, but also provided another area of interesting work for anaesthetists. Now

we are in the middle of another change—the creation of Pain Relief Clinics. Anaesthetists have many skills particularly appropriate for helping patients with pain problems. Proficiency in the techniques of regional anaesthesia provides useful methods both for diagnosing and treating pain. Our comprehensive training in Pharmacology allows us to make rational use of drug therapy. However, perhaps the most important attribute is one of attitude. In many patients a diagnosis cannot be reached despite exhaustive examination and tests, or perhaps the diagnosis is all too obvious, as in many cancer patients, but cure is impossible. In this group of patients anaesthetists can often control distressing symptoms, when colleagues in other specialties have felt that nothing further can be done for them, because there is no hope of diagnosis or cure. The benefits of treatment for these patients are well worth the time and effort spent on their problems, and this attitude of caring rather than curing lies at the heart of much of the work of Pain Relief Clinics. At a recent meeting of the Anaesthetic Sub-committee of the N.M.C.C. Pain Relief Clinics were discussed as one of the main items and it is hoped that this area of our work will be given the resources it needs to develop, to the undoubted benefit of patients as well as our specialty.

I would like to end by thanking all those who have contributed to this year's Newsletter and offering a special thanks to Tony Wildsmith for handing over such a well organised editorial system and for his help and guidance.

# ANNUAL GENERAL MEETING—PEEBLES

April 15th-17th 1983

The 1983 Annual General Meeting was held at the Peebles Hydro Hotel. The change from Aviemore met with virtually unanimous approval and both the organising committee and the staff of the hotel are to be congratulated for a smoothly run and enjoyable meeting. The meeting started on Friday afternoon with a golf match. The Annual General Meeting proper took place on Saturday morning.

Among the matters discussed were Operating Department assistants, the changes in the regulations for reporting deaths in the perioperative period to the Procurators Fiscal and the changes in the structure of the Fellowship examination. The treasurer's report showed that the Society is in sound financial health and that the membership stands at 316.

After lunch we heard Dr Bruce Scott's presidential address and Dr Dermot McKeown's Registrar's prize paper. After tea we welcomed Professor John Sandison from Montreal, who delivered the annual guest lecture, in which he compared anaesthesia in Canada and Britain, with special reference to training and continuing education. His detailed and thought provoking analysis will provide food for thought for all those of us in Scotland interested in the continuing improvement of education in anaesthesia. Food for more than thought followed in the evening, with the annual dinner—which was followed by a dance.

In all respects this was a most successful meeting—particularly for Alec Reid and Betty Bradford who won the golf competition!



The Three Wise Men

## PEEBLES 1983

In assuming the mantle of President of the oldest society of anaesthetists in the world, it is right and proper that I should take time to ponder philosophically a little on the things that make us anaesthetists tick. I say ponder a little, because too much pondering is heady stuff given the enormous differences between us as individuals and our attitudes to our subject.

Perhaps for me the most intriguing thing about medicine in general, and anaesthesia in particular, is that it is so full of paradoxes. As a young man working in Africa, one saw great advances being made in medicine, as enquiring minds in new teaching hospitals, with the necessary equipment, put their efforts into the acquisition of knowledge regarding disease in tropical countries. The number of firmly believed notions which disappeared as a result were legion. Duodenal ulcer, which was thought to be very uncommon in primitive populations, was found to be endemic and vagotomy and pyloroplasty became the single most performed abdominal operation. Tuberculosis of the spine, being too common to be treated by the conventional means used in this country, was found to respond superbly well to simple antibiotic therapy without immobilisation, patients being treated as ambulant out-patients. Many other such instances were discovered and continue to be discovered, most of them requiring the ability to think the unthinkable, namely that we, plus our elders and betters, were wrong.

In doing research, it is, of course, a great joy when one comes upon a piece of new knowledge, a pearl in an acre of oyster-bed. Almost as enjoyable, and far more common, is finding that our "known facts" have feet of clay, or even better, are plainly untrue. One need not be surprised at this because medicine is not as firmly based on "known facts" as we would like to believe. Good ideas, based on reasonable logic and supported by the evidence such as it is, are the mainstay of our science and practice. However, good ideas have a way of being wrong and new methods are constantly revealing the unreliability of older methods.

The incontrovertible finding (if anything in medicine is incontrovertible) that some belief is untrue can of course be a hot potato, especially for the young investigator who may decide that he or she would rather forget about it than face the zealots of the Anaesthetic Research Society. This would be a shame because we will never reach what should be our ideal, namely a balanced view of our work.

Now here is yet another paradox. While remaining very conservative in our attitude to new scientific facts, we almost fall over ourselves to believe in, and to use, new drugs. Provided that the new drug is much more expensive, and almost as good as the old one, then we lose no time in ordering it and obtaining the necessary

and expensive equipment required for its administration. The progression from the ridiculously cheap chloroform to the hideously expensive enflurane has been an object lesson and we have certainly not seen the end of it, as lips are being smacked by anaesthetists, drug companies and apparatus manufacturers alike, at the prospect of isoflurane which will no doubt raise the cost by at least another order of magnitude.

The deep psychological need for new agents is perplexing but must come from a general dissatisfaction with current drugs. To justify this need, we tend to exaggerate the disadvantages and side effects of our old trusted and tried work horses. The amount of stick that poor old thiopentone has to take is quite amazing. There is a drug, arguably one of the top three in the whole of medicine in the twentieth century, which completely revolutionised general anaesthesia and is still far and away the most commonly used intravenous agent, and yet the anaesthetic lip curls in disdain at its very mention. Why have so many anaesthetists, even outside Belfast, devoted their life's work to finding a substitute? How many drug firms have moved their new discovery to the market place, seen its sale rise dramatically and fall within a few years or even months, like a sixpenny rocket?

Well, there must be something fundamentally wrong with thiopentone, the drug that everyone likes to hate. To observe the approach of our young trainees and the timidity with which they inject it, one cannot make up one's mind whether they were trained in a homeopathic hospital or believe that the drug is closely akin to cyanide. In over 30 years of constant use I have never seen a patient come to harm by overdose, and 500 mg is my regular dose for a fit adult, though I was originally taught that it should be nearer to one gramme. Ah! but they say, what about the old lady of 93 who had a coronary last night, during an asthmatic attack, shortly after receiving her regular 100 units of insulin? (Some people seem to anaesthetise only this category of patient). Well, what indeed? Surely as a potent myocardial depressor, thiopentone is a very bad drug and we require something without such an effect. No candidate for the F.F.A. could possibly pass if he did not say thiopentone had a deleterious effect on the circulation, but what is the evidence? Studies of the circulatory effects of the drug suffer from many drawbacks. Many were done with old methodology which has been shown to be unreliable. Even when the techniques are valid, how do we assess a reduction in cardiac output and arterial pressure in a patient who has just had anaesthesia induced? Have we corrected a situation of sympathetic stimulation in a nervous patient or induced an important decrease in cardiac performance? Remember the drug is having its primary effect upon the central nervous system which is, of



course, intimately concerned with control of the circulation. If it also has effects upon the myocardium, will these not be maximal at approximately the same time as the effects on the brain are maximal, i.e. 20-60 seconds after injection, when the arterial plasma concentration is starting to decrease from its very transient peak? Virtually all published investigations use methods which cannot show such rapid but profound changes.

When in doubt, try it out. A few years ago, my namesake, Dr David Scott and I carried out a small and simple investigation into the acute effects of thiopentone on the circulation, comparing the drug with Althesin. We decided to use an impedance cardiograph as this gives a beat by beat record of the stroke volume and the systolic time indices. Observations were made for 2 minutes after injection, by which time all patients were starting to recover from the thiopentone or althesin in so far as their respiration had restarted after the short period of apnoea that usually occurs at induction. While 2 minutes sounds a short time, nevertheless every heart beat was recorded.

The results do not indicate any great degree of cardiovascular depression with either drug. There was a 50% increase in heart rate and a 10% decrease in cardiac output with both drugs. Arterial pressure decreased by 10% with althesin though not with thiopentone. Measurement of the systolic time intervals pre-ejection period (P.E.P.) and left ventricular ejection time (L.V.E.T.) showed no changes except an increase in P.E.P. with thiopentone. It is noteworthy that the dose of thiopentone was approximately twice the equipotent dose of althesin.

It should be remembered that patients awaiting induction of anaesthesia tend to be in a hyperkinetic state insofar as their circulation is concerned. Thus, a drug which decreases arterial pressure, cardiac output and systolic time intervals is not necessarily a myocardial depressant. However, the marked increase in heart rate cannot be ascribed to the sedation of a nervous individual and is most likely due to a centrally mediated effect.

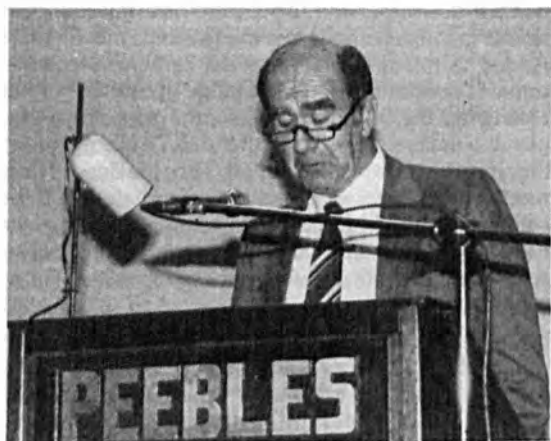
Now, if we cannot show any convincing evidence that thiopentone is a cardiovascular depressant in healthy patients, we must fall back on the experience with poor risk and elderly patients. Usually this "experience" is that of others as few of us are brave enough to give more than a tiny dose to such patients. And, of course, the big "experience" was the oft-quoted debacle at Pearl harbour in 1941. Never in the history of human conflict have so many become so opinionated by so little data. There were undoubtedly a few deaths in seriously ill and untransfused casualties but it simply is not true that hundreds died in this way. Don't forget that at that time the standard dose of thiopentone was one gramme and that the drug was used with great success throughout the war by the R.A.M.C.

That patients with a low cardiac output are susceptible to thiopentone is not denied and the reason lies almost entirely in the pharmacokinetic behaviour following bolus injections. Any drug injected intravenously is diluted by the cardiac output and the concentration reached by any given dose will be inversely proportional to the output and also to the time of injection. The slower the injection, the less the plasma concentration. Added to this is the fact that the cerebral circulation remains constant over a wide range of cardiac outputs and when the latter is very low, the proportion of it going to the brain is greatly increased. To a large extent, the same holds true for the heart. Thus the dose of drug reaching the brain and myocardium will double if the cardiac output is halved. Little wonder then that the dose that was relatively innocuous in health causes profound effects in a battle casualty.

The whole of medicine, be it clinical practice or academic endeavour, if it is to be well done, depends upon having a balanced view of the evidence such as it is. Many things will try to distort this balance, fashion, spurious results of investigations, exaggeration of minutiae. Not the least in importance, if we are to assess all the evidence properly, is the ability to rethink our beliefs and very occasionally to throw them overboard.

## ANAESTHESIA IN CANADA

## Manpower, Postgraduate Training and Continuing Education



Canadians like to boast that Canada is the second largest country in the world with a total land area of just under 10 million square kilometres. It does not, however, share the population density of other territorial giants. The modestly expanding population of 24.5 million people of widely diverse ethnic origin is centred in cities which have developed where the climate and landscape are moderate, in a narrow strip of land within 100 miles of the U.S.—Canadian border. Sixteen medical schools are situated in the larger cities of the ten provinces. With the exception of two small Atlantic provinces, each has at least one medical faculty and Ontario and Quebec sharing 15 million people, have four medical schools each.

**MANPOWER**

The most recent manpower study in anaesthesia published in 1975, recorded that the major portion of the anaesthesia services was supplied by approximately 1,300 specialists, a ratio of one specialist to 16,200 population. A large number of general practitioners, over 2,000, were identified as providing some anaesthesia services. The extent of their participation varies from the occasional anaesthetic to full time practice. It was estimated that their contribution added up to 400 full time equivalents. Many of these practitioners work in less populated rural areas but some work in the smaller community hospitals of urban areas. Despite the aim of the Canadian Anaesthetists' Society of an all specialist service, the practitioners provide up to 30% of services in some provinces and it is unlikely that they will be replaced in the foreseeable future. Consequently certain university departments offer 6 month or 1 year training courses for practitioners, which are now recognized as a requirement for hospital privileges.

The present manpower situation in Canada is estimated to be:

Specialists..... 1,510  
General practitioner equivalents..... 400

This provides an anaesthetist/population ratio of 1/13,000 or 7.5 anaesthetists per 100,000. The comparative figures for England and Wales for 1979 are 1,600 anaesthetists, a ratio of 1/30,000 or 3.5 anaesthetists to 100,000 population. Scotland is more fortunate with 6 anaesthetists for each 100,000 population. It is of interest that Canada with a population of 24.5 million has a similar number of specialists to the U.K., whose population is 55 million. Why is this? Do the Canadians work less than anaesthetists in the U.K.—probably not. The Canadian anaesthetists with few exceptions is remunerated for his clinical work on a fee for service basis, organized through comprehensive provincial health insurance schemes. To maintain parity with colleagues in other specialities, particularly surgical, the anaesthetist has to work reasonably hard, an average of 50-55 hour week for the community hospital specialist.

Two factors are mainly responsible for the different anaesthetist/population ratios in the U.K. and Canada. The first and most significant is the large number of surgeons in Canada and the amount of surgery performed. There are 27 surgeons per 100,000 population in Canada compared with 7 for England and Wales. The ratio of surgeons, including those in the subspecialities, to anaesthetists show a figure of 4.5 in Canada and 2.5 in the U.K. Surgeons create work. The apparent need for surgical intervention in a community on a percapita basis relates to the number of available surgeons. Bunker, early in the 1920s, drew attention to the greater frequency with which common operations such as herniorrhaphy, cholecystectomy and hysterectomy were performed in the U.S.A. as compared to England and Wales. The Canadian surgical practice is similar to that in the U.S.A. There are minimal or no surgical waiting lists in Canada, the majority of surgeons seek more work and their appetites often only limited by shortages of hospital beds, operating time, nurses and anaesthetists. There is no immediate evidence of planned activity to restore the balance. Surgical/anaesthesia trainee and specialist ratios are very similar. The increased entry of women into medicine may have interesting effects on the anaesthesia and surgical balance. Presently 35% of medical graduates in the Canadian universities are women, as are 40% of the present 1st year students. Women have been slow to enter surgery. They claim that they find few role models



and even less encouragement from their surgical colleagues. Anaesthesia has been fortunate to be an attractive speciality to women. A future fall in medical school admissions is forecast. If the proportion of women continues to rise, the surgical specialities may then feel the pinch.

The second factor relating to the number of specialists required is the low number of trainees in Canada and their differing role in the provision of a health service. In Canada, specialists outnumber trainees by a factor of four. In the U.K. the situation is reversed in that trainees exceed the specialists. The duration of training in the U.K. and the presence of experienced senior registrars engaged in higher professional training creates a very different situation to that in Canada. The presence of a small number of trainees whose clinical experience does not extend more than 3 years means that the volume of work performed independently by trainees is small. The education versus service role of the resident, a fairly controversial and complex subject, is I think somewhat differently viewed in our two systems.

Although residents are expected to assume independent responsibility when fit to do, the legal and economic constraints demand the presence, though not immediate, of a supervisor. In terms of complementary manpower to the specialist body, the trainee contributes little.

As trainees are limited to teaching centres, over 60% of specialist anaesthetists work without help from junior staff. Also as no supporting system exists in the form of nurse-anaesthetists or anaesthetic assistants, a very inflexible practice situation is found in the community hospital. Many activities expected of the anaesthetist outside of the operating room become difficult to develop. If the non-assisted anaesthetist is to maintain an interest in intensive care units, recovery wards, resuscitation or administrative responsibilities, without the buffer of trainees, an increased number of staff is required to cope with the surgical workload.

There has been slow growth in the number of trainees over ten years. A marked fall in the number of foreign medical graduates has occurred, resulting both from the restrictive immigration policy of the federal government and an increase in interest in the speciality by the Canadian graduate. The number of well qualified Canadian applicants to the programme now is in excess of positions available. All who wish to train cannot do so. The pass rate in the certification examination has increased and the small rise in the number of specialists relates to this fact rather than to any substantial increase in trainees.

#### POSTGRADUATE TRAINING

The Royal College of Physicians and Surgeons of Canada is responsible for the minimum training requirements, the accreditation of residency training programs and the granting of speciality certificates in

Canada. In order to upgrade the educational value of residency programmes, the Royal College took measures that led to an important change in specialty training. After July 1970, only university directed training programs were accredited by the Royal College. Specialty residence training is recognised as a form of university education and all residents are required to register and pay a registration fee. Each specialty has a Director with the time, experience and interest to conduct the running of the programme with the help of a committee composed of representatives from the participating hospitals and residents. The Programme Director and his committee are required to examine the clinical and teaching resources available, and clearly define the role of the participating hospitals. In addition selection of residents, allocation to the hospitals, evaluation, examinations and promotions fall within the committee's responsibility. Obviously residents in anaesthesia must work in hospital. They receive their remuneration through the hospital from the government and when necessary they negotiate working conditions and salaries with the hospital, and to a large part have their daily responsibilities detailed by the head of the hospital department. However, clear benefit is derived by the trainees from the strong contribution of the university. In each hospital faculty members are appointed to organise and implement teaching programmes. They may or may not receive a salary component from the university department dependent upon the extent of their academic duties. Every appointee to a teaching hospital is expected to participate in the basic teaching and to support the academic environment of the department. The programme has access to members of other university departments for teaching and research associations.

Educational activity is fairly concentrated through seminar programmes organised by the university department and through hospital departmental rounds. Supervision in the operating room varies in degree but is pervasive as is operating room teaching.

I am not claiming that this format is successfully or uniformly carried out by all programmes. There are obvious differences between the 16 programmes in Canada. Flexibility exists but there is a basic pattern on which they are modelled. There is little doubt that the Royal College's views on specialty training and accreditation, combined with the influence of a group of anaesthetists in Canada in the mid 1970's, dedicated to improvements in academic anaesthesia, have led to the development of programmes characterised by a high commitment to education, strong supervisory systems and a sensitivity to possible exploitation of residents through excessive or inappropriate service requirements.

One has to point out one or two controversial areas in our programmes. Firstly, looking at the dura-

tion of training, a trainee can expect to hold a specialist appointment within five years after graduation, spending one year as an intern (house officer) and four years in the specialty programme. The Royal College has emphasised that its requirements represent the minimal standards and that individual programs must decide whether a candidate should be promoted to the examination, success in which ensures a specialty designation. However, largely due to the economic problems of the provincial governments, it is difficult to obtain an additional year of training for a trainee requiring a slower pace or for a candidate who fails the examinations. As applications exceed the available positions, the licensing authority and faculties are unsympathetic in allowing additional paid years of training. Pressure is placed on programmes to identify either at the admission process or at an early stage trainees who will be unable to reach the required standard. Without confidence in the validity of our evaluation process a considerable strain is placed on both the trainee and the programme Director when discussing exclusions or withdrawal. Can anaesthetists in a four year period develop the competency expected of a specialist? There is no easy answer. The American Board of Anaesthesiologists believe that certification can be completed within four years of graduation. The ability to pass an examination is not necessarily a good indicator of performance. Better may be both the quality and the duration of a physician's training after medical school. For those individuals wishing to enter academic practice at least one year of higher professional training is now recommended. There are no regulations mandating this additional training and, because of staff shortages teaching hospital appointments have not been highly competitive. However, most teaching centres' appointments now do require additional credentials to the basic 4 year programme.

The relative shortness of the Canadian programmes has resulted in a high level of staff supervision and didactic teaching. In the second of their core years, residents move through many short rotations in an effort to expose them to the range of subspecialty practice. Similarly, even in first year in some teaching hospitals a unit system is employed whereby a resident will pass through general surgery, urology, orthopaedics, gynaecology etc. each for a one month period. This system has advantages in guaranteeing even exposure, and in each unit the trainee has regular though not exclusive association with a staff tutor and access to a learning package of essential reading. This pattern is not wholly conducive to the principle of graded responsibility. As a resident becomes proficient in one area, they move to another unit within the hospital or to another subspecialty hospital where they are not known. A high level of supervision is again provided. The resident is acquiring considerable knowledge, but may be short on opportunities for

developing in depth clinical experience or physician patient responsibility. Their opportunity to administer a high volume of anaesthetics independently may not present until relatively late in the programme. The shortage of experience may explain the inflexible routines of anaesthesia that are commonly adopted. Every hernia patient has to be intubated. The combination of fentanyl and an inhalation agent such as ethrane appears to be essential to the maintenance of anaesthesia. Retrainees have not had sufficient experience or time to practice alternate techniques or be able to appreciate subtle differences in techniques appropriate to the surgical requirement.

This is a generalisation and does not apply to all residents. Another generalisation is that anxieties exist regarding the intellectual inflexibility of some of our trainees. These are often pointed out by consultants from the U.K. who have worked in Canadian departments. Trainees readily accept what they read or are told. If it is in Joel Kaplan's book or a Bruce Scott review article, its authority is accepted. Scepticism and critical thought are not well developed. There are many possible contributory factors. These include the concentrated didactic content, wide but superficial reading often confined to the useful, authoritative but abridged refresher course lecture type of manual, the intellectual levelling effects of M.C.Q. examinations and the competitiveness of the North American trainee who dislikes admitting ignorance. Increasingly senior residents are encouraged to join research projects in the hope of promoting the ability to doubt and analyse. The basic problem of the shortness of the training may not be in the clinical competence of the new specialist but in the slimness of clinical authority and teaching experience of the new appointee to the teaching hospital staff.

Canada is unique amongst the commonwealth countries and the U.S.A. in having a requirement that a year of training is taken outside of anaesthesia, the so called year of medicine. This is a misnomer as most residents have a 6-9 months involvement in internal medicine with an intensive care rotation completing the year. The Royal College of Surgeons in England and the Faculty have discussed this concept but I understand there has been no implementation to date. The Specialty Board in Anaesthesia of the Royal College in Canada remains convinced of the value of this year. Several university programmes have had difficulties in organising it in a fashion which satisfied the internal medicine and anaesthesia programmes and the trainees. In the last few years, however, increasing understanding has arisen between these specialties. Certainly, a decision has to be made as to what one considers relevant medical training. To send a junior resident to a general ward to take histories and perform physicals, draw blood, search for X-Rays and investigation results and solve social problems may not harm the

resident, but probably does not justify the outlay of time. However, a resident rotated for three to four months to cardiology, who is sited in the coronary care unit, cardiac consult service and the catheterisation laboratory and who is senior enough to enter into decision making process has an excellent learning experience. A mandatory three month period is also taken in respiratory medicine which includes time in the respiratory function laboratory and on the respiratory consultation service. The second six months is composed of at least three months on a mixed medical and surgical intensive care unit and either further intensive care experience in a neonatal or paediatric unit. The opponents of the system, and there are some, feel that the time could be better spent and that the expertise in handling medical problems could be gained in the course of anaesthesia practice and through discussions with the anaesthesia staff or the consulting physicians. The majority of trainees hold a contrary opinion. They considered that they had gained from the physician's systematic and critical analysis of a problem, from the in depth knowledge of tutors in cardiology and respirology and the opportunity for interdisciplinary relationships.

