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TITLE: COAGULATION STUDIES IN THE PARTURIENT: HOW DO WE PRACTICE?

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Introduction: Which lab tests are appropriate for evaluation of potential coagulopathies in the obstetric population prior to placement of a regional anesthetic is controversial. This survey sought to delineate current practice among obstetric anesthesiologists at academic institutions, and to examine how patient pathology and operative urgency affected their choices.

Methods: A 21-question survey regarding evaluation of coagulation status in parturients was sent to all anesthesia training programs in the United States. The first part of the survey explored required laboratory tests prior to induction of a regional anesthetic in specific clinical situations for two degrees of urgency (elective vs emergent). The second part explored institutional characteristics and the utilization of regional anesthesia. Specific tests that guide clinical practice, and exceptions under which these guidelines may be violated were elicited.

Results: There were 78 respondents to the survey of 113 programs (69%). Four responses were eliminated: two did not practice obstetric anesthesia, and two precluded interpretation. Of the 74 programs, 5 had <100 deliveries per month, 28 had 100-250, 28 had 250-500, and 13 had >500. Regional anesthesia is utilized in the majority of cesarean sections, but only 53% of vaginal deliveries are conducted with a regional anesthetic. Tests felt to be necessary in the preeclamptic patient, mild and severe, are shown in Figures 1 and 2, respectively. As severity of disease increases, the number of studies requested to evaluate coagulation status also increases. Given comparable disease severity, most programs require fewer tests to evaluate coagulation in an urgent setting than an elective setting. In the mild preeclamptic, an H/H and platelet count were the only tests required by 58% of programs; in an urgent delivery setting, only 28% required the same tests. Utilization of regional anesthesia for both vaginal and cesarean deliveries increased with program size except for the largest programs (>500 deliveries per month), when utilization of regional anesthesia for c/s fell considerably.

Conclusions: The frequent utilization of regional anesthesia in obstetrics requires that parturients at risk be evaluated for coagulopathy, but these results indicate that there is no consensus as to what is appropriate. Further, testing felt to be "necessary" is dependent on the urgency of the delivery setting. Such disparities likely reflect poor characterization of coagulation disorders in the parturient, and a historically low rate of complications from regional anesthesia in this population. The drop in utilization of regional anesthesia in the largest programs was unexpected. This may be due to the greater number of high risk OB patients in these centers, who may have contraindications to placement of a regional anesthetic; alternatively, it may reflect the difficulty of providing anesthesia services to such a large OB population.

Percentage of Programs Ordering a Specific Test in the Mild Preeclamptic Patient

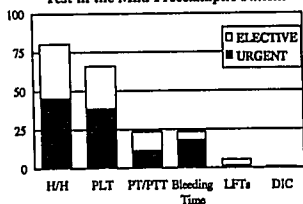


Fig 1

Percentage of Programs Ordering a Specific Test in the Severe Preeclamptic Patient

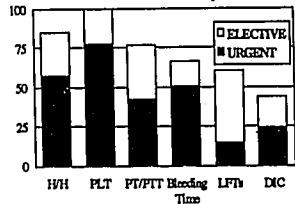


Fig 2

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TITLE:

ANESTHESIA PERSONNEL, NEONATAL RESUSCITATION, AND THE COURTS

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The American Society of Anesthesiologists' (ASA) Closed Claims study of obstetric anesthesia lawsuits revealed that the misconduct of neonatal resuscitation by anesthesia personnel was responsible for 2 out of the 5 cases of neonatal resuscitation implicated in 38 cases of newborn brain injury.¹ Because the ASA *Guidelines for Conduction Anesthesia in Obstetrics (1990)*² states that "personnel other than the anesthesiologist attending the mother should...assume responsibility for resuscitation of the newborn..." we perceived that a disparity existed between the recommendations of the ASA *Guidelines* on the one hand, and what occurs in clinical practice and the Courts, on the other. Furthermore, the involvement of anesthesia personnel in neonatal resuscitation was not addressed in the 1987 Obstetrical Anesthesia Manpower Survey.³

In order to determine to what extent the occasional obstetric anesthesiologist practicing at a community hospital is involved in neonatal resuscitation while attending the mother during cesarean section, we conducted a mail-response survey of 605 anesthesia departments in midwestern community hospitals. Only hospitals without anesthesia, pediatric, or obstetric/gynecologic residencies were surveyed. Each department chairperson was asked to answer the following question: If you are administering an emergency anesthetic (any type) for an emergency cesarean section during the night or on weekends, alone, who ROUTINELY provides initial neonatal bag-and-mask ventilation and/or intubation, if this is necessary? We also consulted the LEXIS (Mead Data Central, Inc.) legal database of federal and state appellate court decisions from 1975 - 1990, in order to investigate the extent of anesthesia personnel implication in neonatal resuscitation malpractice cases, and compared this data to that of the Closed Claims study on this subject.

Of the 605 questionnaires mailed, 320 (53%) were returned. Routine involvement of anesthesia personnel involvement in neonatal resuscitation was noted in 99 of 320 departments (31%). The anesthesia person (MD or CRNA) administering maternal anesthesia was primarily responsible for neonatal resuscitation in 43 (13.4%) responses. In 22 (6.8%) other institutions, a second anesthesia person (MD or CRNA) routinely assumed primary responsibility. In 34 institutions, multiple personnel which sometimes included anesthesia personnel were listed as responsible for neonatal resuscitation. When anesthesia personnel were not normally involved, the attending obstetrician, pediatrician or family practitioner were listed (n = 170, 53%); multiple personnel not including anesthesia (n = 17, 5.3%); Labor and Delivery nurse or nurse midwife (n = 11, 3.4%); and others (physician's assistants, paramedics, etc) (n = 26, 8.1%). The LEXIS database revealed 123 cases of neonatal death or brain damage. Of these 123 cases appearing before a federal or state appellate court, 3 involved charges that anesthesia personnel failed to resuscitate properly. One of these three cases was upheld on appeal.

The LEXIS database confirms the Closed Claims study finding of a small but significant number of cases relating anesthesia personnel to adverse outcome in neonatal resuscitation. As a large minority (31% of the respondents to our questionnaire) of anesthesia personnel are involved with neonatal resuscitation during the administration of maternal anesthesia, those who decide to continue this involvement, despite the ASA guidelines on this subject, should have department policies and procedures define the limits of their involvement.

REFERENCES:

1. Anesthesiology 74:242-249, 1991
2. ASA Directory of Members, 642, 1991
3. Anesthesiology 65:298-306, 1987