Objective: Upon completion of this presentation, participants will be able to distinguish the pros and cons of three different techniques for providing anesthesia for the morbidly obese parturient requiring cesarean section.

Summary: Morbid obesity presents unique challenges in the pregnant patient, and with both obesity and cesarean section rates on the rise, the future will prove to be even more challenging. When providing neuraxial anesthesia for these patients, there are four basic options: single shot spinal, continuous spinal catheter, combined spinal epidural anesthesia, and epidural anesthesia. The triple debate focuses on the latter three, and this syllabus entry pertains to epidural anesthesia.

The best way to describe the advantages of epidural anesthesia for this case is to explain why the other two choices are less satisfactory. The continuous spinal catheter technique requires intentional puncture of the dura, which has an increased potential to lead to at least three different complications. First of all, the risk of headache goes up when the dura mater is punctured. Even though morbid obesity seems to have some protective effect, intentional dural puncture compared to an uneventful epidural still carries increased risk. Secondly, infection is a potential risk with any neuraxial technique, but a continuous spinal catheter provides a conduit for microorganisms to enter the subarachnoid space, whereas an epidural leaves the protective barrier of the dura mater intact. And finally, experience with animals demonstrates that spinal cord tissue easily allows penetration by an advancing catheter, leading to potential permanent neurologic deficit from direct spinal cord trauma. The risk is increased further by the commonest error in judgment of spinal level at the time of placement (when wrong, we are usually too high), which is even more likely in obese patients with greater tissue mass over the iliac crests posteriorly.

Epidural anesthesia also has distinct advantages over combined spinal epidural anesthesia. Studies have shown extreme variation in the spinal local anesthetic dose required for cesarean section anesthesia in the morbidly obese parturient, making an appropriate dose difficult to choose. With the additional time required to place and secure the catheter, a greater amount of time can elapse without appropriate monitoring, during which time a high spinal might go untreated. Conversely, if too low a dose is chosen, then additional OR time is required to establish epidural anesthesia. And even when an appropriate initial dose is chosen, if additional time is required for the procedure, then the catheter is untested and has the potential to fail unexpectedly, leaving the anesthesiologist with few options other than general anesthesia. These pitfalls can be avoided when an epidural is placed and tested in the holding area while other operating room cases proceeding.

Key Points:
1. Epidural catheter technique for morbidly obese parturients undergoing cesarean section provides a safe and effective method of anesthesia with a minimum of side effects.
2. Continuous spinal catheter technique can be safe and effective, but increases the risk of headache and spinal cord trauma, and theoretically increases the risk of spinal infection.
3. Combined spinal-epidural catheter technique can be safe and effective, but is fraught with the pitfall of uncertainty regarding an appropriate dose for initial spinal injection.

Key References: