J R Coll Physicians Edinb 2006; epub 4 July 2006

The case for an obstetric physician

DR Hadden

Honorary Consultant Physician, Royal Victoria Hospital and Royal Maternity Hospital; Honorary Professor of Endocrinology, Queen's University of Belfast; Belfast, Northern Ireland

ABSTRACT Obstetric medicine is a branch of general internal medicine which requires a defined training programme and a formal curriculum. There is still uncertainty among physicians about this specialty, and there is no recognised entry pathway through the UK Colleges of Physicians. Obstetricians have been more aware of the need for specific medical skills both before gestation, and during pregnancy, labour and the puerperium, and have introduced a training module in Maternal Medicine as an extension of obstetric training. There is now a demand from trainee physicians for an appropriate programme which bridges the artificial divide between internal medicine and pregnancy-related medicine. This demand has a long-established historical basis, but is now a contemporary problem which needs to be addressed.

KEYWORDS Obstetric medicine, obstetric physician

DECLARATION OF INTERESTS No conflict of interests declared.

Published online ***4 July 2006***

Correspondence to ***DR Hadden, Regional Endocrinology and Diabetes Centre, Royal Victoria Hospital, Belfast BT12 6BA***

tel. ***+44 (0)28 9063 3380***

e-mail
david.hadden@royalhospitals.n-i.nhs.uk

INTRODUCTION

There is uncertainty among consultant physicians in the UK as to whether obstetric medicine exists as a specialty, whether there is a need for obstetric physicians, and if there was, what they would actually do. When I asked a question to a candidate in the old MRCP (UK) oral examination which contained any hint of pregnancy, my co-examiner would probably kick me under the table to indicate concern as to whether it was an appropriate topic. Very few candidates understood what I was talking about, and at the subsequent examiner's discussion I usually had little support. So is pregnancy part of the MRCP syllabus? Should there be specialty training in obstetric medicine?

Those of us who have trained in endocrinology and diabetes will have experienced a joint obstetric-diabetic clinic, and this entrance into the field of obstetric medicine is probably the most common. But all specialist registrars in the medical specialties will, at some time or another, be called to the obstetric service to consult with the obstetricians (at all levels) about an acute obstetric medical problem – cardiac, neurological, gastrointestinal, renal, respiratory or more obscure. At that time, we are aware how poor our knowledge is of the broad base of pregnancy physiology, and of what actually happens during those nine months. So our advice is cautious, and as it is most unlikely that we have read the recent obstetric literature, or even a textbook of obstetric medicine, our evidence base is likely to be less than that of the newly appointed obstetric SHO who called us in the first place.

The historical aspects of obstetrical medicine date back to the days when the delivery of babies and the care of the pregnant woman was not necessarily considered the function of a physician. However, a number of distinguished medical doctors did take both a practical and an intellectual interest in the problems of pregnancy. Charles White FRS in Manchester (1773) was such an early physician, who went far in reducing the scourge of puerperal sepsis and deserves equal fame to Semmelweiss in Vienna, whom he preceded by 75 years.[1] He had been a fellow student with John Hunter in London, and after spending one

FIGURE 1 Charles White, reproduced by kind permission of the Wellcome Library.

winter in Edinburgh, he returned to his father's practice in Manchester.[2]

In his *Treatise on the management of pregnant and lying-in women and the means of curing but more especially of preventing the principal disorders of which they are liable*, he stated that:

> 'the prophylactic art or the prevention of diseases, particularly of fevers, is a study of the utmost consequence to everyone who practises surgery or midwifery. Without a perfect knowledge of this branch of physick the practitioner cannot hope, at least he ought not to expect success'.

More recently, in Edinburgh, in 1878, Dr A MacDonald, Lecturer in Midwifery, noted that 'the first duty of an obstetrician is to make sure that he is a physician' and his name was used for the first meeting of UK doctors interested in obstetric medicine, which has developed into the small and select MacDonald Club.[3] He is rightly held to have been the leader in maintaining links between obstetrics and general medicine. He practised in Edinburgh and became a lecturer in *Materia Medica* and in Midwifery, and was a Fellow of both the College of Physicians and the College of Surgeons in Edinburgh. His textbook entitled *The Bearings of chronic disease of the heart upon pregnancy, parturition and childbirth* was said to be the first on medical matters on pregnancy.

> 'Scarcely a subject that borders on the mutual region occupied by the Obstetric and the pure Physician seems to have received less study from either one or the other. The reason, no doubt, is partly due to the cramping effects of a too rigid specialisation which tends to contract the attention of the Obstetric Practitioner on matters purely obstetrical and gynaecological whilst it affords the pure physician only comparatively few opportunities to watch the influence of such disorders in particular cases, in as much as the patients are at such a time pretty exclusively under the care of the obstetrician'.[4]

In the past few decades, with the considerable rise in interest in this branch of medicine, a number of textbooks have appeared. Dr C Nelson-Piercy (then a medical registrar in London), in her handbook on obstetric medicine is writing 'for practising obstetricians who may not have access to an obstetric physician, and for physicians who may be uneasy, as I once was, about being called to see a pregnant woman with an acute medical problem'.[5]

Cyril Barnes, physician to Queen Charlotte's Hospital in London, wrote the first modern textbook entitled *Medical disorders in obstetric practice*, which went into five editions and several foreign languages.[6] His aim was:

> 'to help obstetric officers and registrars whose patients are suffering from medical disorders, but also general physicians and medical registrars who, because they see little obstetric work, are sometimes uncertain of the effects of pregnancy and labour in the course of medical diseases'.

He remained a practising physician, and while his textbook considered all the medical aspects of pregnancy and set the scene for several successors, he took the view that pre-eclampsia was a purely obstetric disorder and was best left to the obstetricians to manage. Dr M de Swiet, who succeeded him in Queen Charlotte's Maternity Hospital in the first edition of his own book on *Medical Disorders in Obstetric Practice* in 1984, summarised his view that[7]:

> 'some would argue that obstetric medicine is not a sub-specialty at all; that the established specialties, such as cardiology and haematology, embrace a sufficient body of knowledge to deal adequately with all medical complications of pregnancy. I disagree. The physiology of the pregnant woman is so altered, and the constraint of the welfare of the fetus so important, that subspecialists who can oversee the two widely different fields of obstetrics and medicine are needed'.

In the third edition he noted that:

> 'obstetric medicine is becoming increasingly important for obstetricians: more "normal" pregnancies are being looked after by midwives leaving only complicated pregnancies for the obstetrician. About half of these pregnancies are abnormal because of fetal factors, or strictly obstetric factors, the remainder because of medical matters. The obstetrician of the future will have to take more responsibility for the medical problems of pregnancy'.[7]

The most recent evidence for these views comes from the Confidential Enquiry into Maternal and Child Health.[8] In this survey of recent UK experience, the major problems of thrombosis, haemorrhage and hypertension are highlighted in present day obstetric practice. The additional aspects of cardiac, psychiatric, and metabolic disorders remain important. Social disadvantage and ethnic minority status are important risk factors, as is obesity, for maternal death, but overall at least 80% of maternal deaths are 'medical'. During the three-year period of the enquiry, 1,100 children in the UK lost their mothers due to pregnancy. These statistics are compounded in the worldwide scene where there are 600,000 maternal deaths per year and one in eight young women in parts of Africa will die in pregnancy.

J R Coll Physicians Edinb 2006; epub 6 July 2006

SOME HISTORICAL ASPECTS

The role of the physician in pregnancy has always been controversial, particularly within the Colleges of Physicians in the British Isles. The debate between the College of Physicians and the College of Surgeons in Edinburgh, in 1769, as to whether midwifery did not belong exclusively to surgeons, led to the argument that a Licentiate of the College of Physicians would be entitled to instruct in the art of midwifery.[9] Similar problems were occurring in London and in Dublin. In 1692, the King and Queen's College of Physicians in Ireland was entitled to grant licences in medicine and midwifery, but in 1753, the University (Trinity College, Dublin) fell out with the College of Physicians who refused to examine any doctor who practised midwifery.[10] More recently, the wheel has turned full circle, and in 1982, the Institute (or Faculty) of Obstetricians and Gynaecologists was founded by the Royal College of Physicians in Ireland, to serve as the main institution for the specialty in the Republic of Ireland.

In London, similar problems occurred. In 1771, 'apothecaries, obstetricians and tradesmen' were banned from the fellowship, although because of special pleading by Dr J Clarke, a number of special licences for obstetrics were granted by the College in 1783. Dr Clarke strongly opposed the attitude of the College that prevented its Fellows from practising midwifery and the neglect of the diseases of children.[11]

Following the Midwives Act in 1902, and the establishment of the first antenatal clinics in Edinburgh in 1915, the British College of Obstetricians and Gynaecologists was established in 1929, and the specialty has continued on its separate path. In Ireland, the qualifying university degree in medicine has been, and still is, MB BCh BAO. Only Irish medical schools award the degree of Bachelor of the Art of Obstetrics, and this means that we Irish graduates can still put the words 'Physician, Surgeon and Accoucheur' on our brass plates! This custom dates back to the requirement of the Irish Poor Law Acts in the 1870s which required that applicants for medical posts should demonstrate their training in medicine, surgery and obstetrics. In England and Scotland, only evidence of training in medicine and surgery was required, and the practice of midwifery was already well established as a nursing responsibility.

The degrees held by the senior doctors in the Belfast Lying-in Hospital from 1793 make an interesting historical comparison. Before the establishment of the Belfast Medical School in 1845, their training had been in Edinburgh or Glasgow where it was possible to obtain a Licence in Midwifery in addition to the MD by examination. By 1893, the then Dr J Byers could obtain a Licence in Midwifery in Dublin, but his successor in 1920, Mr CG Lowry, had trained surgically, taking the FRCS before becoming a founder member of the new College of Obstetricians and Gynaecologists. The most recent consultant obstetricians have reverted to the title of 'Doctor', but there is still a very vital role for surgical expertise in labour ward care.

RECENT DEVELOPMENTS

> 'There is a need to improve professional advisory and counselling skills for women with pre-existing (medical) diseases both before and during pregnancy – and for expert supervision and combined care with a specialist in the particular condition.'

This statement by the previous *Confidential Enquiry into Maternal Deaths in the UK*[12] was followed by a joint report of the Royal College of Obstetricians and Gynaecologists, and of the Royal College of Midwives.

> 'During labour women with medical problems such as diabetes, heart disease, severe anaemia or sickle cell disease, should have access to a general physician with particular interest in pregnancy and their medical condition.'[13]

What exactly is 'a general physician with a particular interest in pregnancy?'[14] Probably not the newly arrived specialist registrar in cardiology or neurology, or even endocrinology/diabetes who answers the call for help. The midwife and the obstetrician have more in mind an experienced acute emergency physician, accustomed to the medical take, but who has also spent some time in the maternity hospital and knows and understands the things that happen there. In a smaller hospital setting, they are more likely to get the sort of person they want, but still inexperienced in acute obstetrics; in a larger teaching hospital, they will have to cope with the registrar on call for the particular specialty who is deemed appropriate, whether or not that person knows anything about childbirth.

There were nearly 2 million pregnancies in the UK in the three years 2000–02, and the confidential enquiry was notified of 391 women who died during their pregnancy or up to one year after giving birth. Of these, 106 died as a direct result of the pregnancy, due to thrombosis, hypertension or haemorrhage, as well as amniotic fluid embolism, ectopic pregnancy, anaesthetic complications, and infection after birth. A further 155 died from causes exacerbated by the pregnancy, such as suicide from puerperal psychosis and cardiac disease, and the

remainder from other incidental causes. Overall, pregnancy is now much safer for most women in the UK, but the risks are raised for the vulnerable and socially excluded.[8]

The medical problems of thrombosis and hypertension in pregnancy require special management. The proper

TABLE 1 The International Society of Obstetric Medicine.

Aims:

- To provide an international forum for physicians involved in the care of medical problems during pregnancy, and to present clinical and basic science research for discussion and critical evaluation between internists, obstetricians, anaesthetists and other related professionals.
- To promote the development of guidelines for training internists in medical complications of pregnancy, and encourage obstetric medicine curriculum development at undergraduate, graduate and postgraduate levels.
- Membership is open to medical doctors trained in subspecialty or general internal medicine, anaesthesia, obstetrics/gynaecology and/or maternal/fetal medicine, and to investigators or other practitioners actively involved in obstetric medicine.
- Website: http://www.isomnet.org

classification and aetiology of hypertension arising in pregnancy remains uncertain today, and explains the presence of a large International Society for the Study of Hypertension in Pregnancy, attended by both obstetricians and obstetric physicians. At least two other major textbooks are current in North America, where the role of the internist with an interest in obstetrics is also evolving[15, 16] and fellowships for suitable trainees are becoming available. There is now an International Society of Obstetric Medicine (see Table 1), and it is important that there should also be an appropriate UK discussion forum with similar aims.

TRAINING FOR OBSTETRIC MEDICINE

There are a number of entry points to this specialty and it is possible to start from the background of an MRCP, and MRCOG, or even a MRCPCH. These different starting points relate to experience in acute emergency medicine, maternal–fetal medicine, or antenatal paediatrics. It is also possible to come through the route of epidemiology and public health, or anaesthetics, or pathology. There is no single pathway which is universally agreed. Dr Nelson-Piercy, in a recent review, pointed out that while medical problems in pregnancy are common, and potentially fatal, these problems may be alien to the usual experience of a general physician. Both obstetricians and physicians recognise the need for more maternal medicine specialists, and that there should be adequate training and experience from whichever discipline the clinician emerges. However, there has been a greater demand from the obstetrical field, and the Royal College of Obstetricians and Gynaecologists has introduced a special skills training module in Maternal Medicine.[17] This is:

> 'to provide a high level of skill in the management of disorders affecting the mother before pregnancy, during pregnancy, labour and the puerperium; to improve knowledge, practice and teaching in the discipline; and to promote management skills and liaison with other professional group'.

The entry criteria for this course is MRCOG (Part 2) or equivalent, a completed core log book, and a satisfactory year 3 RITA. These criteria are only appropriate for obstetrical training. The training module has compulsory attendance in two sessions of adult intensive care, four sessions of neonatal intensive care, and twelve sessions in a combined obstetric/diabetes clinic. Five sessions in each of five optional disciplines are offered (haematology, endocrinology, renal medicine, rheumatology, cardiology, pharmacology). There is also a theoretical and practical course. This training programme has already proved popular but has not been open to trainee physicians.

Obstetricians have in general been more aware of the interface of internal medicine with their specialty than have been physicians planning training programmes. The recognised obstetric sub-specialty of maternal–fetal medicine has focused more on the fetus, with emphasis on 'ante-natal paediatrics' and has proved important in practice; neonatologists, geneticists and interventional imaging specialists are crucial in this field. There are some who would argue that the art of obstetrics should split entirely from the surgical practice of gynaecology, and the obstetrician of the future might subsume more of the role of the obstetric physician, with the skilled midwife undertaking all normal deliveries. This argument remains controversial, and for the foreseeable future, there will be a need for a person with a knowledge of the disciplines of internal medicine who has an interest in, and clinical responsibility for, the pregnant woman.

