

**Committee on Fetus and Newborn  
Committee on Drugs  
Section on Anesthesiology  
Section on Surgery**

## **Neonatal Anesthesia**

In the past, some practicing physicians have advocated withholding anesthetic or analgesic agents from neonates undergoing surgical procedures. The rationale expressed for such practice is that some neonates undergoing surgery are often so unstable that the risk of an anesthetic agent is too great to justify the possible benefit of pain relief. An analogy may be drawn to the adult patient with major trauma who must undergo life-saving surgery in whom anesthesia is reduced or withheld because of the fear of worsening an already compromised physiologic homeostasis.<sup>1</sup> Also cited in support of this practice is the impression that nerve pathways are not sufficiently myelinated to transmit painful stimuli or that neonates do not have sufficiently integrated cortical function to recall painful experiences.

There is an increasing body of evidence that neonates, including those born preterm, demonstrate physiologic responses to surgical procedures that are similar to those demonstrated by adults and that these responses can be lessened with anesthetic agents.<sup>2-6</sup> Other studies have suggested that stability of variables such as blood pressure, heart rate, and oxygenation is important in reducing complications such as intraventricular hemorrhage or pulmonary hypertension.<sup>7,8</sup> There is also increasing evidence that neonatal cortical function is far greater than previously thought<sup>9,10</sup> and some suggestion that short-term behavior may be affected by prior painful stimuli.<sup>11,12</sup>

The Committee on Fetus and Newborn, The Committee on Drugs, the Section on Anesthesiology, and the Section on Surgery believe that local or systemic pharmacologic agents now available permit relatively safe administration of anesthesia or analgesia to neonates undergoing surgical procedures and that such administration is indicated according to the usual guidelines for the administration of anesthesia to high-risk, potentially unstable patients. In occasional situations, physiologic

instability will be so great that the anesthetic agents must be reduced or discontinued. However, the decision to withhold such medication should be based on the same medical criteria used for older patients. The decision should not be based solely on the infant's age or perceived degree of cortical maturity.

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