Meet the Experts- Round Table-2014 International Congress of the Israel Society of Anesthesiologists

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Objectives:
The participant will be able to:
1. Describe advantages and disadvantages of regional anesthetic techniques in infants
2. Detail some “pearls” and best practices for neuraxial anesthesia in infants
3. Discuss post-anesthetic apnea in ex-premature infants and what the risks and possible strategies for minimizing those risks are
4. Appreciate and understand the controversies regarding early exposure to anesthetics and neurodevelopmental outcomes

Introduction:
Anesthetizing the infant, while obviously dissimilar from the adult, is in many ways also almost as different than administering anesthesia to older children. In addition to the obvious factor of size, differences in physiology and developmental pharmacology play a critical role in choosing the anesthetic technique. Since the operations themselves are often unique to the neonate and infant, one must similarly be aware of the intraoperative surgical demands and the pre and post-operative comorbidities that affect these patients. Aside from neonatal operations due to congenital conditions or catastrophic emergencies, the most common operative condition in the preterm neonate is inguinal hernia, occurring in about 20% of these infants. The hernias in these infants are often large, and the hernia sac may be particularly thin and delicate. They are also prone to incarceration, thus postponing repair might be hazardous.

Case presentation:
A former 29 week premature infant, now 14 weeks old, has a large right inguinal hernia. The surgeon recommends repair. After birth, the infant received surfactant, but still required a 1 week ventilator course, followed by 8 weeks of supplemental oxygen via nasal cannula. He had a PDA closed with indomethacin, no intraventricular hemorrhages noted by trans-fontanelle ultrasound, and no other sequelae of prematurity. He is currently nipple feeding.

Questions:
1. What are the anesthetic options for this baby? Is a general anesthetic needed, or is a regional technique possible?
2. What are the advantages of neuraxial anesthesia in this situation? What if the surgeon needs to do a laparoscopic exploration of the contralateral side?
3. If subarachnoid block is chosen, what doses are appropriate? What duration of anesthesia can you expect?
4. Is sedation necessary? If so, what drugs might be safest? If not, why not?

You chose a subarachnoid block (spinal anesthetic) for the operation.
1. At what level should you make your lumbar puncture? Why?
2. What local anesthetic and dose should you consider for the block?
3. What hemodynamic effects can you anticipate might ensue if the block reaches the T3 level? How would you deal with them? How might these effects compare with the hemodynamic consequences of a general anesthetic with desflurane and low dose fentanyl at age appropriate doses?
4. What would you expect the respiratory effects of such a block to be, and how might you deal with those? How would this differ if the surgeon decides to do a laparoscopic examination of the contralateral side?
5. What part of the surgical procedure is the most likely to elicit the most stimulation?
6. What might you suggest to the surgeon to maximize anesthesia effectiveness if the procedure is taking longer than anticipated?

The operation is concluding.
1. What are your options for postoperative analgesia, and what are the benefits and risks for each?
2. Is a caudal block appropriate? If so, what local anesthetic and dose would you chose?
3. What considerations should you give to postoperative monitoring? Is this infant at risk for apnea, and is the risk different that with general anesthesia?

Suggested reading:

