Anesthesia for In-Office Oculoplastic Surgery: How We Do It

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The effective use of local anesthesia combined with minimal oral sedation can obviate the need for intravenous sedation or general anesthesia in many common oculoplastic procedures. We routinely perform upper and lower blepharoplasty, fat pad repositioning, ptosis correction, tumor removal and reconstruction, and entropion and ectropion repair without the use of intravenous or general anesthesia.

We have implemented a system of local anesthesia administration that is nearly painless for the patient. We add oral sedation only for prolonged procedures to enhance patient comfort or to alleviate significant anxiety. When oral sedation is employed, we strive for minimal sedation. Our goal is an awake but relaxed patient.

Selection of Local Anesthesia

Local anesthesia involves topical agents for superficial conjunctival anesthesia combined with injectable agents for skin and soft tissue use. Occasionally, a topical skin anesthetic such as Betacaine (Medical Center Pharmacy, Tampa, FL) or lidocaine will be used as an adjuvant to injectable local anesthesia. The instillation of proparacaine 0.5 % causes less discomfort than tetracaine 0.5 %; therefore, it is the preferred agent for conjunctival anesthesia (Bartfield et al. 1994; Havener 1983). The duration of action of proparacaine is limited to approximately 15 min; therefore, the surgeon must instill the agent as needed during the procedure (Havener 1983).

Lidocaine and bupivacaine serve all injectable anesthesia requirements. A low pH and rapid injection of the solution are associated with increased discomfort. The use of controlled slow infiltration and a neutral or nearly neutral solution is a simple technique that the surgeon can employ (Scarfone et al. 1998). Our preferred local anesthetic consists of a fresh mixture of the following: 50 mL lidocaine 2 %, 5 mL sodium bicarbonate 8.4 %, and 0.5 mL epinephrine 1:1,000. The use of commercially available lidocaine 2 % with epinephrine 1:100,000 is acceptable as long as the solution is neutralized. The addition of 8.4 % sodium bicarbonate in a nine-part lidocaine and one-part sodium bicarbonate mixture will effectively raise the pH of the solution into the neutral range. For prolonged local anesthetic effect, we favor bupivacaine 0.75 % with epinephrine added at 1:100,000.

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Selection of Oral Sedative Agent

The selection of an oral sedative agent is based primarily on surgeon familiarity with a given agent. We typically employ diazepam or occasionally lorazepam. The benzodiazepine sedative agent zolpidem is an acceptable alternative. Diazepam dosage ranges from 5 to 20 mg and lorazepam from 0.5 to 2 mg depending on age, weight, expressed anxiety, and previous experience with benzodiazepine medications. With zolpidem, we typically administer a 10-mg dose, although a 5-mg dose can be administered in selected patients (Terzano et al. 2003). Flumazenil, a benzodiazepine reversal agent, is available. We rarely find it necessary to use narcotics for oculoplastic surgery. Apprehension and pain contribute to one another, so adequate preoperative counseling to decrease anxiety will make patients tolerate the procedure much better. A calm and reassuring manner from the surgeon and staff, as well as a sense of orderliness to the process, will help alleviate patient stress.

Procedure

1. Final preoperative counseling occurs, and questions are answered. The patient undergoes informed consent, and appropriate permission forms are signed before any oral agent is given. The patient is then administered a sedative agent, if one is to be employed. The recommended application time for the topical skin anesthetics ranges from 30 to 60 min so they should be applied promptly (Friedman et al. 2001). Topical skin anesthetic can be applied by the nursing staff as soon as the patient arrives at the office.
2. Conjunctival anesthesia—one to two drops of proparacaine are instilled in the eye. For cutaneous topical anesthesia, Betacaine ointment may be applied to the sites of needle entry. Next, we perform preoperative surgical marking; once complete, the proparacaine will have achieved its effect. Next, a pledget is created by saturating a cotton-tipped swab with proparacaine. The pledget is placed in the inferior fornix for approximately 5 min. Before local anesthesia injection, the pledgets are removed. Using a dilute form of the fresh local anesthetic mixture and a 1.25-in. 27-gauge needle, the lower eyelid is anesthetized through a conjunctival approach. The dilute form of the anesthetic is prepared by combining 0.5 mL of the fresh anesthetic mix and 2.5 mL of sterile saline. We find that this very dilute form of local anesthetic is well tolerated and nearly painless. By injecting slowly through the area of pledget contact, most patients are completely unaware of this injection. If an upper eyelid procedure is also planned, the upper eyelids are anesthetized. The use of the 1.25-in. 27-gauge needle allows the entire upper eyelid to be anesthetized with two needle insertions. Approximately 1.5 cc of the initial anesthetic is instilled in each eyelid. The patient is then prepared, and this sequence allows time for the maximal vasoconstrictive effects of epinephrine to occur.
3. A second injection of local anesthesia is performed with a higher concentration agent to ensure effective anesthesia in the operative site. We use the fresh mix lidocaine 2 % with epinephrine and/or bupivacaine 0.75 % for the second local anesthetic injection. The patient will not feel this additional injection.
4. Local anesthetic is kept on the surgical field should the patient require any additional anesthesia.

We have found that this systematic approach to local anesthesia consistently provides effective anesthesia, minimal patient discomfort, and a high level of patient acceptance (Matarasso and Glogau 1996; Moody and Holds 2005). The major advantages of this approach are decreased cost of surgery, decreased need for postoperative observation, and decreased risk of an untoward event from intravenous agents. Patients who receive oral sedation are generally alert immediately postoperatively and can be safely released from the office or surgical suite without any prolonged observation period. Many patients appreciate having their procedure

in the familiar office environment as opposed to an unfamiliar location, if the surgery occurred outside the office setting. Advantages to the surgeon are greater use of office-based surgery, minimizing the amount of nonproductive time spent traveling to an operating room or surgical center, and better control of costs. It is easy to see other patients while office staff are preparing the next surgical patient. Potential disadvantages include the need to train office staff to perform many functions that traditionally were performed in the hospital or surgery center, the staff must be familiar with the handling of surgical instruments and biohazardous waste, and they must be prepared to handle the rare allergic reaction. Of course, appropriate resuscitation equipment should be on hand and operational. Finally, surgery on an awake patient forces the surgeon to be highly attentive to patient's needs during the procedure. The surgeon may need to pay extra attention to the operative environment because the patient will be aware of all activity and conversation.

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