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Comments on some current trends in perinatal medicine and obstetric anaesthesia

by
D. PECORARI

The following are personal opinions based on observations of everyday occurrences or on preliminary work still in progress. They are reported only with the purpose of stimulating further constructive discussions.

A. THE MONITOR SYNDROME

The growing tendency to indiscriminate use of monitoring devices for normal parturients has a number of disadvantages, the most relevant of which are:

A.1. Concerning the patient

A.1.1. Unless the parturient is properly instructed (and sometimes even following a lenghthy discussion), to be connected with a monitoring machine represents for

* Department of Obstetrics and Gynaecology; University of Genova School of Medicine.

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her a distressing experience. Often the monitor cannot be effectively screened away from the patient, so that she is exposed to the sounds coming from the machine or may try to follow with her eyes the tracings on the dispay screen or on the paper. This may generate acute episodes of anxiety, not only when the fetus is in real danger, but also in innocent situations like the occurrence of an early deceleration or the interruption of the transmission of the fetal heartbeat for some technical defect (there is a very good book on that topic by an italian lady journalist: Alice Oxman's « Lager maternità », published by Bompiani, Milan; a psychologist who has interviewed some of my private patients expressed the same opinion).

A.1.2. External transducers often give rise to disconfort; this is true particularly for the external tocographs; furthermore all external transducers increase the awareness of sensations coming from the areas where they produce a continuous feeling of compression; finally they limit the movements of the patient and may prevent her to assume a comfortable position or to relax.

A.1.3. Internal devices (scalp electrodes, catheters for endoamniotic pressure registration, etc.) are usually less unconfortable, but carry some risk of infection even in the more sophisticated labour units; this risk is greatly increased in conditions of less than ideal hygiene (which are very common in Italy).

A.2. Concerning the physicians and the auxliary staff

A.2.1. Indiscriminate, generalized use of monitors for normal labours may give an erroneous sense of security and increase the tendency to delegate to a machine the close supervision of the patient.

A.2.2. The monitoring apparatus, if used extensively, is often a barrier which increases the psychological distance between doctor and patient and may prevent a satisfactory personal contact.

A.2.3. In teaching institutions the sum of the two above mentioned occurrences may result in reduced opportunities for those in training to obtain sound clinical experience and to use their brains.

A.3. Concerning the financial problem

A.3.1. Monitors are no substitute for doctors and midwives in the labour wards. On the contrary, proper use of monitors in order to obtain the maximum benefit may actually increase the number of people needed to staff a labour ward.

A.3.2. In hospitals with limited financial resources, costly electronic equipment should not be purchased at the expense of more essential allocations of money. Bath-tubs, showers, toilets, W.C.s., disponsable syringes and needles are far more important even if they are less glamorous; they should have absolute priority where commonsense prevails over exhibitionism.

A.3.3. Most monitoring machines are sold by manufacturers at exorbitant prices. Also the price of spare parts and the fees for maintenance are out of proportion of their real value. Even minor pieces like screws, lamps, plugs, etc. almost invariabily have to be purchased only from the original manufacturer at very high prices (not to mention the waiting time) because the standard equivalent on free sale in any ironmongery can seldom be fitted on the machine.

A.4. Conclusions

Electronic (but also biochemical) monitoring of labour should be used only when there is a favourable cost/benefit ratio. Proper clinical judgement should be used

to select patients to be submitted to it. Many patients having chemical analgesia during labour require monitoring at some stage; however it seems illogical to increase the medication only to alleviate the increased discomfort and anxiety created by the prolonged use of monitoring devices; except in cases where fetal conditions are known or presumed to be abnormal, it is probably better to limit monitoring time to a minimum.

B. OBSTETRIC ANALGESIA AND PATIENT-PHYSICIAN RELATIONSHIP

B.1. A labour and a delivery under chemical analgesia or anesthesia is no business for the midwife alone

This may create some feelings of frustration in countries where traditionally the midwives were doing the whole job with minimal or non existent supervision. It is hoped that in the future in the training of midwives more emphasis be given to respiratory physiology, to techniques of analgesia and anaesthesia, to methods of resuscitation of the adult and infant. The same is true for psycho-antalgic methods. With such a training, centered more on perinatal physiology then on perineal integrity, the midwife will become a qualified member of the team, together with the obstetrician, the anaesthesiologist and the paediatrician.

B.2. Instrumental delivery should not « a priori » be considered a blame for any method of obestetric analgesia

Elective assisted delivery with the forceps or the vacuum extractor has nothing in common and should be differentiated from complicated extractions often performed as an emergency for fetal distress.

B.3. Pudendal block should be taught to every physician doing obstetrics

It can be easily learned even without a teacher and presents no technical problems. Even in the worst situations there is no excuse for delivering a baby without at least the benefit of a pudendal block. Pudendal block is the ideal implement of any form of psycho-antalgic methods or of light inhalation analgesia. However, every physician using a local anaesthetic (even for a simple perineal infiltration) should be familiar with the methods of treating severe reactions to the drug and should have at hand the proper equipment in perfect working conditions.

B.4. Every effort should be made to discourage too strong personal ties between a patient and one particular physician

This is too often the origin of unnecessary interference with the normal course of labour, particularly if there are financial reasons for the physician to deliver personally a given baby. Emphasis should be put, on the contrary, on the necessity of continuous coverage of the labour ward by competent physicians working in shifts; the advantages in terms of safety and efficiency should be stressed to the patients and to the public in general.

Depersonalization of assistance during labour does not mean dehumanization of patient care. The creation of a suitable number of teams of doctors and midwives working in shifts is probably the simplest way to make the practice of good obstetrics possible also to people who are not missionaries, but who have the right and the duty to pursue other interest outside their profession. It has also

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the advantage of eliminating the risk of decisions taken or procedures performed by sleepy, tired or overstressed individuals.

C. FETAL CIRCULATION

Great emphasis is usually given to the supine hypotensive syndrome and to possible alterations of placental perfusion from the maternal side. Much less attention is dedicated to *fetal placental blood flow,* although even minor alterations of fetal perfusion of the placenta can be very dangerous for the baby.

When venous return from the placenta to the baby is impaired (e.g. in cases with cord around the neck) the irregular decelerations of fetal heart rate that follow are probably a consequence of the activation of the same reflexes that give rise in the adult to the supine hypotensive syndrome. It is likely that this is life-saving for the fetus, because an obstructed venous return coupled with an unchanged arterial pressure and flow in the umbilical arteries might quickly induce a pooling of fetal blood within the placental vascular compartment and eventually lead to fetal death caused by acute blood loss from the fetal vascular compartment.

It is possible that the supine hypotensive syndrome in the adult (Bainbridge reflex - bradycardia - hypotension - reduced cardiac output) be a reminiscence of a built-in safety mechanism for use in fetal life.

D. JONOPHORESIS

Jonophoresis is a technique used successfully in many fields of medicine for introducing various substances through the intact skin or the mucosae by means of low electric current. However, as far as could be ascertained, there is yet no reference in the literature concerning its use in obstetrics and gynaecology by means of a transvaginal approach. On the basis of preliminary experiments and theoretical considerations there should be no special risks inherent to the technique neither for the woman nor for the product of conception.

Paracervical block analgesia con be obtained using a carrier electrode pushed firmly against the lateral vaginal fornices; the small dose of local anaesthetic required and the possibility of using an esther-type molecule are important factors preventing passage to the fetus of dangerous amounts of drug. Transvaginal pudendal block can probably be obtained too by means of jonophoresis at the level of the ischial spines.

Various substances can be transported into the amniotic fluid by using a carrier electrode inserted through the cervical canal up to the inferior pole of the amniotic sac; these include possibly corticosteroids for accelerating the production of lung surfactant, anti-prostaglandin drugs for inhibiting premature labour, prostaglandins for stimulating uterine contractions, aminoacids, etc.

Jonophoresis of steroids into the wall of the cervix or the uterus can be used in gynaecology for obtaining a local action without systemic side effects (for instance for contraceptive purposes). Similarly, jonophoresis of chemotherapeutic agents may be useful in some forms of cancer, while paracervical block analgesia may help as symptomatic treatment of severe dysmenorrhea.

There are still many technical problems to be solved, particuarly concerning the shape and the characteristics of the carrier electrodes; work is in progress and a detailed paper is in preparation.