A physician's viewpoint is that obstetric medicine is a branch of general internal medicine which deserves defined training and a formal curriculum.[18] The clinical settings for training and practice would be in the outpatient department of a maternity hospital, and in the inpatient wards of both the general, and the women and children's hospital. To define an interest in the topic should need at least one year of advanced training. A suitable curriculum has been introduced by the Royal Australasian College of Physicians which includes training and instruction in the physiology of pregnancy, clinical aspects of normal pregnancy, and the minor associated ailments.[19] Both pre-existing medical disorders and disorders arising in pregnancy are discussed. There are further sessions on puerperal medicine, contraception and the pharmacology of pregnancy. A training programme of this type in the UK would ensure that physicians who undertake the care of pregnant women are adequately trained and have had some experience of the practice of medicine in pregnancy. As well as experience in all the medical specialties, particularly diabetes/endocrinology, and cardiovascular disorders (especially congenital and valvular heart disease), the most

important aspect is experience in the acute medical admissions unit. This is the experience which obstetricians and paediatricians are lacking. Other desirable experience for the trainee entering through the medical specialties would of course include both obstetrics and neonatal paediatrics, and it is particularly difficult for a trainee physician in the UK to obtain posts in these fields at a junior level, because of pressure from those who wish to enter the specialty directly. To this end, it will be necessary to reserve some positions in an obstetric hospital for medical trainees.

Obstetricians are not fully agreed on the need for specially trained and appointed obstetric physicians. The uncertainty relates to the size of the hospital in which they work – in a large institution, sufficient expert opinion in the acute medical emergencies of practical gestation can be found, and special expertise in the problems of thromboembolism, anaemia, hyperglycaemia and heart failure related to pregnancy is at hand. In a smaller hospital there are problems. In the new 'women and children' hospitals which are likely to emerge, with concentration of high risk pregnancy alongside neonatal special care, a broadly trained general physician with access to all aspects of acute internal medicine will become increasingly important, both to supervise and instruct the junior medical staff, to liaise closely with the specialist midwives in each medical subspecialty, and to provide a point of reference in the delivery ward when urgent advice is needed. If such a person has an interest in the academic assessment of medical disorders in pregnancy, they will have a fertile field to tend.

The Colleges of Physicians in the UK have not yet agreed on a sub-specialty training programme for obstetric medicine. Internists throughout the world are becoming involved in these discussions, and although the term 'physician' may be used differently in different countries, a group of young and enthusiastic doctors throughout the world is asking for training which bridges the artificial divide between internal medicine and pregnancy-related medicine. The interest is there and it is clear that such a programme is needed. The curriculum could do no better than follow the titles of a recent programme in advances in obstetric medicine held at the Royal College of Obstetricians and Gynaecologists which included lectures on heart disease in pregnancy, thromboembolism, obstetric cholestasis and anti-convulsant treatment. The antiphospholipid syndrome,[20] and the use of antioxidants in the prevention of pre-eclampsia are topical research developments.[21] The role of renal impairment and transplantation, and the problems associated with HIV infection are important in pregnancy. The management of diabetes and the debate about gestational diabetes are the main endocrinological points at issue.

The truth is that obstetric physicians self select and organise their own training however they can. At a recent trainees' workshop held at the newly formed International Society for Obstetric Medicine in Vienna in November 2004, there was a large international audience of interested doctors from a variety of backgrounds and at all levels of training and experience.[22] The demand is clear to see.[23] An appropriate training programme for an obstetric physician, starting off with the MRCP UK, is urgently needed.

ACKNOWLEDGEMENTS

The twenty-first Annual Perinatal Lecture, Royal Maternity Hospital, Belfast; 21 October 2004.

I am grateful to my colleagues in Belfast, and to a number of erstwhile obstetric physicians in Scotland for discussions over the years at various meetings on obstetric medicine topics – the late Professor John Stowers, and Dr Donald Pearson (Aberdeen), Dr Judith Steele and Dr Joyce Baird (Edinburgh). Professor Ian Greer, Royal Maternity Hospital, Glasgow, who is doubly qualified in medicine and obstetrics, has encouraged me in making this case to the physicians.

