Liposuction

CoreNotes by Core Concepts Anesthesia Review, LLC

What You Must Know

1. Liposuction commonly involves the use of tumescent techniques that use large volumes of infiltrate solution to emulsify and remove fat.
2. The infiltrate (wetting) solution is composed of a balanced electrolyte solution with epinephrine 1:1,000,000 and lidocaine (0.025 – 0.1%) added.
3. Blood loss is estimated to be approximately 1% of the recovered aspirate.
4. Because the tumescent technique produces a single-compartment and slow clearance of lidocaine, total doses of 35 – 55 mg/kg of lidocaine have been used safely.
5. Peak lidocaine levels occur 12 – 14 hours after injection and decline thereafter.
6. The overall mortality rate is approximately 0.02% with pulmonary embolus being the most common cause of mortality.

Liposuction is the second most commonly performed cosmetic procedure in the US. The procedure involves the insertion of hollow suction rods through small incisions. The introduction of large volumes of infiltrate (usually 1 – 4 mL / mL of fat removed) results in the emulsification of fat, which is then removed by suction.

The infiltrate solution is composed of a balanced electrolyte solution with epinephrine 1:1,000,000 and lidocaine (0.025 – 0.1%) added. It is generally felt that up to 5000 mL of infiltrate solution can be safely administered in an office setting. Because of the slow absorption of local anesthetic from the single compartment produced during liposuction, and the vasoconstrictive effects of epinephrine, total doses of lidocaine can be as high as 55 mg/kg. Peak local anesthetic plasma concentration of lidocaine occurs 12 – 14 hours after administration and then declines to nearly absent levels over the following 6 to 12 hours.

General anesthesia and monitored anesthesia care with sedation are commonly used. Epidural and spinal anesthesia is discouraged in the office setting as it is associated with vasodilatation, hypotension and fluid overload.

Liposuction carries significant associated morbidity and mortality. The overall mortality rate has been reported at 19.1/100,000 procedures, with pulmonary embolus cited as the most common cause of death (23.1%). Other important causes of mortality include fat embolism, hemorrhage, anesthetic causes, viscus perforation, infection and ‘unknown’ causes.

Additional Reading:

Barash, PG, Cullen, BF, Stoelting, RK, Cahalan, MK, Stock, MC, and Ortega, R. Clinical Anesthesia. Philadelphia: Lippincott Williams & Wilkins, 2013:868