Each programme is required by the Royal College to have a well defined system of intraining evaluation. The residents performance is reviewed during and at the completion of each rotation as are the results of any written tests taken. The evaluations are designed to spell out strengths and weaknesses of the resident, they are discussed with the resident. These evaluations form the basis for promoting the trainee to the next year of training. The trainees evaluate each rotation and the didactic seminar programmes and their lecturers.

The written Royal College certificate examinations are taken at the beginning of fourth year of training. If a candidate is successful, the oral examination takes place at the completion of that year. The examination committee require a final intraining evaluation report to be prepared by the programme for each candidate prior to the oral examination. This is a summative report based on the candidate's final year of training. This is made available to the examiners at the time of the oral examination. If the candidate is a clear pass, no reference is made to the report. However, in a possible fail situation the examiners read the evaluation and act as they see fit. A percentage of borderline candidates in anaesthesia are passed on the basis of this report. The increasing importance given to this final evaluation stems from disquiet within the Royal College regarding the oral examination system. In 1975, the examination committee made the following statement. "We believe that the present Royal College oral examination system especially in the disciplines that have a large number of candidates presents several very serious problems." Recommendations were made for the expansion and improvement of training evaluation of residents, and

the eventual replacement of the oral examination by university based intraining evaluation, for those candidates who have been approved for certification by their own universities, was suggested. The overall standard of these reports as yet has not justified the Royal College in shelving the oral examination in any specialty. It could be said, however, that the examination process leading to certification in anaesthesia consists now of three components: written examinations, a final intraining evaluation report provided by the medical school and the oral examination in two parts conducted by the College.

#### CONTINUING EDUCATION

Canadian anaesthetists following certification are admitted to the Fellowship of the College and are subject to its code of ethics, including individual commitment. Compliance to the College's gentle persuasion is not striking. A review of the registration lists over a recent five year period showed that at the best one-third of the active members of the Canadian Anaesthetists' Society attended one or more of the annual meetings. Several comprehensive self-assessment programmes designed by the Canadian Anaesthetists' Society for the privacy and comfort of home learning attracted between 10 and 30% of the members. These figures, of course, give no indication as to the participation of individuals in the wide range of other educational activities.

Canadian physicians watch with a variety of emotions the activities of their colleagues in the United States. Some apprehension was generated through the American Medical Association's approach to continuing education. Arising from purely professional motivation and as an encouragement to physicians to increase their participation in continuing medical education, the Association proposed some recognition to those individuals who could demonstrate the investment of 150 hours in educational programmes over 3 years. The honour or educational carrot was called the "Physician's Recognition Award". The hours could be spent in different activities but the credits were so arranged that emphasis was placed on attendances at major courses. From the start that this system was *voluntary*, it placed no great educational strain on individuals. Many physicians were already participating to this extent and the issue really turned on whether the individual had a physician recognition award certificate to hang on the wall of his office. Fortunately or unfortunately, as the process became established the number of volunteers reached the stage where to volunteer had become the norm, and then inevitably some agency made mandatory the fruit of voluntary effort. This happened quickly. Within a few years documented evidence of continuing medical education through the physician's recognition award or some modification was required for relicensure from state licencing boards, membership of state medical



societies, hospital accreditation, malpractice insurance and continuing membership in specialty societies. The physician's recognition award has resulted in mandatory continuing education throughout the States without any clear evidence of its value in promoting physician competence. The societal pressures such as the physician's accountability to the public, the dictates of malpractice and consumerism all were potential stimuli in this development. A major effect in this turn of events was the creation of a multi-million dollar educational activity. In the 1970's the number of courses mushroomed. The Journal of the American Medical Association listed 9,000 C.M.E. courses in 1979-80. The North American physician was provided with a bewildering selection from which to choose. These were highly academic courses, subspecialty courses or rather relaxed courses on the ski slopes, on the cruise ship or in the Caribbean. A modest review course in McGill increased in size to 300-400 registrants.

However, a more significant event followed. The first intimation appeared in 1969 when the American Board of Family Practice introduced what has been called the first self destruct phase in its by-laws. "Certification issued by that Board is to expire within 6 years, renewable for a like period by a process to be determined". The doctrine of "once a specialist, always a specialist" was under review. By 1974, all the American Boards of Specialists had indicated an endorsement of the concept of recertification. Recertification implies that not only would the specialists be required to maintain an interest in continuing medical education but also take some objective test to show that the physician maintained his or her competency. The political, technical and logistical problems posed by such a scheme were well recognised by all the Boards. They, however, showed a determination to proceed and in 1978 the American Board of Anaesthesiologists announced voluntary recertification through a written examination to be held first in 1984. As might be imagined, there was much unhappiness in the specialists' ranks, particularly regarding the nature of the objective test. There may be many good doctors who are bad examinees. The validity of examinations as evaluators of clinical competence is in doubt. The practitioner will believe that exams are coming from the ivory towers where professors and educationalists spend more time in controversial question construction than in knowing how to take care of sick patients. How can an examination relate to the different practice profile? Can anaesthetists involved only in obstetric anaesthesia be expected to maintain competence in problems relating to open heart surgery? Many are concerned that the fate that befell the physician's recognition award would befall recertification, when professional status and livelihood would be put in jeopardy. At the moment the

specialty societies are having second thoughts about recertification. Most specialty boards including anaesthesiology have shelved their programmes, at least meantime. Mandatory continuing medical education is becoming more palatable and less threatening than even voluntary recertification. This debate is far from over.

In Canada the Medical Association and the Royal College of Physicians and Surgeons are not in favour of mandatory continuing medical education. The less acute societal pressure and the cautious conservatism of Canadians have led to this non endorsement. One provincial licensing authority requires evidence of continuing education for annual relicensure and one Specialty Board for continuing membership. The resources of the medical education development of the United States and its diversity, innovation and expertise has been made available to the Canadian physician at little price on our behalf. However, in Canada there is a growing trend to use a more direct method of assessing physician's competence than through C.M.E. credit systems or recertification, namely the evaluation of performance by a form of medical audit. Several provincial licensing authorities have the legal authority to monitor the quality of health care and the Quebec College has evaluated a considerable number of physicians in office or hospital practice through record reviews. If physicians are adjudged to be incompetent or marginally competent, remedial education may be mandatory. The North American physician not unnaturally complains that their Society is unique in its obsessive emphasis on competence. It is most unlikely that the profession will retract systems that are now so firmly entrenched. Further the physician is confused by the conflicting reports as to the value of C.M.E.

The literature and commentaries of the 1970's dealing with continuing medical education carried the message doctors do not learn much and even when they do, the knowledge does not lead to a change in behaviour. The educationalists who made these statements were looking in a single minded manner at the process rather than the product. Their concern was to identify the most effective learning strategies in the hope that they could discard the less useful forms of continuing medical education.

Several studies in the 1970's documenting improved competence or performance were disregarded on the grounds of methodological shortcomings. Despite the findings of the educationalists, it is clear that doctors do learn. We are no different from any other group subjected to adult education. The evidence for this is overwhelming in every specialty. The majority of us are not practicing now as we were a few years ago. Our practice patterns are changing. For example, most of us do not use high concentrations of nitrous oxide in the patients with air in their pleural cavities or in their

cerebral ventricles. Similarly we have learned from our cardiac anaesthesia colleagues how better to handle patients with ischemic myocardial disease. We are familiar with the use of beta blockers and calcium antagonists, and we are more proficient in the management of postoperative pain. How do we change so much if the effect of a single educational event is so small? The key word to this paradox is "contamination". Contamination in this context means that the different sources provide the same educational message, an essential feature of our learning process. These sources are readily available to us and to impinge on the everyday life of a physician through peer contacts, journals, consultation, departmental rounds, drug sales personnel, mass media and others.

Really important messages should be and are restated incessantly in many sources. These messages do not

reside exclusively at conferences and meetings, but these are certainly one way of receiving exposure. Good courses rightly attract an audience, partly because they supply new ideas but often they provide reinforcement through repetition and through the opportunity for discussion between participants. Also, the busy practitioner is allowed some breathing time in which to digest and consolidate the bits of new information to which he has recently been exposed. The other benefits of attending meetings are amply demonstrated by this delightful one in Peebles in that we are provided with a chance to discuss mutual areas of interest with our colleagues, meet with our previous acquaintances, establish new ones, to relax, recharge our batteries and enjoy the fellowship of our profession and specialty.



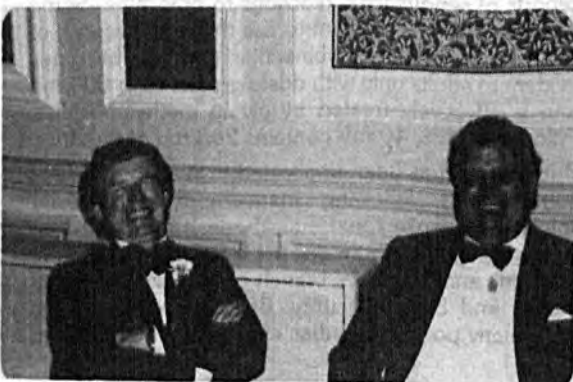
The One That Got Away



Photographs: Dr W. R. MacRae and Dr J. A. W. Wildsmith

PROVERBS:

Chapter 6 v 10



Chapter 4 v 1



## BUPIVACAINE AND PRILOCAINE IN INTRAVENOUS REGIONAL ANAESTHESIA

Intravenous Regional Anaesthesia (I.V.R.A.), introduced in 1908 by Bier and later popularised by Holmes has been shown to be a simple, effective method of producing surgical analgesia of the limbs. The technique is particularly suitable for outpatient surgery of the hand and wrist, and so has achieved wide popularity in casualty departments, where it has frequently been performed by non-anaesthetists. The safety of the technique, however, has been questioned recently. Reports of deaths and severe toxic reactions due to I.V.R.A. in both the lay press and specialist journals<sup>(1)</sup> indicate a dramatic rise in morbidity and mortality from the technique.

The factors implicated in this rise have been identified by Heath<sup>(1)</sup> as:

1. Equipment failure
2. Inadequately trained personnel
3. Inappropriate drug usage

Equipment should be simple, reliable and well maintained, and used by personnel capable of recognising and treating local anaesthetic toxic reactions quickly and effectively. Drug usage in I.V.R.A. is controversial. Many drugs have been used in I.V.R.A. and recently debate has centred on the use of bupivacaine and prilocaïne<sup>(2)</sup>. These drugs have been compared in I.V.R.A.<sup>(3)</sup> but not in equipotent doses. Bupivacaine has an *in vivo* potency four times that of prilocaïne<sup>(4)</sup>. The study, therefore, was designed to compare the effects of I.V.R.A. with two equipotent dose levels of bupivacaine and prilocaïne in volunteers.

## METHODS

Six male volunteers took part in the study, which had received approval from the hospital ethical committee. On four occasions subjects underwent I.V.R.A. of the non-dominant arm using a standard technique, and 40 mls of local anaesthetic solution. The solutions used were:

- a) 0.125% bupivacaine
- b) 0.2% bupivacaine
- c) 0.5% prilocaïne
- d) 0.8% prilocaïne

The solutions were administered in a randomised double-blind sequence and the end of injection taken as time zero for testing.

At one minute intervals from time zero, sensory blockade to pinprick and forceps pinch was assessed at six marked sites chosen for their representation of small peripheral nerve branches. Motor power was also tested by assessing handgrip of an infusion bag connected to pressure transducer and pen recorder. Twenty minutes from time zero the tourniquet was deflated and removed, and testing continued until full recovery had occurred.

Following cuff release, subjects were asked to grade

any systemic side effects, and also to report when their arm and hand felt completely normal.

## RESULTS

Onset of pinprick analgesia was rapid with all solutions. There were no statistically significant differences between drugs or between doses (fig. 1).

Forceps analgesia onset was usually delayed by 2-4 minutes from pinprick analgesia at the same site, but no solutions consistently produced full blockade. There were no significant differences between drugs, but increase of dose with each drug produced significantly ( $p < 0.05$ ) more rapid blockade. Sensory recovery occurred rapidly, with forceps sensation reappearing before pinprick sensation. Increase of dose with both drugs produced longer duration of blockade ( $p < 0.05$ ) and prilocaïne produced more prolonged blockade than bupivacaine in equipotent dosage ( $p < 0.01$ ) (fig. 1).

Motor blockade appeared most rapidly with bupivacaine in both 0.125% and 0.25% solutions ( $p < 0.01$ ). Increase of dose with both drugs produced more rapid motor blockade. All solutions eventually produced 100% power loss. Motor power returned more slowly with increased drug dose, and bupivacaine consistently delayed power recovery.

Side effects noted on tourniquet release were greater with the higher doses of drug, and prilocaïne 0.8% produced the greatest side effects. The "time to arm normal" was greater for bupivacaine than for prilocaïne (table 1).

Increase of dose with each drug had no significant effect, but bupivacaine produced much longer subjective blockade than prilocaïne ( $p < 0.01$ ).

## DISCUSSION

This study has shown that prilocaïne and bupivacaine in equipotent dosages produce almost identical blockade, thus the choice between these drugs for I.V.R.A. rests on their relative toxicities.

The concentrations of prilocaïne available in this country limit its use to infiltration or I.V.R.A., but it is used widely in other countries for all forms of regional anaesthesia. Despite this wide usage, there are no reports of serious toxic reactions to prilocaïne. Some anaesthetists are reluctant to use the drug because of the risk of methaemoglobinaemia. Cyanosis becomes evident in adults only with doses greater than 600 mg and is effectively treated by giving methylene blue. Prilocaïne 0.5%, 40 mls contains 200 mg of the drug.

Bupivacaine has been implicated in serious and fatal complications following inadvertent intravascular injection during regional anaesthesia. It is also the drug involved in all the deaths due to I.V.R.A. reported to the Scientific and Technical branch of the Department of Health and Social Security. Bupivacaine may have particularly powerful cardiac effects in bolus injection,



with hypoxia and acidosis. Given equipotent doses entering the circulation, prilocaine also has the advantage of greater drug extraction in the lungs.

Safe I.V.R.A. demands the proper use of well-maintained equipment by a person capable of recognising, and treating quickly and effectively, all possible toxic reactions to the drug and dose given. These requirements virtually compel that this person should be an anaesthetist. The drug used for I.V.R.A. should be prilocaine. It is at least as effective as equipotent doses of bupivacaine. Forty mls of 0.5% prilocaine is a suitable adult dose, which may be reduced if the arm is particularly small. Prilocaine is available in plain solution at this concentration and so does not require further dilution.

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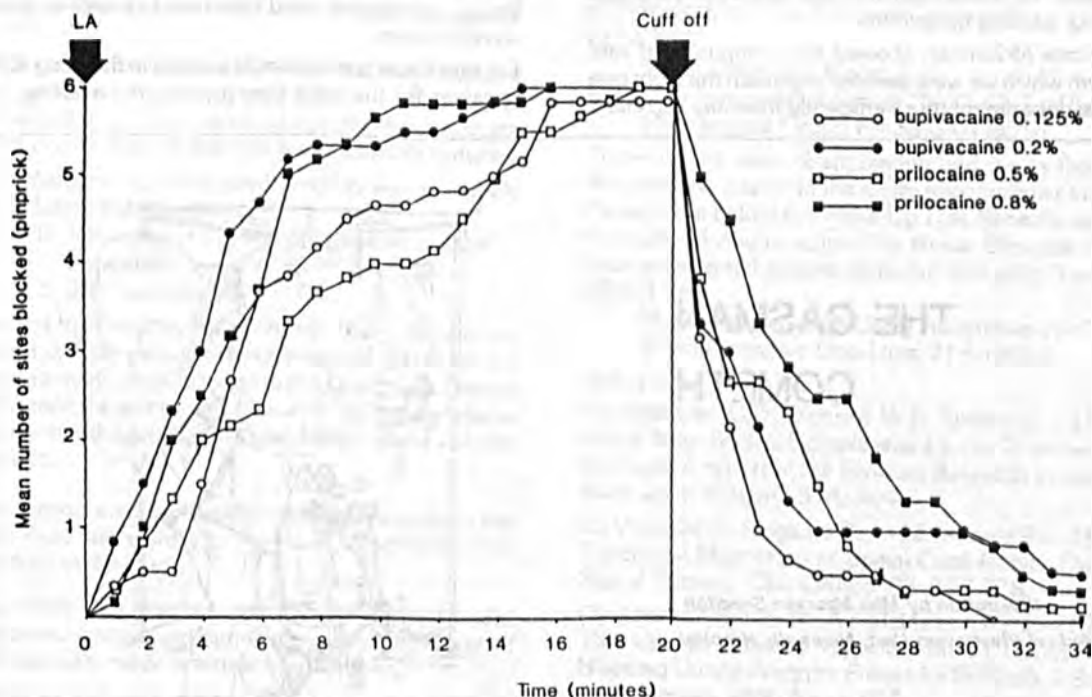
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Table 1

Drug	Mean Side Effect Score (Max 100)	Time to Arm Normal (Mins)
0.125% bupivacaine	12.67 (S.D. 6.15)	116 (S.D. 37.74)
0.2% bupivacaine	28.17 (S.D. 13.7)	124.5 (S.D. 26.46)
0.5% prilocaine	17.17 (S.D. 11.63)	28.25 (S.D. 8.66)
0.8% prilocaine	41.67 (S.D. 26.01)	47.5 (S.D. 16.44)

Fig 1

### ONSET AND REGRESSION OF BLOCKADE TO PINPRICK



# REGISTRAR'S MEETING

ABERDEEN ROYAL INFIRMARY, MAY 27th 1983

I am sad to report that having checked through previous Newsletters, the attendance at this year's Registrar's Meeting was by far the lowest on record. Only 22 registrars attended in contrast to previous attendances of 60 or 70. I found it particularly sad that no registrars made the trip from Glasgow. There were reasons—the Final F.F.A.R.C.S examination was held around this time and many registrars were therefore away from their base hospitals which caused staffing problems and precluded others from attending the meeting. However, this does not excuse such a lamentably small attendance and it is to be hoped that by careful timing, and good advertising future meetings will be packed by registrars eager both to learn and to meet their colleagues.

The meeting followed the established pattern with demonstrations for small groups in the morning and formal lectures in the afternoon. The use of computers in anaesthesia occupied a large part of the content of the meeting. Dr A. Sheikh showed us a method for assessing recovery from dental anaesthesia in which patients played a video game, bombing targets from moving aircraft. If they bombed out the targets they were allowed home—if still bombed out themselves they failed the test and had to stay longer and repeat the test later! Dr Sheikh also demonstrated a computerised M.C.Q. training programme.

Dr Fiona McLennan showed the computerised rota system which we were assured organised the night rota in the department more efficiently than any secretary.

Dr D. Hendry and Dr D. G. Ross demonstrated the computer system that is being installed in the Intensive Care Unit.

Dr Tunstall demonstrated his "isolated forearm technique" in a film entitled "Awareness by request" which showed a patient undergoing Caesarean section under "general anaesthesia" who was aware of what was happening although pain-free and quite happy.

After lunch Dr T. G. Shields gave a most interesting lecture about the problems of anaesthesia under hyperbaric conditions. He described the dangerous conditions under which divers worked, and the methods used to provide a medical service for these men in the event of an accident. He stressed the hazards involved in using inhalational anaesthesia and pointed out that divers may be at increased risk for days after returning to normal pressure.

Lastly, Dr D. G. Ross gave a lecture on information processing in the I.T.U. and anaesthetic department. He showed how computers could be used to collect data and present it in easily assimilated form, analyse data and give information about patient progress, and be used in training and continuing education of nursing and medical staff. He suggested that individual micro-computers were better suited to this application than larger computers, and discussed possible future developments.

I'm sure those present would join me in thanking all the speakers for the work they put into the meeting.

## THE GASMAN COMETH

*Illustration by Miss Maureen Sneddon,  
Medical Illustration Unit, Ninewells Hospital*



# SCIENTIFIC MEETING

## GLASGOW—NOVEMBER 11th, 1983

This year's Scientific Meeting was presented by staff from The Royal Hospital for Sick Children and the Queen Mother's Hospital. It was held in the Walton Conference Centre at the Southern General Hospital and was attended by over 100 anaesthetists. Dr John Vance is to be congratulated on his organisation of this excellent meeting.

Dr James Collins chaired the morning session, which

was devoted to paediatric anaesthesia and the afternoon session, on obstetric anaesthesia, was chaired by the President, Dr D. B. Scott. Summaries of the papers are printed below and all the speakers are to be congratulated not only on the content of their papers but also on the quality of the presentations. After tea Professor J. P. Payne, from the Research Department of Anaesthetics, The Royal College of Surgeons of England, delivered the sixth Gillies Memorial Lecture, entitled "The Quality of Care."

### ANAESTHESIA FOR SPINAL FUSION IN CHILDREN

Dr C. S. CAIRNS

Two of the major problems of spinal fusion with Harrington Instrumentation are:—

- (1) Spinal cord damage
- (2) Heavy blood loss

The Scoliosis Research Society in a survey conducted among its members and published in 1975 found a post-operative incidence of spinal cord damage of 0.72%.

If the cord is damaged, early diagnosis and treatment are essential for recovery. When a Harrington distraction rod is the cause of the damage, recovery often occurs if the distraction is immediately reduced.

Two methods of testing cord function are commonly used during the operation:—

- (1) Measurement of somato-sensory evoked potentials
- (2) The wake-up test

The first method has the advantage that it requires no patient co-operation. Evidence suggests that there is a correlation between damage to the sensory and motor columns in the spinal cord. However, is it too early to be certain that the test will always identify motor column damage.

The second method first described by Vauzelle,<sup>(2)</sup> has been used successfully in the Royal Hospital for Sick Children in 48 cases.

One case of possible spinal cord damage was diagnosed and treated during the operation. The child subsequently made a satisfactory recovery.

Efforts to reduce operative blood loss often include

hypotension. It has been used with effect to reduce bleeding in patients undergoing spinal fusion. <sup>(3)</sup> No report of its use in conjunction with the Wake-Up Test has been made. The author has used modest hypotension—a systolic pressure around 80 mmHg only up to the Wake-Up Test. After the Wake-Up Test the systolic pressure was kept over 100 mmHg.

#### RESULTS

##### *Mean Operative Blood Loss*

Non-Hypotensive Group N=21 43.7 ml/kg.

Hypotensive Group N=33 39.0 ml/kg.

These results were disappointing and it was thought this might be related to the increasing muscular tone in the last hour before the Wake-Up Test. Recently neuromuscular blockade judged by Nerve Stimulator has been maintained almost up to the Wake-Up Test.

