

The Anesthesia Considerations in Robotic Mastectomies

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Abstract : Robotic surgery has enabled a new spectrum of minimally invasive breast reconstruction by improving visualization, surgeon posturing, and improved patient outcomes.¹ The DaVinci robot system can be utilized in nipple sparing mastectomies and reconstructions. The process involves the insufflation of the subglandular space and a dissection of the mammary gland with a combination of cautery and blunt dissection. This case outlines a 35-year-old woman who has a long-standing family history of breast cancer and a diagnosis of a deleterious BRCA2 genetic mutation. She has decided to proceed with bilateral nipple sparing mastectomies with implants. Her perioperative mammogram and MRI were negative for masses, however, her left internal mammary lymph node was enlarged. She has taken oral contraceptive pills for 3-5 years and denies DES exposure, radiation therapy, human replacement therapy, or prior breast surgery. She does not smoke and rarely consumes alcohol. During the procedure, the patient received a standardized anesthetic for out-patient surgery of propofol infusion, succinylcholine, sevoflurane, and fentanyl. Aprepitant was given as an antiemetic and preoperative Tylenol and gabapentin for pain management. Concerns for the patient during the procedure included CO₂ insufflation into the subcutaneous space. With CO₂ insufflation, there is a potential for rapid uptake leading to severe acidosis, embolism, and subcutaneous emphysema.² To mitigate this, it is important to hyperventilate the patient and reduce both the insufflation pressure and the CO₂ flow rate to the minimal acceptable by the surgeon. For intraoperative monitoring during this 6-9 hour long procedure, it has been suggested to utilize an Arterial-Line for end-tidal CO₂ monitoring. However, in this case, it was not necessary as the patient had excellent cardiovascular reserve, and end-tidal CO₂ was within normal limits for the duration of the procedure. A BIS monitor was also utilized to reduce anesthesia burden and to facilitate a prompt discharge from the PACU. Minimal Invasive Robotic Surgery will continue to evolve, and anesthesiologists need to be prepared for the new challenges ahead. Based on our limited number of patients, robotic mastectomy appears to be a safe alternative to open surgery with the promise of clearer tissue demarcation and better cosmetic results.

Keywords : anesthesia, mastectomies, robotic, hypercarbia

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