Panel Discussion

"Risks of the most important methods of obstetric analgesia"

Chairman's Opening Remarks.
J. SELWYN CRAWFORD, F.F.A., R.C.S., F.R.C.O.G.
Consultant Anaesthetist,
Birmingham Maternity Hospital,
Birmingham 15,
United Kingdom.

We are concerned in this discussion with the risks to which the mother and her infant are exposed as a result of the administration of pain relief during labour and delivery. Because of the short time available I have suggested to our speakers that we avoid the subject of delivery by Caesarean section, as this operation invokes the potential of a considerable number of additional specific risks which we could not in justice deal with in the time allotted.

I would like by way of introduction to make some general comments about the subject and, more specifically, about the methods of comparative assessment of the risks involved. With regard to the potential dangers to the mother, I believe that my colleagues on the Panel would agree with my opinion that the greatest risk is associated with ignorance or inexperience on the part of those who are attending the patient in labour - whether they be nurses, obstetricians, anaesthetists or general physicians. In the main, under conditions of sensible management, the risks are small in number and the hazards to which the mother is exposed are not of great consequence. The major danger is that the clinician will fail to appreciate that any detrimental effects of the analgesia - and especially those involving the cardio vascular system - will be greatly magnified if the mother is exposed to aorto-caval compression or if she is hypovolaemic. It is unfortunately still the case that many women in labour are permitted to lie supine, and to be placed in the supine lithotomy position during formal vaginal examinations, foetal scalp capillary blood sampling or at delivery. This unacceptable practice will undoubtedly in some cases exaggerate the potential undesirable responses of the mother to the analgesia, although of course the threat to foetal well-being is of much greater seriousness as I will mention later. Similarly maternal hypovolaemia is too frequently unrecognised in clinical practice, and especially so in cases of pre-eclampsia, and analgesia administered in a routine manner to such a patient can provoke very undesirable responses.

We will be hearing from our three speakers about the specific effects upon the perinate of the various drugs given to relieve maternal pain and distress during labour and delivery. I want now to stress some points which, in my opinion, neonatologiests and others have still not fully appreciated in respect to the assessment of these drugs effects.

It continues to amaze me that in the literature concerned with the evaluation of drug effects upon the neonate there is - with the honourable exception of articles written by obstetric anaesthetists - very little evidence that an effort has been made by the investigators to adopt the truly scientific approach. It is surely obvious that when we attempt to assess the extent and duration of the affect upon the foetus or neonate of a transplacentally administered drug, or of

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a technique of analgesia, this drug or technique must as far as it is humanly possible be the only variant which distinguishes the study group of patients from the control, and that all other factors which could conceivably impose a confusing effect of unknown magnitude must be avoided, and if they present themselves must lead the investigator to discard the results obtained from the particular patient.

There are several general factors which enter into this category, and I make no apology for referring to them here because they are apparently still ignored by many current investigators. Firstly, there is the socio-economic status of the patients under review. As perinatologists you know quite well that poor socio-economic circumstance is associated with a relatively high neonatal mortality and morbidity, as is the condition of the unmarried mother. Yet the correlation is by no means perfect - the infant of a mother of low socio-economic class is not necessarily depressed at delivery. Thus, when studies of small numbers of cases are conducted, it is most advisable to avoid the inclusion of such patients because of the danger of introducing a variable of unknown degree.

The second very important potential source of confusion is cord entanglement. This condition - and specifically cord around the neck - is present in one out of every three pregnancies at or near to term. Its effect upon the acid-base status of the neonate - and hence upon the general clinical condition of the infant - may be dramatic or may be apparently inconsequential. The point to be borne in mind is that it is variable in degree, and it is thus imperative that all cases of cord entanglement must be omitted from consideration during a study of possible drug effects upon the perinate.

I have referred already to the condition of maternal aorto-caval compression. The degree to which aorto-caval compression imposes intrauterine asphyxia is extremely variable. Thus we must be assured that every effort was made during an investigation of the kind to which I am referring to ensure that the mother was not exposed to aorto-caval compression. This is particularly relevant in the context of studies referable to breech presentation, multiple pregnancy and the delivery of immature infants. In these circumstances failure to avoid aorto-caval compression whilst the mother is in the lithotomy position during the process of delivery will impose a degree of foetal asphyxia of unknown magnitude which will totally confuse any attempt to assess the influence of drugs or techniques of analgesia upon foetal well-being.

It should of course be well appreciated that a study of drug effects cannot produce acceptable conclusions if the groups contain patients with assorted pathologies such as hypertension, pre-eclampsia and diabetes, but it is unfortunately true that such errors are still committed and the unreliable results gain credence by being uncritically referred to in the subsequent literature.

The assessment of the effects of maternally-administered drugs upon the perinate is a laborious business demanding a great deal of self discipline on the part of the investigators. I would estimate that 70-80 per cent of the accumulated literature on the subject should be discarded as being unreliable because of failure to devise and precisely to follow a strict protocol. Our panel of speakers will certainly not have committed such errors, and we look forward to hearing their expert opinions.