#### RESULTS

Hypotensive Group Using Atracurium N=10

Mean Operative blood loss 21.5 ml/kg.

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## ANAESTHESIA FOR THE PREMATURE

Dr D. C. MILLER

Over the last 20 years there has been a marked improvement in the survival of small premature infants. The survival rate of babies weighing less than 1000 gms is now 80% compared with 32% in the mid-1960s (Smith and Smith, 1972; Kopelman, 1978).

Recent studies of these infants surviving has shown that only 6% have major neurological sequelae (Kitchen, 1978). The improvement has been due to better perinatal care and a fuller understanding of the physiological systems of the premature baby.

With the increase in numbers surviving surgery for the premature is no longer uncommon and the anaesthetist involved in this field must be aware of the problems which can occur in this age group. There are a number of conditions which are related to the immaturity of various systems in these babies.

R.D.S. is now better understood but central respiratory control may be poor and apnoeic attacks a feature. Hyperbilirubinaemia results from the inability of the liver to conjugate and this process may be further inhibited by sepsis and drugs. Coagulation in the premature is different in that a tendency to hyper and hypocoagulation exists simultaneously and the utilisation of Vitamin K is impaired. Hypoglycaemia is common and if undiagnosed may lead to seizures but too aggressive treatment will produce hyperglycaemia in a number of cases.

Temperature control is very poor and active steps must be taken to warm the baby during transport to the theatre as well as during the operative procedure.

The types of cases seen may be categorised as those whose condition occur in all neonates but more commonly in the premature. These would include inguinal hernia, hydrocephalus, tracheo-oesophageal fistula and diaphragmatic hernia. The second group are those whose condition was diagnosed in utero. With the development of better diagnostic aids this group must increase in the future. The last group consists of conditions which are seen only in the premature and this would include necrotizing enterocolitis and persistent patent ductus arteriosus.

Surgical ligation of P.D.A. has become very common in the last two years and the results from 26 cases were presented.

The tiny premature infant has special problems; he is not a small neonate any more than a neonate is a small adult. Because of the immaturity of all his physiological systems he balances at the edge of survival. It is important that all involved are acquainted with his problems and are therefore able to offer a chance of recovery to normal childhood.

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## THE CHOICE OF LOCAL ANAESTHETIC FOR EPIDURAL CAESARIAN SECTION

Dr D.A. DUTTON

The increased popularity of lumbar epidural anaesthesia for lower uterine segment caesarian section, amongst both clinicians and patients, requires that the procedure is carried out safely and efficiently, with a high degree of success in achieving an adequate block for surgery. The introduction of more concentrated solutions of bupivacaine and etidocaine has been reported to provide a more rapid onset of sensory and motor block with a greater frequency of adequate analgesia. A study was set up to establish whether or not such advantages might be significant in operative obstetric practice.

One hundred women undergoing elective caesarian section under epidural anaesthesia received either 0.5% or 0.75% plain bupivacaine, or 1.5% etidocaine with 1:200,000 adrenaline by random allocation. The time taken to establish a satisfactory epidural block for surgery to commence was significantly shorter in the group who received etidocaine compared to either of the two groups who received bupivacaine. The efficacy of the sensory block was significantly greater in the 0.5% bupivacaine group compared to the etidocaine group. There was no difference in the quality of sensory analgesia between the two groups who received bupivacaine.

Plasma bupivacaine levels (maternal and foetal) were measured in 34 patients. There was no significant difference in the maternal levels between the groups. Foetal levels (umbilical venous) were, however significantly increased in the 0.7% bupivacaine group. The conclusions of this study are that, in the practice of

obstetric anaesthesia, there appears to be no real advantage in using bupivacaine in concentrations exceeding 0.5% and that 1.5% etidocaine may be of some limited value in urgent situations but, due to its relatively poor quality of sensory analgesia, its routine use cannot be recommended.

## PULMONARY ARTERY HYPERTENSION ASSOCIATED WITH THE PIERRE ROBIN SYNDROME

Dr D. S. ARTHUR

The Pierre Robin Syndrome consists of microgathia cleft palate and glossoptosis. It is the glossoptosis that leads to feeding and respiratory difficulties. Respiratory obstruction is common but aspiration of feeds occurs not infrequently, due to difficulty with swallowing.

Abnormalities known to be associated with the syndrome are nerve palsies, skeletal malformations and cardiac abnormalities. Specific congenital cardiac disease does occur but has rarely been specified in reports of the condition.

During the six years 1977 to 1983 there have been five cases of Pierre Robin Syndrome at the Royal Hospital for Sick Children, who have shown signs and symptoms of pulmonary artery hypertension and cor pulmonale. In two cases the diagnosis has been confirmed by cardiac catheterisation and in three by echocardiography. In none has there been evidence of specific congenital cardiac disease.

Four of the patients required tracheostomy following which a dramatic resolution of the pulmonary hypertension and cor pulmonale has occurred. The fifth patient improved spontaneously with intensive care and nasopharyngeal intubation.

Pulmonary hypertension has been well documented in association with chronic airway obstruction, most commonly as a result of enlarged tonsils and adenoids but also in a case of Crouzon's disease and in laryngo-tracheo malacia.

The aetiology of the pulmonary hypertension is almost certainly pulmonary vasoconstriction as a result of hypoxia, compounded by the presence of a respiratory acidosis. Pulmonary oedema may also occur as in altitude sickness, as a consequence of hypoxia.

Chronic airway obstruction due to glassoptosis in Pierre Robin Syndrome can occur very early in life but may appear after a few months due to the more rapid growth of the tongue, when compared with the mandible, early decannulation should be avoided as should early palatal surgery as this may also compromise the airway.

Tracheostomy is recommended rather than lip tongue anastomosis if there is evidence of pulmonary hypertension.

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## GASTRIC EMPTYING DURING LABOUR

Dr W. FRAME

The number of maternal deaths associated with anaesthesia has not decreased in the last 26 years and unexpected vomiting or regurgitation with resulting aspiration of gastric contents during induction of anaesthesia continues to play a major part in the causation of these deaths.

Although labour itself does not significantly delay gastric emptying, there are a number of factors which may cause delayed gastric emptying during labour. By far the most important of these is administration of narcotic analgesics, which cause gastric contents to take as long as 12 hours to pass through the duodenum. Furthermore, narcotics reduce the tone of the lower oesophageal sphincter and this, coupled with the delaying effect on gastric emptying, predisposes to regurgitation or vomiting at induction of anaesthesia, often with resultant aspiration of gastric contents and Mendelson's syndrome.

Clearly if the narcotic-induced delay in gastric emptying during labour could be reversed this would be beneficial. In 1980, Nimmo et al demonstrated that naloxone reversed the narcotic-induced delay in gastric emptying in healthy volunteers. Therefore we decided to explore whether or not the drug could produce a similar effect in women during labour.

Thirty women were studied during labour, their gastric emptying rates being measured by utilising the kinetics of paracetamol absorption after an oral dose. The rate of gastric emptying determines the rate of absorption of

orally administered paracetamol, since this drug is not absorbed from the stomach to any extent but is rapidly absorbed from the upper small intestine. Therefore, rapid paracetamol absorption after an oral dose indicates rapid gastric emptying and delayed absorption reflects delayed emptying.

The women all received pethidine 100 mg. i.m. for analgesia during labour and subsequently extradural analgesia was instituted for obstetric indications. The ladies were then randomly allocated into two groups, one group receiving naxolone 1.2 mg. i.v. and the other 3 ml. placebo saline i.v. Each patient was then given 1.5 g. paracetamol orally with 100 ml. water and blood samples were withdrawn at 15 minute intervals for 90 minutes and plasma paracetamol concentrations measured by high performance liquid chromatography.

Plasma paracetamol concentrations were higher in the naxolone group at all sampling times and the logarithm of the area under the curve was significantly greater in the naxolone group up to the 30 minute sampling time. This suggests that a significantly greater amount of paracetamol was absorbed in the naloxone group during the first 30 minutes only and hence that naloxone at least transiently reverse the delay in gastric emptying produced by narcotics administered during labour.



## THE QUALITY OF CARE



It is a singular honour and a special privilege for me to have been invited to give this memorial lecture in honour of Dr John Gillies. I welcomed it all the more because it gives me an opportunity to express publicly my own personal debt of gratitude to Dr Gillies whose advice and support continued to be available to me long after I had left the Department of Anaesthesia in the Royal Infirmary of Edinburgh and indeed up to within a few weeks of his death. In this connection I would like to quote but one example. In the late 1950's Dr Harbord, Dr Nunn and myself discussed the possibility of establishing some form of research group in anaesthesia and we sought the support of some of our senior colleagues. Few were enthusiastic, most were discouraging and one who shall be nameless was vehement in his opposition to what he called the establishment of an elite in anaesthesia. As can be imagined we were more than a little demoralised and I sought the advice of Dr Gillies which can be summarised thus. "Ignore the critics, go ahead and form your group and they will all be there." How right he was! We went ahead and I need not remind this audience that 25 years later the Anaesthetic Research Society is thriving and is a major force in the development and propagation of research in anaesthesia and related disciplines. It is no exaggeration to say that it is now the major forum for scientific discussion within the specialty.

This presentation also gives me the opportunity to say yet again that I believe and I am not alone in that belief that the contribution of Dr Gillies to the development of our specialty in the United Kingdom has been substantially underestimated. Those of us who are old

enough will remember the furious debates associated with the introduction of the National Health Service in 1948 and more particularly about whether or not anaesthetists should be given consultant status in the new service. Such arguments gave added impetus to the growing demand among anaesthetists for the formation of a strong national body concerned with academic standards. In Scotland it was the leadership and statesmanship of men like John Gillies, Tony Pinkerton and Alex Forrester who persuaded their colleagues to look beyond their parochial boundaries and to become part of the newly created Faculty of Anaesthetists in the Royal College of Surgeons of England. No-one today doubts the wisdom of that advice but at the time it was far from universally welcomed. Perhaps it should also be recorded that many of the younger age group and I must include myself amongst them thought that Dr Gillies was not sufficiently aggressive in his dealings with his surgical colleagues. In retrospect it is clear that our strength today is largely due to the tact and discretion with which Dr Gillies carried out his negotiations. It is no accident that a soundly based Department of Anaesthetics existed in Edinburgh before even the centre of post-graduate education in the United Kingdom, the Post-graduate Medical School at Hammersmith, had considered the idea.

## THE DEVELOPMENT OF ANAESTHESIA

The establishment of the Faculty of Anaesthetists has to be seen in perspective. Before 1846 major surgery was a ghastly and horrific business which almost certainly had a brutalising effect on most of those who practised it. Moreover in almost every case it involved some degree of mutilation and the case for surgery was not strengthened by the activities of the body-snatchers such as Burke and Hare who in the early 19th Century provided the anatomy schools with the corpses needed for dissection. Whether one believes that the first anaesthetic in the United Kingdom was given in Dumfries or in London is scarcely relevant. What is important is that almost immediately after the discovery of general anaesthesia had been announced detailed accounts of its use were published. For example within a few months of the general announcement James Robinson, a London dentist, published his treatise on the inhalation of the vapour of ether for the prevention of pain in surgical operations (Robinson 1847).

Surgery was never to be the same again. The advent of anaesthesia made it possible for the surgeon to approach his task logically and methodically with time on his side. Nevertheless even when Dr Gillies began the practice of anaesthesia the surgeon's main requirement of his colleague was an unconscious

motionless patient. Only gradually has the anaesthetist's duties extended to encompass other responsibilities. In this respect it is worth remembering that the fundamental difference between the wound produced by the surgeon's scalpel and that inflicted by the mobster's knife is one of motive; without the protection of anaesthesia the end-result would be the same. Thus it can be argued that the anaesthetist's task is to protect the patient from the consequences of surgical intervention. With the passage of time this responsibility has extended to include the provision of easier operating conditions for the surgeon. Today the range and complexity of modern surgery is such that the anaesthetist is expected not only to render the patient unconscious but also to paralyse his muscles and to control respiration. In addition he may have to restore blood loss and to replace body fluids, to lower the blood pressure, to induce hypothermia and even to induce cardiac arrest under certain circumstances. What these changes reflect is the increasing dependence of surgeons on advances in the field of anaesthesia.

The development of anaesthetic technology has, however, brought its own problems not the least of which are the steadily increasing costs and the dehumanising effect on medical care. On the question of cost it has been calculated that in most countries between one fifth and one tenth of the gross national product is spent on health care. In the United Kingdom about six per cent of the nation's annual budget goes on the National Health Service which reflects either the overall efficiency of the N.H.S. or the parsimony of the Government or perhaps both. Undoubtedly, however, the most worrying aspect of the influence of cost on technology is the decrease in contact between the clinician and the patient. As Ivan Illich (1975) characteristically expressed it "Until sickness came to be perceived as an organic or behavioural abnormality the patient could hope to find in the eyes of his doctor a reflection of his own anguish. What he now meets is the gaze of an accountant engaged in an input/output calculation. His sickness is taken from him and turned into the raw material for an institutional enterprise." It is not necessary to accept entirely Illich's interpretation of the situation to recognise the element of truth in his criticism. The fact that sympathetic understanding can often mean more to patients than superb technical achievement is not always appreciated by the specialist clinician who may fail to recognise that what could be regarded logically as the trappings of care often mean more to patients than the substance. For such patients the caring doctor is epitomised by Sir Luke Fildes' painting "The Doctor" which hangs in the Tate Gallery. The family doctor sitting anxiously at the bedside of the sick child is the public's image of what a good doctor should be and the profession ignores that at its peril.

It has to be accepted, however, that the much admired doctor-patient relationship is passing from the scene—if it was ever there! The increase in specialisation has meant that it is rare for any one doctor to have the complete care of the patient within his province. This is particularly true in anaesthesia where there has been a tendency to concentrate on the technical achievements of the specialty rather than on the relief and comfort that the anaesthetist can provide for the patient whose fear of anaesthesia is probably greater than any other when he comes to be admitted to hospital. Quality of care demands attention to both aspects.

In terms of the doctor-patient relationship the anaesthetist is further disadvantaged in that he is seen for the most part as providing a service for another clinician. The result is that the patient is often unaware of the anaesthetist's contribution to the successful outcome of major surgery. Paradoxically perhaps, unlike most clinicians who merely prescribe drugs anaesthetists are applied pharmacologists who not only administer extremely potent and potentially lethal substances but also remain with their patients until the effects have worn off. This may occur naturally by the processes of degradation and elimination or in some instances by the use of suitable antagonists to reverse for example the action of neuromuscular and ganglion blocking drugs. It was my good fortune to be in Edinburgh when both these groups were being explored and developed in clinical practice. It was an exciting period; the concept of deliberately lowering the blood pressure to reduce surgical bleeding and to improve access had just been introduced and various techniques for inducing hypotension were being widely practised. Total spinal anaesthesia was being employed for thoraco-lumbar sympathectomies by Griffiths and Gillies (1948) and in the neurosurgical unit deliberate arterial bleeding was being used by Bilsland (1951) to facilitate the removal of cerebral tumours and the obliteration of aneurysms. It needed to be stressed that these techniques were not undertaken lightly and John Gillies himself described them as physiological trespass. The need for careful records was continually emphasised and suitable monitoring was mandatory. In this connection it is interesting in the light of the many debates on how low the blood pressure can be allowed to fall to note the observations of Griffiths and Gillies (1948). According to them within ten to twenty minutes of the administration of a total spinal anaesthetic the blood pressure could no longer be recorded from the brachial artery and the radial pulse had ceased to be palpable. The apex beat, however, was palpable with a rate between 40 and 50 beats per minute and it was often the only means of recording the heart rate. Although it was slow it was also forceful and sustained! There is a tendency to equate good monitoring with expensive equipment and certainly if hypotension is to be computer controlled (Potter et al 1983) it is

inevitable that it will be costly. However, it is also possible to carry out effective monitoring reasonably cheaply. Based on the aneroid pressure monitor used by Bilsland (1951), Mallard, Payne and Peachy (1963) adopted such a manometer for use with an intra-arterial cannula. Despite objections to the direct measurement of blood pressure on the grounds of potential risk it is clear that the technique can be used safely for routine measurements (Bishop and Payne 1983).

A further anxiety in the management of controlled hypotension at that time was the risk of hypoxaemia and the development of cyanosis was a sign that demanded immediate investigation and the exercise of clinical judgement. The difference between cyanosis of respiratory origin and that due to circulatory stasis was well recognised yet a further ten to fifteen years were to elapse before the definitive papers on the relationship between hypoxaemia and anaesthesia was defined (Nunn and Payne 1962) and thereafter it was demonstrated that the arterial oxygen tension fell with advancing years and that this had significance in the post-operative management of the elderly (Conway, Payne and Tomlin 1965).

On the subject of neuromuscular blocking drugs Dr Gillies in his Joseph Clover memorial Lecture delivered at the Royal College of Surgeons of England on 29th March 1950 (Gillies 1950) drew attention to the general improvement in anaesthetic practice brought about by their introduction. He went on to argue that by such means abolition of muscular tone was now easy and although certain difficulties and dangers still remained conditions for the patient had improved and a considerable element of strain had been eliminated from the work of the surgeon and anaesthetist. Amongst the difficulties and dangers that still persist to this day one of the most prominent is the failure to successfully reverse the action of the curariform drugs by neostigmine. Respiratory depression and even respiratory arrest have been reported from time to time particularly after neostigmine has been given in the recovery ward or in the intensive care unit and this has been attributed to a so-called neostigmine resistant curarisation. However, it has now been shown that neostigmine alone in doses commonly used clinically is capable of inducing neuromuscular block and the suggestion now is that the neuromuscular block seen in such circumstances is neostigmine induced (Payne, Hughes and Al Azawi 1980).

It will not have escaped notice that these examples of clinical research are personal and specially selected. This was deliberate to make the point that interests developed during the period of training tend to remain thereafter and that in my own case work begun in Edinburgh more than thirty years ago is likely to be continued into my retirement.

## ORGANISATIONAL INFLUENCES

So far this presentation had been concerned largely with personal influences on the quality of care. It is appropriate now to consider what may be regarded as organisational influences which have contributed to the quality of care at present provided. One criterion of a learned profession is that it has the power to set and maintain its own standards. Increasingly, however, the profession's self-regulatory mechanisms are coming under challenge for example from Ivan Illich (1975) who claims that too much political and economic power is placed in the hands of the doctors and from the members of the Royal Commission on the National Health Service (1979) who are not convinced that the profession was sufficiently alert to the need for some form of peer review of standards of care and treatment. Today responsibility for the profession lies with the General Medical Council first set up 125 years ago to ensure that a uniform standard of training existed in all medical schools in the United Kingdom and that a register of suitably qualified practitioners was maintained. More recently with the Medical Act of 1978 the responsibilities of the General Medical Council have been extended to take into account the need for supervision of pre-registration posts for newly qualified doctors and for the organisation of suitable post-graduate training programmes for newly registered medical practitioners.

It is important to remember, however, that the General Medical Council was set up in response to prolonged agitation and sustained political pressure by doctors themselves over a period of more than 20 years. The Medical Act of 1958 which gave legal recognition for the first time to the existence of a body of qualified doctors and to their importance to the state was only passed after 17 earlier Bills had failed to reach the Statute Book. The driving force behind this pressure was the British Medical Association founded in 1832 by Dr Charles Hastings in Worcester to counter the influence of the London Royal Colleges regarded at the time as the bastions of privilege and nepotism and concerned more with protecting their own interests than with the welfare of the community.

Medical reform was badly needed. Medical education was haphazard and often arranged on a casual basis in one of the many private medical schools linked to some of the larger hospitals in London. In fairness some of the teaching was of good quality in contrast to the courses of medicine offered by some of the older universities. In theory students were expected to attend a set number of lectures given by the Regius Professor over a fixed period. In practice, however, it was discovered in one university that no Regius Professor had lectured for more than one hundred years. Needless to say this did not prevent the conferment of degrees by the university in question (Vaughan 1959).



Once graduated there was no guarantee that the young doctor would be able to earn a living. The attitude of doctors was intensely parochial and in the London area for example the Royal College of Physicians could prevent even a graduate from the University of London from practising in the capital.

The avowed purpose of the new Association was to change all this. Its objectives were to promote the medical and allied sciences and to maintain the honour and interests of the medical profession. On balance it can be fairly said over the past 150 years that the British Medical Association has fulfilled these objectives. Thus the B.M.A. and the G.M.C. between them have set the standards for medical education and care at a general level but what of the specialist fields? This presentation is concerned only with anaesthesia and at national level two organisations have made a substantial contribution. The Association of Anaesthetists of Great Britain and Ireland and the Faculty of Anaesthetists in the Royal College of Surgeons of England can both claim credit for significant improvements in the overall standards of anaesthetic practice. In particular the Association's recent survey of anaesthetic morbidity and mortality has highlighted certain deficiencies in anaesthetic training and practice and although perhaps not handled as effectively as it might have been it was a serious attempt to bring about an improvement in the standard of anaesthesia with a consequent reduction in mortality (Lunn and Mushin 1982). This and similar surveys have been an important component of the Association's education programme and combined with its regular scientific meetings it provides an opportunity for anaesthetists to keep up to date with anaesthesia practice.

Perhaps the Association's most imaginative approach to the problem of the maintenance of standards was the initiation of a scheme to help anaesthetists whose competence to practise may have been affected by illness or some other factor. The scheme is voluntary, non-coercive and confidential and has the aim of offering to help doctors at an early stage before the General Medical Council has become involved. Because of the confidentiality aspect it is difficult to assess accurately the value of the scheme but there is little doubt that some doctors have derived substantial help in this way.

The Faculty of Anaesthetists is the body which has ultimate responsibility for the standards of anaesthetic practice. Such responsibility is discharged through its system of examination, its national network of regional education advisers and faculty tutors, its arrangements for recognising hospital training programmes and its authority to nominate independent assessors to appointments committees. Superimposed on these powers are regular series of lectures, symposia and scientific meetings together with the promotion of guest

lectures by distinguished overseas visitors all of which contribute to the Faculty's scheme of continuing education. In 1959 its sponsorship of a Research Department of Anaesthetics in the Royal College of Surgeons of England was a single act of perspicacity at a time when there was only one Chair of Anaesthetics in existence in England and did much to promote the development of research in anaesthesia and more generally the academic expansion of the specialty.

These, however, are national bodies and their influence is largely through example exhortation and encouragement. In the final analysis the individual anaesthetist's willingness to attend and to participate in the activities of his or her own local society is probably of greater significance for the maintenance of standards than any other involvement. That was certainly the view of Sir William Osler (1897) and his remarks bear repetition.

"No class of men needs friction so much as physicians; and no class gets less. The daily round of a busy practitioner tends to develop an egoism of a most intense kind to which there is no antidote. The few setbacks are forgotten, the mistakes are often buried and ten years of successful work tend to make a man touchy, dogmatic, intolerant of correction and abominably self-centred. To this mental attitude the Medical Society is the best corrective, and a man misses a good part of his education who does not get knocked about a bit by his colleagues in discussions and criticisms."

