

Pre-operative Procedure for Eye Removal Surgery by Exenteration.

PREOPERATIVE EVALUATION AND DIAGNOSTIC APPROACH

Indications for Surgery

Enucleation or evisceration surgery may be indicated for a blind painful eye, endophthalmitis, or cosmetic improvement of a deformed eye. In cases of intraocular neoplasms or the treatment of severe ocular trauma with a ruptured globe, where sympathetic ophthalmia is a concern, enucleation is appropriate and evisceration is contraindicated

In the vast majority of situations, the indication for exenteration surgery is to eradicate life-threatening malignancy or life-threatening orbital infection. The extent of the procedure should be explained to the client, especially which tissues are to be removed (this includes the eyeball, orbital soft tissues, and part or all of the eyelid structures). The surgeon should avoid lengthy discussions regarding the “mutilating” nature of the procedure but rather should help support the client to remain focused on the treatment of this potentially life-threatening problem through the life-saving nature of the exenteration surgery.

Removal of the Wrong Eye

Removal of the wrong eye presents one of the greatest disasters that can occur to the ophthalmic surgeon and patient. Every ophthalmologist and surgeon must be aware of this possibility, no matter how remote. Preoperatively, the surgeon may mark the forehead or trim the lashes on the appropriate side. These methods, however, are not foolproof. In the operating room, the surgeon should thoroughly review the chart, including the operative permit and the examination notes. It is important, then, that the surgeon him- or herself prepares and drapes the patient. Once a sterile operative field is set up, the surgeon must again verify that the correct eye is about to undergo enucleation. Following severe trauma, the correct eye is often externally deformed. In cases where the external appearance of both eyes is normal, the surgeon must compulsively reexamine the fundus to verify the pathology. The finality of the enucleation procedure cannot be overstressed. No degree of thoroughness is excessive in order to avoid removal of the wrong eye.

Indications for Surgery:

EXENTERATION

- Cutaneous tumors with orbital invasion
- Lacrimal gland malignancies
- Extensive conjunctival malignancies
- Other orbital malignancies
- Mucormycosis
- Chronic orbital pain

- Orbital deformities

STEPS:

- 1) Sedate the animal with xylazine (0.05 mg/kg body weight IV) and butorphenol (0.02 mg/kg IV) for standing restraint while it is restrained in a crush with a halter and nose lead.
- 2) Clip the hair in the surgical field (including the eyelashes).
- 3) Prepare the surgical site aseptically (don't use Chlorhexidine).
- 4) Perform the two blocks required for surgery using 2% Lidocaine:
 - a) Auriculopalpebral Nerve Block: Surgical manipulation of the eye is facilitated by nerve blockade of the eyelids. Auriculopalpebral nerve block can be placed to reduce upper eyelid movement prior to performing a Peterson or retrobulbar block. The auriculopalpebral nerve can be palpated as it crosses the zygomatic arch, roughly 5-6 centimeters behind the supraorbital process. Inject 5 milliliters of 2% lidocaine HCl subcutaneously on the dorsal aspect of the zygomatic arch at this location.
 - b) Peterson block/ Retrobulbar block/ 4 Point block.
 - 1) Peterson Nerve Block: After performing a small local skin block over the intended site of puncture, a 3.8-cm long 14 gauge needle is inserted through the skin as a cannula for introduction of an 18-gauge 9-cm long needle for the nerve block. The cannula is inserted caudal to the junction of the supraorbital process and zygomatic arch and is introduced through the skin. Then, the 18-gauge, 9-cm long needle is introduced through the cannula needle and is directed in a horizontal and slightly dorsal direction until the coronoid process is encountered. The needle is "walked off" the rostral aspect of the coronoid process and advanced in a ventromedial direction along the caudal aspect of the orbit until the needle encounters the bony plate encasing the foramen orbitorotundum. Once the needle is advanced to the foramen, it is advised that the needle be drawn back a few millimeters to reduce the risk of intrameningeal injection. After aspirating to assure the needle is not in the internal maxillary artery, 10-15 milliliters of lidocaine (2%) is deposited, with an additional 5 milliliters of lidocaine deposited as the needle is slowly withdrawn. Mydriasis indicates a successful block.
 - 2) Retrobulbar block: An alternative to the 4-point retrobulbar block is the single retrobulbar block . In this technique, the 9-cm long 18-gauge needle is bent into a ½ circle. The needle is inserted immediately ventral to the dorsal orbital rim and directed such that the needle impacts into the bone of the orbit. Then the needle is advanced as it is rotated ventrally in a progressive manner such that the needle remains in close proximity to the bone. After the needle is inserted to the caudal aspect of the eye, 20 ml of 2% lidocaine HCl is administered after aspiration to ensure that the needle is not positioned in a vessel or other fluid structure. Successful deposition of lidocaine causes mild proptosis of the globe.

- 3) 4 Point Retrobulbar Nerve Block: The 4-point retrobulbar block is technically easier and can be done more rapidly as compared with the Peterson eye block. In this technique, an 18 gauge, 9-cm long needle is introduced through the skin on the dorsal, lateral, ventral and medial aspects of the eye, at 12, 3, 6, and 9 o'clock positions, respectively. Introduction of the needle through the conjunctiva should be avoided to reduce the occurrence of ocular contamination. The needle is directed behind the globe using the bony orbit as a guide. When the needle is introduced into retrobulbar sheath, the eye will move slightly with the tug of the needle. After this location is reached and aspiration is performed to assure that the needle is not in a vessel, 5-10 milliliters of lidocaine (2%) is deposited at each site. Mydriasis indicates a successful block.
- 5) Drape to cover the surrounding area only exposing the surgical field.