REFERENCES

1 White C. *A treatise on the management of pregnant and lying-in women, and the means of curing, but more especially of preventing the principal disorders to which they are liable.* London: E & C Dilly; 1773.
2 Behr G. Charles White of Manchester: the 250th anniversary of his birth. *BMJ* 1978; **277:**1699–1700.
3 MacDonald A. On the essential pathology of puerperal eclampsia. *Edinburgh Medical Journal* 1878; **23:**961–90.
4 MacDonald A. *The bearings of chronic disease of the heart upon pregnancy, parturition and childbed: with papers on puerperal pleuropneumonia and eclampsia.* London: Churchill; 1878.
5 Nelson-Piercy C. *Handbook of obstetric medicine.* Oxford: Isis; 1997.
6 Barnes C. *Medical disorders in obstetric practice.* Oxford: Blackwell; 1962.
7 De Swiet M (editor). *Medical disorders in obstetric practice* 3rd ed. Oxford: Blackwell; 1995.
8 Confidential Enquiry into Maternal and Child Health (CEMACH). *Why Mothers Die;* 2000–2002 (www.cemach.org.uk).
9 Craig WS. *History of the Royal College of Physicians of Edinburgh.* Oxford: Blackwell; 1976; 229.
10 Widdess JDH. *A history of the Royal Collge of Physicians of Ireland 1654–1963.* Edinburgh: Livingstone; 1963; 65.
11 Hunter KR. Dr John Clarke: Licenciate in Midwifery of the Royal College of Physicians of London. *Clin Med* 2002; **2:**153–6.
12 Department of Health, Welsh Office, Scottish Home and Health Department and Department of Health and Social Services, Northern Ireland. *Confidential enquiries into maternal deaths in the United Kingdom,1989–90.* London: HMSO; 1994. *Confidential enquiries into maternal deaths in the United Kingdom, 1997–9.* London: HMSO; 2001.
13 Royal College of Obstetricians and Gynaecologists, and the Royal College of Midwives joint working party report. *Minimum standards for the organisation of labour wards.* London: RCOG Press; 1999.
14 Nelson-Piercy C, Peek MJ, de Swiet M. Obstetric physicians: are they needed? *J Roy Coll Physicians Lond.* 1996; **30:**150–4.

15 Burrow GN, Duffy TP, Copel JA. *Medical complications during pregnancy* 6th ed. Philadelphia: Elsevier Saunders; 2004.
16 Barron W, Lindheimer MD (editors). *Medical disorders during pregnancy* 3rd ed. St Louis: Mosby; 2000.
17 Royal College of Obstetricians and Gynaecologists Special Skills Training Module. *Maternal Medicine*; 2002.
18 Nelson-Piercy C. Obstetric medicine training; picking up where the licenciate in midwifery left off. *Clin Med* 2002; **2:**119–21.
19 Walters BNJ, North R, Brown M, Hague WM, Lowe S. Obstetric Medicine Curriculum; presentation to the Specialist Advisory Committee in general medicine of the Royal Australian College of Physicians; 1997.
20 Branch DW, Siver RM, Pierangeli S, van Leewen I, Harris EN. Antiphospholipid antibodies other than lupus anticoagulant and anticardiolipin antibodies in women with recurrent pregnancy loss, fertile controls and antiphospholipid syndrome. *Obstetrics and Gynecology* 1997; **89:**549–55.
21 Savvidou MD, Hingorani AD, Tsikas D, Frolich JC, Vallance P, Nicolaides KH. Endothelial dysfunction and raised concentrations of asymmetric dimethylarginine in pregnant women who subsequently develop pre-eclampsia. *Lancet* 2003; **361:**1511–17.
22 International Society for Obstetric Medicine www.isomnet.org
23 Walters BNJ. Obstetric medicine, its premise and promise. *Austr NZ J Obst Gyn* 2004; **44:**295–7.