There can be little doubt that Dr Gillies subscribed to that view. His own attendance at medical meetings was regular both at home and abroad and he did everything in his power to encourage the involvement of his staff and colleagues in all forms of scientific activities. In the course of this presentation if I have managed to reinforce that message then I have served well the memory of Dr John Gillies.

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## Miscellany

### NATIONAL MEDICAL CONSULTATIVE COMMITTEE— SUB COMMITTEE FOR ANAESTHETICS

The sub-committee met on 7th November 1983. The membership consists of Drs. W. L. M. Baird, R. A. Bowie, C. R. Dundas, G. W. Macnab, Sheila Madsen, D. D. Moir, J. C. Murray, D. B. Scott, K. B. Slawson, J. R. C. Stubbs, with Dr Lawson *ex-officio* chairman. Matters considered included mortality associated with anaesthesia, current practice in obstetric anaesthesia, pain therapy and artificial ventilation of patients at home. It was felt that the impetus of the Association of Anaesthetists' mortality study should be maintained and that this could be achieved only by co-operation with the surgeons; it was therefore recommended that an approach be made to the Sub-committee for Surgery with the intention of setting up a combined study group. The working party formed to examine current standards of practice in obstetric anaesthesia had completed its remit. It had been a valuable exercise and had indicated a reasonably satisfactory state of affairs, e.g. to provide an optimum obstetric anaesthetic service in Scotland would require about 60 additional

consultant sessions, and the overall epidural rate was 20 per cent. For the discussion on pain therapy the Sub-committee had before it details of practice from various Scottish centres. Many anaesthetists were now involved but were often having to provide a service in addition to their normal duties, with inadequate administrative support. It was recommended to the NMCC that a need for pain therapy clinics had been proved and that their development should be supported. Another item with possible national implications was home artificial ventilation: there were not many such patients but no formal system had been devised for their management and they were being looked after on an ad-hoc basis. It was felt that although the most practicable solution was to have arrangements made locally the matter should be brought to the attention of the NMCC.

J. I. M. LAWSON

### STANDING COMMITTEE (SCOTLAND) FACULTY OF ANAESTHETIST

The main item which the Standing Committee has had before it arises from the report of the Scottish Home and Health Department and the Scottish Joint Consultants' Committee Working Party on hospital staffing structures. This recommended the setting-up of a Steering Group to look at what scope there is for a Short-type modification of the job pyramid, with

Anaesthesia as the subject of a pilot review. The Standing Committee was of the view that Anaesthesia was an inappropriate model for other disciplines but that, if the study were to take place, it should have the confidence of the specialty and the Committee should be strongly represented on the Steering Group, not least because any decisions were bound to have an

effect on our training schemes. The report of the Working Party of the Scottish Council for Postgraduate Medical Education on the training of Overseas Doctors was welcomed as an attempt to improve arrangements for these doctors within the NHS. Reservations were, however, expressed concerning which posts would be removed from the career structure and made available to overseas candidates, and how best to assess their suitability for such posts before their arrival in the U.K. It was not clear how to guarantee return to the country of origin after completion of training. The regulations of the new fellowship examination have now been published and distributed. The SSC has been kept fully informed of the detailed implementation of the new system and has been able to comment. Dental anaesthesia no longer figured prominently on the

agenda, but it was noted that there had been a modest demand for the 3-week attachments but no interest in the 3-month courses. The Scottish Home and Health Department had asked for 7 nominations to replace National Panel Members retiring on 31st March, 1984 and these had been forwarded. The National Board for Nursing, Midwifery and Health Visiting for Scotland had requested the Standing Committee's approval for discontinuing training of student midwives in the use of Emotril, Tecota and Cardiff inhalers and this had been agreed.

Finally, Dr W. R. MacRae has come to the end of his period of office after many years of very valuable service and Dr K. B. Slawson replaces him.

J. I. M. LAWSON

## OBITUARY

Dr Andrew Tindal died in May, 1983 after a short illness. He was president of the Scottish Society of Anaesthetists in 1960 and wrote the first words in the Society's first Newsletter that same year.

Everything that Andrew Tindal did was done to the absolute ultimate of achievement; while at University he held the Scottish National 100 yards record for two years in succession and included in his athletic colleagues, Eric Liddell. On qualifying he took up general practice in Strone, Argyll, and also practised in Rothesay. He decided early in his career to change to the specialty of anaesthesia at a time when specialist anaesthetists were extremely rare, and yet again he applied himself to the utmost to his chosen specialty and became a visiting anaesthetist to the Western Infirmary and Royal Hospital for Sick Children in Glasgow, and also to the Glasgow Dental Hospital.

Under the inspiration of the work of Paul Bert in 1935, he had his own pressure chamber constructed and conducted many experiments on Nitrous Oxide anaesthesia under pressure, at first with rats but later on human volunteers. The first of these in 1941, allowed Dr Tindal to extract a wisdom tooth as there was little room for an operator, thus reversing the roles of operator anaesthetist to anaesthetist operator. The results of these experiments were published in the Glasgow University medical journal *Surgo* in 1941, and were thought to be of great enough significance that the paper was re-published in 1937 in *Anaesthesia & Analgesia*, a just testimonial to the vision and achievement of Dr Tindal.

1937 saw the introduction of the Tindal Barr nitrous oxide obstetric analgesia apparatus. His fascination with nitrous oxide was total. He used the agent to treat migraine, and in the form of snow, warts, and he used little else in his extensive dental anaesthetic practice which he continued until six weeks prior to his death.

## ANDREW TINDAL

He became lecturer in Dental Anaesthesia at the University of Glasgow. Such was his reputation as a raconteur that the lecture hall was invariably full and not all present were medical students.

When away from clinical practice he demonstrated similar enthusiasm for everything he did. He was a prolific inventor designing and making everything himself, from reflecting wallpaper to variable speed gearboxes and guns to shoot round corners.

His somewhat larger than life approach to everything was demonstrated in his large cars. He was a well known sight in Glasgow driving his 1926, 4½ litre Bentley or his larger 1932 8 litre Bentley, usually accompanied by his dogs, also large—deerhounds, blood hounds, or latterly his Doberman Pinscher.

His keen interest in sailing was demonstrated in his succession of large yachts including a 12 metre. He became an acknowledged expert on the tide rip in the Gulf of Corrieveckan, north of Jura on the west coast of Scotland, where he also enjoyed himself painting, an art at which he was extremely accomplished. He is survived by his second wife and family of 4 daughters and 2 sons.

The tales surrounding Dr Tindal, part true, part apocryphal, are legion, but those who came into contact with him socially, as professional colleagues, or as patients, will all have personal memories of his infectious enthusiasm which has resulted in his eldest son, becoming a Consultant anaesthetist, now in Toronto, Canada, and also his son-in-law becoming a Consultant Anaesthetist in Glasgow.

At a time when anaesthesia was very much a Cinderella specialty, the slipper was certainly found to fit Dr Andrew Tindal, a true intellectual, artist, scientist, engineer and physician.



# News from the Regions

## GRAMPIAN REGION

The department has seen fewer staff changes than usual this year. We welcomed Drs Vijayakumar and Ramayya as registrars at the beginning of the year and Dr B. Ratcliffe just recently. Dr D. Noble one of our own S. H. O.'s also joined the ranks of registrars leaving only one S.H.O. vacancy this autumn which was filled by Dr G. Johnston.

Resignations included Dr I. Levack who left to take up a Senior Registrar appointment in Edinburgh, Dr S. Pisani who moved to a registrar post in Durham, and Dr W. G. Morrison who temporarily left anaesthetics to do a job in obstetrics and gynaecology in Glasgow and subsequently obtained another anaesthetic post there. Dr F. MacLennan has temporarily relinquished her post as Senior Registrar to pursue her research interests.

Our examination successes include Drs K. Lamb and A. Ratcliff who passes the primary and Drs A. Michie, A. Ewen, W. B. Mair and Doug. McLeod the final part of the F.F.A. We extend our congratulations to them all.

An important event over the last year has been the opening of the purpose built Intensive Therapy Unit after years of anticipation and a great deal of effort on the part of several members of the department. This is now fully operational and the demands on the services offered are steadily increasing.

Dr Parry visited several mission hospitals in India in the autumn. Apart from the cultural shock which any westerner must experience on visiting the sub-continent, the overwhelming impression was one of the inequality of services available, both in medicine and more generally, compared with the west, and of the total dedication of a small number of doctors and others to provide medical care to comparatively large numbers of people with their very limited resources.

## HIGHLAND REGION

Progress with our new hospital is continuing. Our revised, revised . . . opening date is now December 1984.

As has happened in many hospitals throughout Scotland we have suffered a continuing decline in the number of Operating Department Assistants available to help us in theatre.

We have bid farewell to three of our junior staff—our 'G.P.' Dr Linda MacIntyre, who following her success with the D.A. examination has taken up a general practice post in Ullapool. Dr Andrew Kelsey who has taken up a G.P. trainee post in the Lake District and

Dr Roger Freeman, who enjoyed first time success with the final Fellowship, has left us to take up his new post of Senior Registrar in the Victoria Infirmary, Glasgow.

We are pleased to welcome three new junior members of staff, Dr Sitarama Prasad (Registrar), Dr Anthea Wright (S.H.O.), and Dr Bobba Janardhan (Registrar), who will join us shortly.

Prestel enthusiasts will be interested to note that our department is now 'on line' and can be contacted at 463234151.

Finally, as part of our policy of continuing improvement and development, we are pleased to announce the purchase of three Highland cattle by one of our members!

## SOUTH EAST REGION

Dr Bruce Scott was elected President of the Scottish Society of Anaesthetists in April this year at Peebles, and we congratulate him on his appointment. The University and Lothian health Board have agreed on a substantive Chair of Anaesthesia and the appointment of a new professor is awaited with great anticipation. On the University side Dr. John McLure, who has been acting as temporary Senior Lecturer, has now been appointed to a consultant post between the Elsie Inglis Maternity Hospital and the Royal Infirmary. Dr Mike Logan and Dr Bill McCulloch have been appointed Lecturers.

Three other Consultant appointments have been made this year from the staff of the region. Dr Ron Meek was appointed to Dumfries, Dr Alistair Chambers to the Edinburgh Southern Hospital Group and Dr Sally Edwards to Bangour General Hospital. We wish them all well for the future.

Dr Henry Turner has retired from Bangour General Hospital and is looking forward to a golfing retirement. Dr Robin Park resigned his post in the Southern Hospital Group and has returned to a permanent post in Saudi Arabia. Dr Ian Hudson has returned from Riyadh and Dr Donald Grubb has gone out for a year to continue development of the Paediatric Cardiac Service, which is proceeding with great success.

Trips overseas have been made by Dr Tony Wildsmith who was visiting Lecturer in Anaesthesia at Harvard Medical School, Boston, for six months. Dr Ivor Davie spent three months in Sydney, Australia, on an exchange arrangement. Several overseas meetings have been addressed by Dr Bruce Scott (U.S.A., Greece and Holland), Drs Alan Brown and Nick Gordon (Switzerland) and Dr Jim Jenkinson (Holland). Dr Ivor Davie was also examining in Cairo and in Dublin for the Primary F.F.A.R.C.S. Nearer to home Drs Brian

Slawson, Jim Jenkinson, Alistair Masson and Tony Wildsmith continue as examiners for the Primary F.R.C.S, Edinburgh.

The B.B.C. television series Campus featured three of our staff, Drs J. McClure, G. Park and David Brown explaining the clinical part of the University Medical Curriculum, with plenty of emphasis on anaesthesia and intensive care.

The junior staff change frequently at Registrar level and we congratulate Dr Dermot McKeown on his appointment to Senior Registrar and also for winning the Scottish Society Registrar's prize this year. Dr S. Mowbray from Edinburgh and Dr Iain Levack from Aberdeen have also been appointed as Senior Registrars. Dr Geoff Bowler is spending a research year with Dr Bruce Scott.

Primary and Second Part courses have been well attended this year although results are not as good as previously. The Local Anaesthesia Course in October was again well attended and this year we had guest lecturers from Dundee, Glasgow, London and Sheffield.

Finally we welcome to the Department as University Secretary, Miss Elspeth Taylor who replaces Miss Dorothy Taylor who is still to be seen in the Royal Infirmary working as a librarian in the Gynaecological Wards.

## **WESTERN REGION**

### **Western Infirmary, Glasgow**

Professor A. A. Spence will take up the Chair of Anaesthesia at Edinburgh University in the late spring of 1984.

Dr W. Nimmo, currently Senior Lecturer in Anaesthesia at the Western Infirmary, Glasgow, will take up the Chair of Anaesthesia at Sheffield University in the Summer of 1984.

Drs J. Dougal and G. Todd have been promoted from Senior Registrars to Consultants within the department at the Western Infirmary.

Dr R. Marsh has been promoted from Senior Registrar at the Western Infirmary to Consultant at Northampton.

Drs Jackie Orr and Harry Owen have been appointed to Senior Registrarships in the Western Infirmary.

Dr H. Owen's appointment is a joint Senior Registrar/Lecturer post.

### **Victoria Infirmary, Glasgow**

Dr David Dutton has been promoted from Senior Registrar to Consultant within the Victoria Infirmary.

Dr Brian N. Cowan has been promoted from Senior Registrar at the Royal Infirmary, Glasgow, to Consultant at the Victoria Infirmary and will take up his post in the New Year.

Dr Roger Freeman came from Inverness to a Senior Registrar appointment at the Victoria Infirmary.

### **Royal Infirmary, Glasgow**

Dr M. C. Stockwell took up a Consultant appointment at the Royal Infirmary having moved from a Consultant appointment at the Southern General Hospital, Glasgow.

Dr G. A. Sutherland has been promoted from Senior Registrar at the Royal Infirmary to Consultant at the Royal Infirmary and will take up his appointment in the New Year.

Drs E. N. Robertson, S. MacVicar, A. Kutarski and W. A. L. Mitchell have joined the department as Senior Registrars during the last nine months.

Dr R. J. White was promoted from Senior Registrar at the Royal Infirmary to Consultant at the North Ayrshire District General Hospital, Kilmarnock, Ayrshire.

Dr M. C. Calhaem was promoted from Senior Registrar at the Royal Infirmary to Consultant Anaesthetist at Stafford Royal Infirmary.

### **Pain Relief Clinic, Glasgow Royal Infirmary**

A pain relief service had existed on an ad hoc basis in the Royal Infirmary but a formal Pain Relief Clinic has now been started under the auspices of Drs Donald M. Brown and John M. Reid.

### **Stobhill General Hospital, Glasgow**

Dr Sheila Madsen joined the Department of Anaesthesia at Stobhill Hospital, Glasgow, as a Senior Registrar.

### **Southern General Hospital, Glasgow**

Dr W. J. Kerr has joined the Department at the Southern General Hospital as a Consultant Anaesthetist having been promoted from a Senior Registrar position in the Royal Infirmary, Glasgow.

Our local members were saddened to hear of the death of Dr Andrew Tindal in May, 1983.

## **TAYSIDE**

1983 has seen several staff changes in Tayside with retirements, departures and new appointments. Mrs Margaret Winzar retired in June after eight years as departmental secretary in Dundee having been a friend to all and a significant influence in the smooth running of the department. In her place we welcome Mrs Dorothy Morrison who is already well established in her new post. November saw the retirement of Dr Elizabeth Green. For many years an active and energetic member of staff, she held a variety of posts prior to her appointment as Associate Specialist. She will be greatly missed and our best wishes go with her and David in their new

life in Muchals. Dr Farquhar Edwards also retired from his sessions at Stracathro having combined an interest in anaesthesia with a busy general practice in Brechin.

After a period of stability this year has seen the departures of two of our Senior Registrars. Dr Alex Redpath left in the early part of the year to a consultant post in Hexham and Dr Bob Mann has recently moved to his consultant post in Great Yarmouth. Our best wishes to both. Replacing them as S.R.'s we welcome Dr John Martin and Dr Neil Morton both from Glasgow.

Departing registrars include Dr Will Elsdon to Newcastle and Dr Margaret Wright to the Hammer-smith both as senior registrars, and Dr Joe Kong to a research fellowship in Canada.

From Malaysia we welcome Dr Nik and Dr Amin, both in Dundee on clinical attachments financed by the Malaysian Government.

New recruits in Dundee as S.H.O.'s are Drs Michael Wee, Margaret Lonsdale, Fred Sieber and Robert Ferguson.

The last week of 1983 saw the appointment of Dr Tom Houston, from Manchester to the new consultant post created following the retiral of Dr Green. This appointment has a specific commitment to the pain relief service which has undergone a rapid expansion due largely to the enthusiasm of Drs Bisset and Macrae. The additional consultant sessions and the recent

funding of much needed secretarial help will go some way to relieving the workload.

The consultant establishment in Perth has been reinforced by the return from Manchester of Dr Magahy. Links between Dundee and Perth departments should be strengthened by this appointment which includes sessions in both Perth and Dundee. Hopes of interchange of junior staff between Dundee and Perth have not yet been realised but it is hoped that the obstacles can be overcome with benefit to the training programmes in both centres.

Dr Bill Bisset has been appointed Regional Educational Adviser for Tayside in succession to Dr Ian Lawson and Dr Peter Brown based in Perth has been appointed Faculty Tutor with responsibility for educational activities in the Perth Hospitals. Dr Peter Taylor and Dr Neil McKenzie, respectively responsible for the organisation of the primary and final teaching programmes continue to contribute to the satisfactory examination results and congratulations are due to the successful candidates of the year.

A stimulus to all members of the department has been the organisation by Dr Ian Grant of weekly departmental meetings to which guest speakers are invited.

Finally, our congratulations to Drs Gray, Hamilton and Macrae on their appointments as office bearers of the society.



Pictorial Review of '83



Photos by

Dr W. R. MacRae and Dr J. A. W. Wildsmith

**NORTH EAST OF SCOTLAND  
SOCIETY OF ANAESTHETISTS**

Meetings are held at 8 p.m. in Aberdeen Royal Infirmary, Ninewells Hospital, Dundee, and in Stracathro Hospital, Brechin, unless otherwise notified.

1983

Thursday, 29th September, Aberdeen

"Sleep, Breathing and Oxygen"

Professor D. C. Flenley, Edinburgh

Thursday, 24th November, Stracathro

"Muscle Relaxants—an update"

Professor T. E. J. Healey, Manchester

1984

Thursday, 23rd February, Stracathro

Registrars' Papers

Thursday, 29th March, Dundee

"Neonatal Anaesthesia—the size of the problem"

Dr D. G. D. Davidson, Manchester

Thursday, 17th May, Stracathro

Annual General Meeting and Presidential Address

**GLASGOW AND WEST OF SCOTLAND  
SOCIETY OF ANAESTHETISTS**

CURRICULUM 1983-1984

1983

Friday, October 28th:

Combined meeting with Edinburgh and East of Scotland Society of Anaesthetists—in Glasgow.

Professor D. Campbell, Dean of the Faculty of Anaesthetists, R.C.S.

Wednesday, November 30th:

Professor C. Prys-Roberts

1984

Tuesday, January 17th:

Members' Night, presented by members of the Division of Anaesthesia and University Department of Anaesthesia, Royal Infirmary, Glasgow. Venue—Royal Infirmary, Glasgow.

Wednesday, February 22nd:

Lt. Col. J. Anderson, R.A.M.C.

Venue—Walton Conference Centre, Southern General Hospital.

Thursday, March 22nd:

Presidential Address. Dr D. J. M. Ferguson

Tuesday, April 24th:

Annual General Meeting

Tuesday, May 22nd: (Provisional)

Golf Outing—Williamwood Golf Club

Unless otherwise stated, meetings will be held in the Royal College of Physicians and Surgeons of Glasgow, 242 St Vincent Street, Glasgow.

**EDINBURGH AND EAST OF SCOTLAND  
SOCIETY OF ANAESTHETISTS**

SYLLABUS 1983-84

Meetings will be held in the Royal College of Surgeons, Nicolson Street, Edinburgh, at 7.45 p.m. for 8 p.m. unless otherwise stated.

1983

Tuesday, September 27th:

Surgeon Commander R. T. Jolly, O.B.E., R.N.—

"Medical Services in The Falkland's Campaign"

Friday, October 28th:

Combined meeting with The Glasgow and West of Scotland Society of Anaesthetists, to be held in Glasgow.

Addressed by Professor Donald Campbell, Dean of the Faculty of Anaesthetists.

Tuesday, December 6th:

Professor R. E. Kendell, Royal Edinburgh Hospital.

"The Economics of Health Care"

1984

Tuesday, January 10th:

Dr. I. A. Davidson

"Presidential Address"

Wednesday, February 8th:

Combined meeting with the Edinburgh Obstetrical Society.

Addressed by Dr J. D. O. Loudon and Dr D. B. Scott. "Anaesthetic Factors in Maternity Mortality"

Friday, February 24th:

Annual Dinner

Tuesday, March 6th:

Members' Night

Tuesday, May 8th:

Annual General Meeting

Parking is available in Chambers Street and South College Street. Further details of meetings etc., from Dr N. H. Gordon, Department of Anaesthesia, Western General Hospital, Edinburgh. Telephone 031-332 2525.



## Registrar's Prize

The Society annually awards a prize of £100 for the best original paper or essay submitted by an anaesthetist in Scotland, holding the grade of Senior Registrar or under. A second prize of £50 or a third of £25 may be awarded for other papers of particular merit at the discretion of the assessors. It is not necessary that the Registrar be a member of the Society.

The conditions attaching to the award are as follows:—

1. The paper or essay must be original, i.e. it should not have been read previously at any meeting or published in any journal. The winning of the prize is in no way a bar to the subsequent publication of the paper in another journal.
2. It is desirable that papers submitted show evidence of personal work, but papers consisting of surveys of the literature are eligible for consideration. The Council of the Society wishes to stress that intending competitors should not be discouraged through fear of their efforts being judged elementary. It is fully realised that junior anaesthetists in some peripheral hospitals may not have opportunities to deal with special types of cases or to employ advanced anaesthetic techniques.
3. Papers for adjudication *must* reach the Secretary by the *end of February* at the latest.
4. The winner of the prize will be required to give a

digest of the paper at the Annual General Meeting of the Society towards the end of April. His expenses for the meeting will be met by the Society.

The Secretary places all entries in the hands of the Award Committee which consists of the President, Vice-President and Past President. The members of this Committee have expressed the desire to be able to adjudicate without knowing the name or hospital of the writer; it is requested therefore that the name, address, etc., of the entrant be submitted on a separate covering page. This will be retained by the Secretary, but otherwise the essay itself should give no indication as to its source: acknowledgement to colleagues etc., should not be included.

The prize for 1983 was won by Dr Dermot McKeown of the Royal Infirmary, Edinburgh, for his paper entitled "Bupivacaine and Prilocaine in Intravenous Regional Anaesthesia."

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